DiPS Program Guide

Routes Menu - Egotrip Mode to Change Routes

Klusters Function

Menu Commands & Other Information

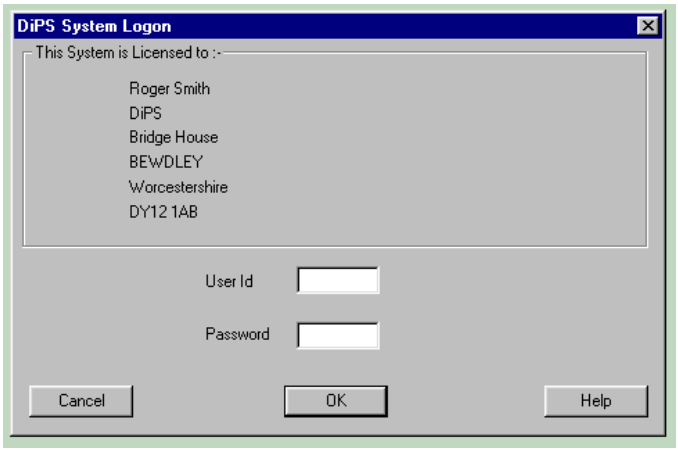
Help & Advice Section

Basics

Getting Started

Logon to Egotrip

When the program is started a dialog box will always appear to set the User Id and supply the program with the correct password for DiPS.



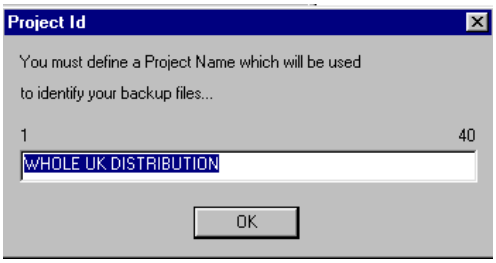
The logon dialog box will appear each time the program is started and will display the authorised licensed user of the system. If this is not correct contact DiPS for advice.

Both the User Id and Password fields must be must be answered. The User Id will set the relevant style for that user, setting screen positions and headings; whilst the password is necessary to check the dongle. The cursor will automatically be placed in the User Id field as the program starts. Input the appropriate text and either press the TAB key to move to the password field or click with the LHB in this field.

Enter the correct Password for your system and the click on the OK button to continue. If the Password is incorrect a message box will appear and the dialog will run again for a further two attempts before exiting the logon process and returning to the main icon view. If either User Id or Password are not entered a message will be displayed stating that both must be defined, with an OK button to return to the logon dialog.

If a new User Id is specified the system will provide a confirmation dialog to ensure that a new style is to be created.

An initial backup is done for the data file (MASS) when the program is started. As part of the logon routine a Project Id dialog box will appear initially in order to set a descriptive name to identify the study. This Project Name by default is set to the Study Title (found in the File, Study Settings dialog). This may be changed to any text of 40 characters or less. For more information see the section on Backup and Restore Files. Click OK at this point to continue into the program. When the initial backup is complete a MASS & Backup OK message will appear in the status line at the bottom left corner of the program.



Menus and Modes

The initial starting mode for any new user logon is normally Kingpin Mode (under the Edit menu), which is used for creating and modifying the basic study data, such as depots, calls, and vehicles. Existing Users will be returned to the last mode that they were working in, such as Egotrip Mode (under the Routes menu), where users can change routes. Different activity modes and other options can be chosen using the basic menu items across the top: File, Edit, System Attributes, Klusters, Travel, Warefrom, Routes, Style, Refresh and Help.

The File Menu options provide the functionality for activities such as loading data, saving files, and deleting data.
The Edit Menu and Kingpin Mode are used to create and change study data and basic parameters.
The System Attributes and Refresh Menus contain some default parameters and facilities that affect the whole study.
The Travel Menu has dialog entry for Road Speeds and menu options to calculate times and distances between locations.
The Warefrom Menu and Whatinsq Mode have programs to set depot boundaries using supply chain costs.
The Routes Menu can be used to set routing parameters and plan vehicle schedules.
The Style Menu has options to alter the information displayed: changing text columns visible and mapping options.
Klusters is a way of grouping very large volumes of data to make analysis easier.
The Help menu has an on-screen display similar to this manual.

For more information on these Mode options see the next section **Working with DiPS** (a general overview of the options) or each detailed individual section as required.

Using Passwords SWITCH to swap studies on startup or ERASER to reset Password

To save time loading up large studies when you need to retrieve another study, the latest program release allows the use of the special logon password SWITCH to bypass time consuming functions such as loading routes and running the matrix and go straight to the Retrieve an Old Study option in Kingpin Mode. To activate this feature, simply enter the word switch at the password prompt when the program first runs along with your normal logon IDeg

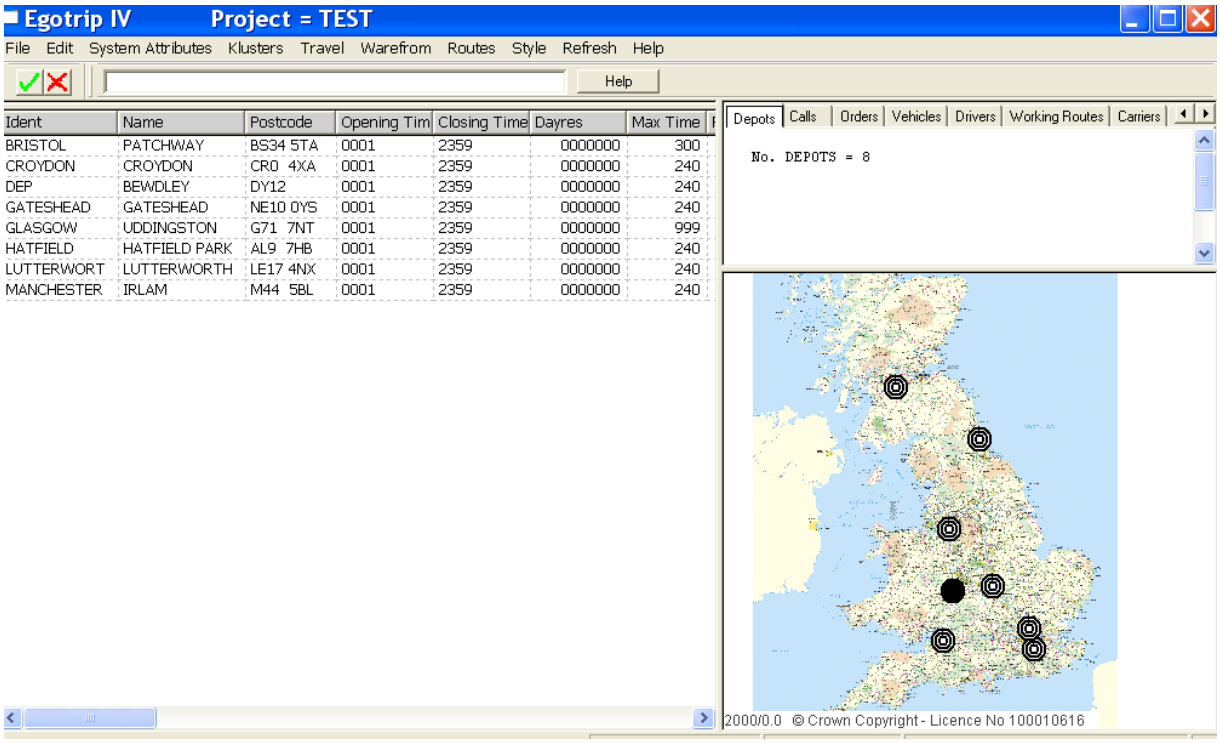
The latest program release allows the use of the special logon password **ERASER** to go straight to the Installation Profile dialog to enable the password to be seen or modified as required. he program will then show the Installation Profile dialog showing the current password. This can be changed using the Defie ea new Password field as required. Click OK to Save and close DiPS at this point and then simply re-run the program as normal to continue.

Working with DiPS

The initial starting mode for any new user logon is normally Kingpin Mode (under the Edit menu), which is used for creating and modifying the basic study data, such as depots, calls, and vehicles. Existing Users will be returned to the last mode that they were working in, such as Egotrip Mode (under the Routes menu), where users can change routes.

Edit Menu - Kingpin Mode to display, modify & create data

Kingpin mode is selected from the Edit menu to create and manipulate data, such as depots, calls, orders, vehicles and so forth. To switch to this mode click Edit menu, followed by Kingpin mode. The screen will change accordingly to display 3 panels - Graphics, Summary panel and Data grid on the left. The initial display will be for depots. To change the view to see any other items, click on the appropriate tab on the Summary Panel. The details will be displayed in a spreadsheet view with one cell for each field of the item - for example a call may have an Ident field, Name, and Postcode in separate cells. The Ident will always be displayed as the first column in Kingpin mode. Double click with the left hand button to display a depot or call dialog as necessary. To change the information on display, use the Style menu and move to Kingpin Headings and select the option by clicking the LHB on the mouse to display the dialog window.



The Edit menu options are also employed to setup Products and Vehicle Units and the different Vehicle types necessary. Use the Products Units & Work dialog to set the delivery products, unloading time parameters and vehicle units; and the Vehicle Classes option to create the required vehicle types with capacities, product carrying capabilities, compartments, operating costs and so on.

Data is normally loaded from spreadsheet or interfaced file using options in the File menu (for Office files using the Study, load Data menu item). Each Kingpin Mode panel menu can also be used to add more data, such as extra depots for example; or to change call or order parameters after loading.

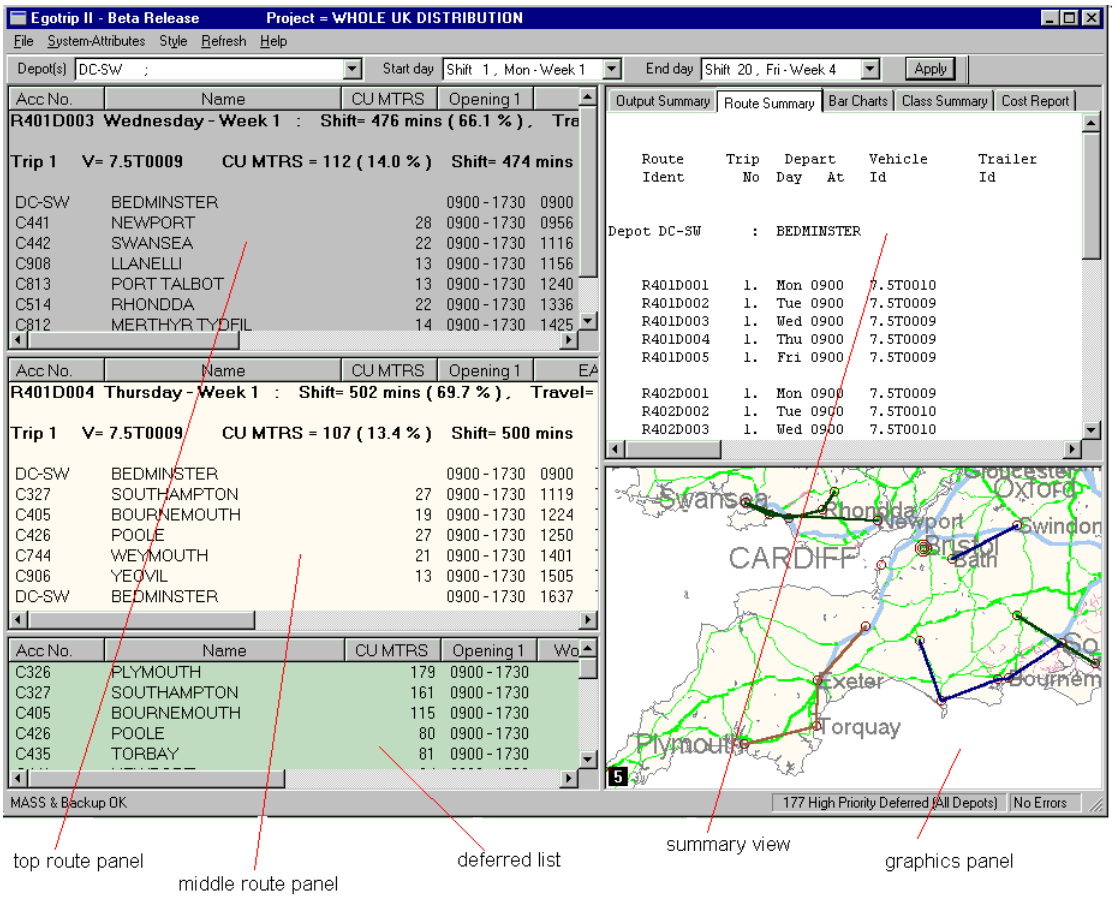
Data may be exported into other file formats or printed from any of the panels by using the menu option Screen Data Export/Print accessed by clicking the right hand mouse button on the required data.

Routes Menu - Egotrip Mode

Accessed by using the Routes Menu, in Egotrip mode adjustments to routes produced by a scheduling run can be performed or manual routes built from scratch to use as a starting position for further work. For more information see the detailed section on Egotrip mode. To produce schedules Routes menu options are provided. To route vehicles or operatives on a daily scheduling operation, first set the required depots and dates set in the toolbar, select the Routes menu followed by Run Dayplan or Manplan. For more information on these programs see individual sections on Daily Vehicle Scheduling with Dayplan and Scheduling Operatives with Manplan. To route vehicles in a strategic study, first set the required depots and days in the toolbar, then select the Routes menu followed by Vanguard.

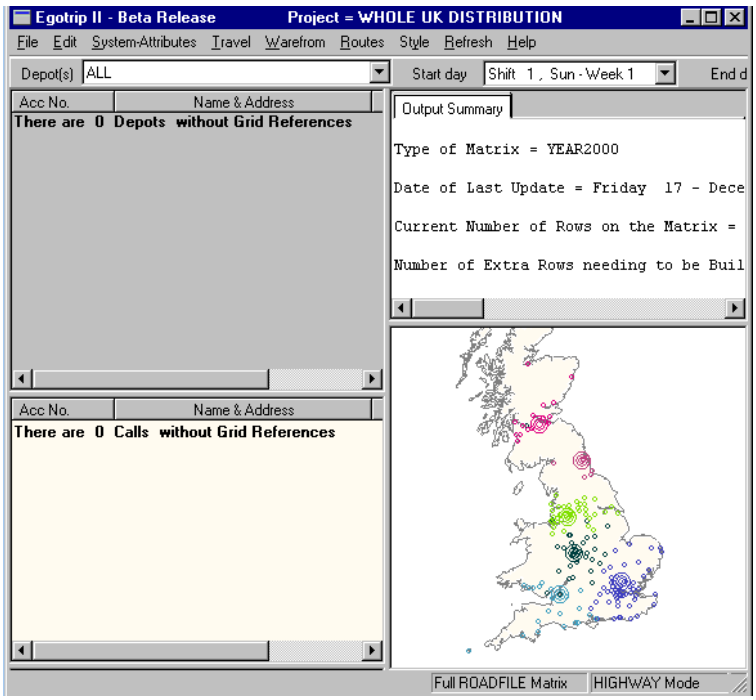
Whilst in Egotrip mode the screen will sub-divide into sections to display routes, un-routed calls, graphic displays and summary reports. (see graphic below)

The **text panel areas** can be used to -	The **graphics area** can be used to -
Create new Vehicle Routes, Carrier Lists, Post Lists Add Unrouted Calls or Orders Transfer a Call or Order from one Route to another Move Calls or Orders within a Route Delete Calls or Orders from a route Add or Change Drivers, Vehicles and Trailers Add extra Trips or Transfer Trips between routes Optimise Route sequence Reverse a trip Change departure times for a route Modify call and depot details including quantities Delete Empty Trips or Routes Delete calls without orders (daily planning) Change the Route length in Elapsed Days	Delete Calls/Orders or Add Unrouted Calls/Orders to a Route Transfer a Call or Order from one Route to another Move calls or Orders within a Route Display Calls in a pop-up box The **summary view** can be used to - Add or Change Drivers, Vehicles and Trailers Delete Empty Trips or Routes Add extra Trips or Transfer Trips between routes Change departure times for a route Change the Route length in Elapsed Days



Travel Menu - Highway Mode

Highway Mode may be used to easily identify and then locate calls or depots without valid grid reference locations. It will display an Output Summary Panel, graphics image, and text panels for calls and depots. It may be accessed from the Travel menu option, which itself is used to produce a TTMATRIX which may be envisaged as a table of times and distances between all the points in your study. All the DiPS planning programs which rely on this detailed information access the latest TTMATRIX and thus it must be completed before any planning runs are attempted. For more information see section on Calculating Times and Distances with Matrix.



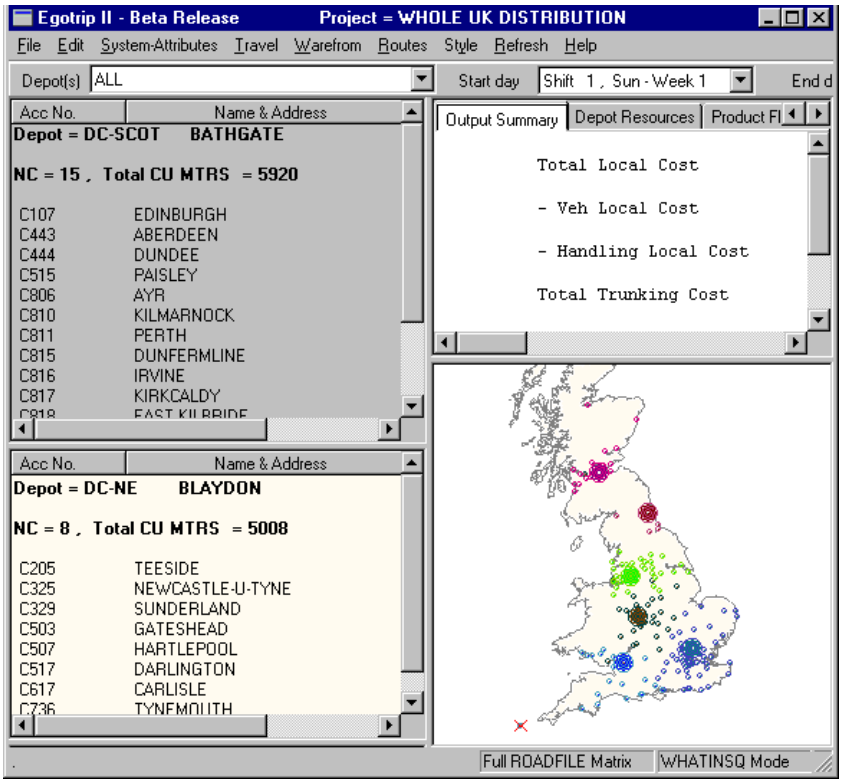
Although basic default Road Speed parameters are provided, these can be modified and other criteria (such as time of day speeds, individual road, or boxed area reductions) added using the Travel menu, Parameters dialog.

Detailed journey plans between a set of call or depot data (including the roads taken) may be produced using the Run Itinary menu option.

Warefrom Menu - Whatinsq Mode

This mode, when selected, will load all the selected depots and calls and construct a scaled graphical image of the area to be examined showing the current allocation of calls to depots. (In DiPS every call must have an “owning” depot that is used as the primary source of any delivery or collection.) The current or ASIS” situation can be useful for verifying any data mistakes (incorrect postcodes) or checking depot product throughput in the Depot Resource summary tab.

A list of the calls allocated to each depot may be displayed in either of the two text panels on the left hand side. Calls may then be moved between depots either using text panels to drag calls or graphically by drawing boundaries or clicking on calls on the map display. For more information see the section on Allocating Calls to Depots with Whatinsq.



Any manual realignment or ASIS model may also be compared with an optimisation analysis to reallocate demand (and supply) points to their cheapest depot or supply chain option by running the Warefrom program. This routine will look at the costs involved in moving the product from its original source point (through a trunking network if defined in the Warefrom Parameters menu item) and allocate each call to produce the cheapest depot boundaries given any throughput limitations. For more information see the section on Running Warefrom

The Anyware menu option is also available to calculate a “best” single depot site to serve the calls in question.

Style Menu

The Style options are used to control size and position details for windows, panels and route columns for each user. When a user logs onto DiPS the previous settings are automatically restored. The Style menu itself offers options to change the columns displayed in different text panels for each Mode. All the Route options set information for Egotrip Mode, as do Deferred and Carrier Headings. The List Headings option is used to set the required columns and positions for List dialog boxes used in Draw Area or Click Call Mode graphics mode. Matrix / Warefrom / Klusters Headings options are employed used to set the required columns and positions for the text panels in Warefrom, Whatinsq, Klusters or Highway mode. The various Kingpin options for depots, calls, orders, vehicles and so forth will alter the Kingpin Mode display.

Change the Depots and Days using the Toolbar

The Toolbar is displayed under the menu options bar and allows the user to select depots to work with and alter days (for strategic) or dates (for daily planning). It is important to note that once depots are removed from display their routes and Deferred calls/orders are not shown in any of the panels.

File Menu

The File menu, through the Study option, provides a means of loading data from spreadsheet, saving current and retrieving old studies to use another time, and creating brand new files. Menu items are also available to delete data, and create and restore temporary backups of the current study data. The Print option can also be used in the different modes to product standard reports. For more information see the specific section on Menu commands.

System Attributes Menu

The System-Attributes menu can be used to change DiPS system wide parameters and offers options to set postcode acceptability, kilometres/miles choice, and error messages amongst others: For more information see the specific section on System Attributes.

Refresh Menu

The Refresh menu offers useful options to redraw the graphics, re-set the positions of all graphics windows for the current User style, and look up all postcodes again to ensure correct location of study data.

Klusters Menu

The Klusters function provides a means of dealing with larger numbers of strategic call entities by grouping them together in an area. The area is termed a kluster and is made up of the individual call entities that keep their identity, though the Route Planning, Warefrom and Matrix functions can all deal simply with the kluster entity itself rather than each individual call. In such a way using klusters can decrease the time taken to run DiPS programs and the output produced as it reduces the detail involved in analysis. Once klusters are established on a study they will appear in all modes rather than the individual call data.

Help Menu

With the Help menu, users can access an on-screen version of the manual, with following commands to provide assistance with the DiPS application:

Contents	Offers you a contents page to topics on which you can get help.
About	Displays the version date and time of the application.
Search	Displays the help search facility with selected keywords for DiPS.

Creating a Brand New Study with Different Setup and Data

The File, Study, New Study option is used to create a brand new MASS file in which all data is stored (Depots, Calls, Vehicles, Routes, and program parameters). This option will reset all data and parameters in a new MASS file and will delete any current setup and data. There can be only one working copy of the files at any time.

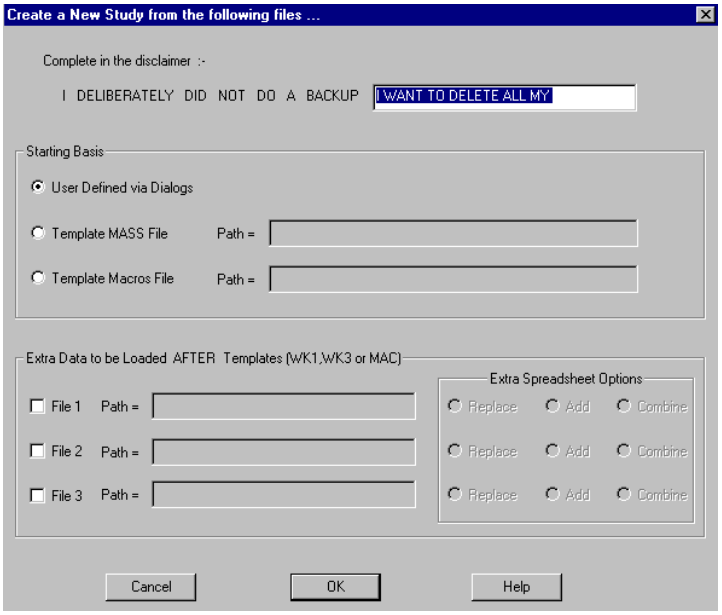
In this way the first option presented is to **Archive the Current Study ?**

If the current data is not archived the Create New Study dialog will require the disclaimer to be completed - I WANT TO DELETE ALL MY DATA

(If the disclaimer is mis-typed the process will cease without removing the existing study.)

Starting Basis

As a starting basis for new studies, template files can be employed to provide any information required initially or basic data can be defined from User Defined Dialogs.

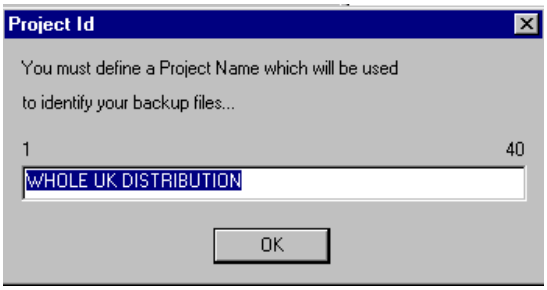


Templates

Two options are provided for templates: MASS file or Macro file. These are usually established from previous study information and can contain any amount for study data (depots, vehicle types, products, even call data). (To save a MASS file in its current state for future use here, select the File, Study menu option *Save as Template File* to display a file dialog.) Click on the appropriate option to display a file selection dialog. For MASS files all .NEW files are displayed in the \dips folder and for macro files all .MAC files are displayed. Other named files may be selected if required.

Following this style of setup a facility is available for **Extra Data to be loaded after Templates** from either spreadsheet or macro files. Spreadsheets can be constructed using any current version of Excel, and data may be loaded from a number of sheets on the same file. Databases can be loaded using versions of Microsoft Access. For more information see the section on Loading Data from Spreadsheet or macro files in the Edit section.

After setting the relevant files, click OK to continue and the data will be loaded in the sequence specified. The File, View Output option will also launch to display comments and error messages accordingly, and these may be printed if required using the Print menu option.

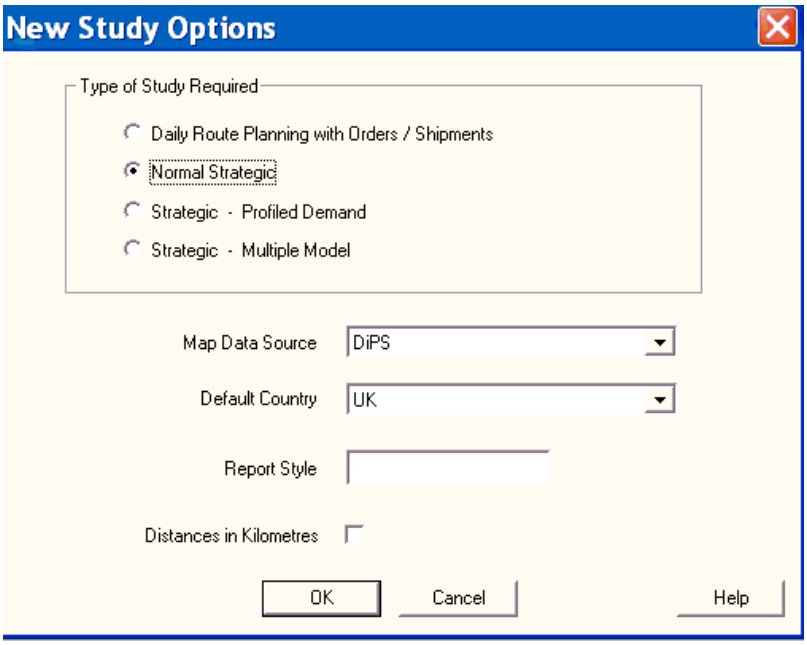


As part of the new study routine a Project Id dialog box will appear initially in order to set a name to identify the backup files created. This may be changed to any text of 40 characters or less. It cannot be re-set again for this session of the program. Once established an initial copy of the data will then be made.

After all the data is loaded the program will proceed in Highway mode to allow a TTMatrix to be run calculating times and distances between points. For more information see the section on Using Highway Mode in Travel function.

User Defined via Dialogs

To define basic setting manually, select the User Defined via Dialogs option and click OK to continue. The New Study Options dialog will appear first.



Type of Study required

Four study types are available – Daily Route Planning for day-to-day scheduling of orders, Normal Strategic for planning of deliveries over a period of weeks, Strategic – Profiled for delivery volumes defined by % over a week, and Strategic – Multiple for calls having a number of different ranges delivered from a number of different locations. Use the radio button to select the required type.

Map Data Source

This field can be used to select whether DiPS road databases are to be used or MapPoint road networks. MapPoint files must be installed on the PC in question and are available for Europe and North America. Under normal circumstances DiPS would remain set as the map data source.

Default Country

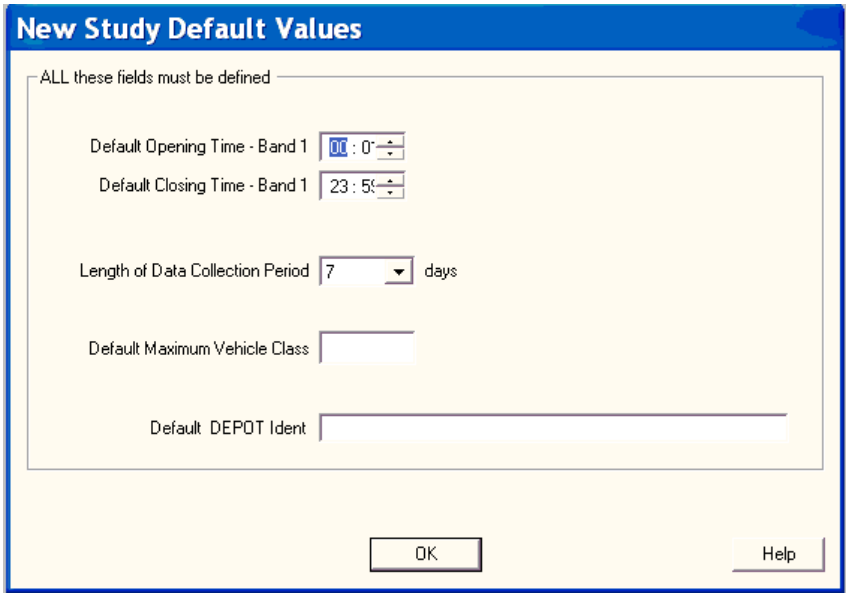
This field is applicable if databases exist for more than one country. A default country code will need to be set from those listed in a drop-down box (e.g. UK, NI, EUR, F , B etc.) in order to define call locations using gazeteer facilities or postcodes as data is loaded.

Report Style

YEAR2000 is normal for strategic studies. However certain key words can be used to control the style of output produced by DiPS programs. This effect is used almost exclusively by the Daily Route Planning sites.

Distance in kilometers

Normally when a new study is established speed and distance information will appear in miles. By setting this value ON, the system will modify all parameters and output values to appear in kilometers. This can be changed at a later time if necessary using the menu option in System Attributes.



Once the appropriate values have been set click OK to continue. The Study Default Values dialog is then run in order to input the necessary basic information for the study.

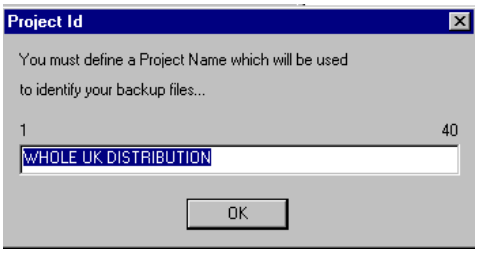
The Default Opening Time displayed specify the times for all calls created unless input information (from a spreadsheet for example) dictates otherwise. Basic values are 0001 to 2359.

The Maximum Vehicle Class field requires a type so that a vehicle type may be recorded prior to their use in the maximum vehicle size restriction on the initial depot. Additional vehicle types may be added later.

The Data Collection Period screen brought up next requires that a valid study period be input. The default value is set at the minimum allowable for a study - 7 days.

An initial Depot must be created, as any calls input or loaded from an external source have to be allocated to a depot. This depot may not relate to an actual location to be used (i.e. a "dummy" depot) but merely provide a way of loading in more depots and calls. Additional depots may be added at any time.

Once the appropriate values have been set click OK to continue. As part of the new study routine a Project Id dialog box will appear initially in order to set a name to identify the backup files created. This may be changed to any text of 40 characters or less. Once established an initial copy of the data will then be made.



The program will proceed in Highway mode to allow address information to be input for the depot. For more information see the section on Using Highway Mode in Travel function.

Once this process is completed, other parameters may be set, such as vehicles or product factors, and data loaded from spreadsheet files using the options in the File, Study menu.

Working with the Text Area for Routing

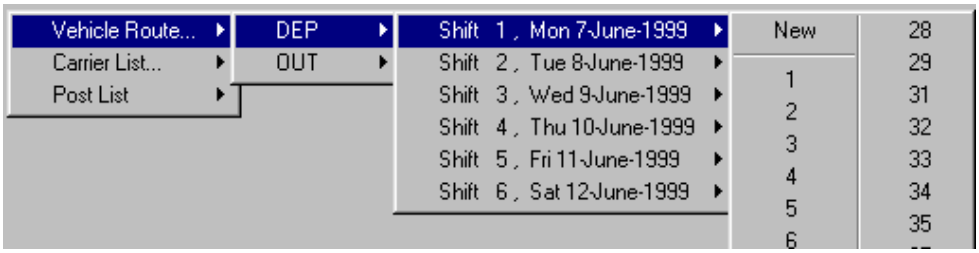
Route Display

In the text panels the selected route is displayed with the following default information in columns - Account no., Address, Postcode, Arrival Time (EAT), Work Time, Travel Time to the next point, Travel Distance to the next point, Load (in vehicle units) and Error. This setup or Style can be changed if required using the Style menu option. Summary information is also shown for the route and its trips giving departure date (if appropriate), shift time, travel time, and travel distance for the route as a whole; and for each trip the vehicle, quantity, and shift time.

A row is shown for each depot and call on a trip. A row can be highlighted using the LHB to enable a call or order to be moved. As entities are moved the route displays are updated automatically to reflect the changes made.
Scroll bars are available at the right and bottom edges of the document window. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the document. You can use the mouse to scroll to display other sections of the route.

To display a route or change the current route click with the RHB in a text panel or pop-up route window to display the pop-up menu. The list of options includes Vehicle Route, carrier List and Post List.

Each of these has further cascade menus to display all the current routes. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of DiPS shift numbers and either days or dates for strategic or daily planning. Moving over the shift or date required offers the choice of all the routes currently at that depot and a **New** option. Using the LHB click once to add an existing route or if New is selected a further pop-up box will appear to display the Route length slide bar to select the route length in days (if applicable). The default setting will always be for a 1 day route. If you need to amend the length click with the LHB on the slide bar to select it. Click and hold down the LHB to drag the indicator to a new route length or point to the required number and click the LHB. Note that the maximum shown will not allow a route to overlap the same route number on a subsequent day. Click the OK button to display the route.



The same functionality applies to both the Carrier and Post lists.

Working with the Text Area to modify routes

Adding Unrouted Calls or Orders

Click with the LHB on the necessary call or calls in any route window or on the deferred list to select them and drag the highlighted calls into the new position in the required route using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

The deferred list will display the unrouted orders currently available. The list of Orders may be sorted as necessary by the user - see the Deferred List help section.

Delete a Call or Order from a Route

Click with the LHB on the necessary call or calls in any route window to select them and drag the highlighted calls into the deferred list (the bottom panel of the main three route windows) using the RHB or use the Delete key.

Transfer a Call or Order from one Route to another

Click with the LHB on the necessary call or calls in any route window or on the deferred list to select them and drag the highlighted calls into the new position in the required route using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

Move calls or Orders within a Route

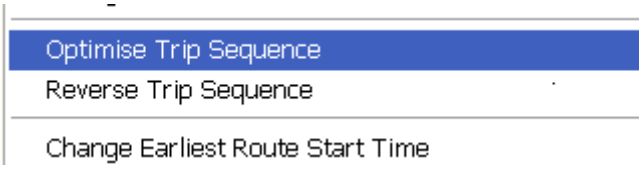
Click with the LHB on the necessary call or calls in any route window to select them and drag the highlighted calls into the new position within that route using the RHB. A red bar will appear indicate their new position between existing calls or depots.

Add a new Trip to a Route

To enable a vehicle to go on an extra trip, click with the RHB on the required route or trip to display the pop-up menu. Choices available are Create New trip Before and Create New Trip After. Both instances will create a new trip without a vehicle in the required location so that calls or orders may be added to it.

Delete an Empty Trip or Route

To delete an empty trip or route , click with the RHB on the required route or trip to display the pop-up menu and click with the LHB on the relevant menu option.



Optimise the Sequence of a Trip

Click with the RHB on the required route to display the pop-up menu and select the Optimise Trip Sequence item .

The Optimise function works by putting the drops into the DiPS routing code to try and achieve the best sequence possible, whilst obeying all the rules set. Parameters such as time windows, vehicle capacity, shift times and driving issues will if possible be considered in the final option. It can be thought of as the program temporarily removing all of the drops from the route and then putting just those drops back into the routing program. The 3 current Algorithm Key settings on the Routes, Parameters dialog are used to sort the drops into a sequence before planning, drops are added and different options calculated. If adding any drop into the routes causes an error, the process re-starts using this drop and adds the others around it in order to achieve the best possible route. If route errors are unavoidable the process will return the best driving sequence.

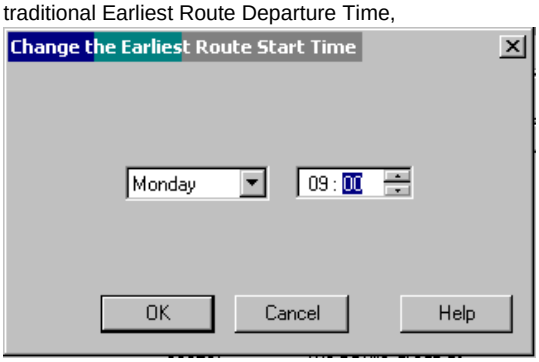
The process will display a progress indicator and then re-load the new route information. The progress dialog will show blue when the route can be achieved without errors, changing to red when errors are inevitable. . Errors accounted for are vehicle capacities, banned calls, waiting time, and compartment or side loading issues. Routes with errors such as vehicle size exceeded at a call, crew size, or product mixing will still optimize within time windows.The complexity of the route (e.g. no. of drops, time windows, products etc.) will govern the time taken to complete the optimise routine.

Reverse Trip Sequence

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Reverse using the LHB.

Change Departure Time

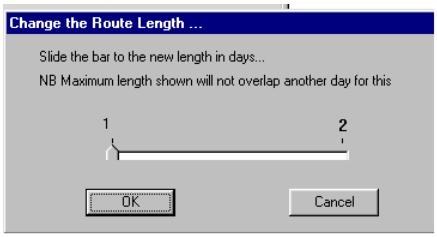
There are two methods of setting the departure time for a route, using either the traditional Earliest Route Departure Time, which controls the time the driver clocks on to start his shift, or using the Trip Gate Departure Time, which can be set for any or all trips of a route to define the time the driver actually leaves the depot (that is after any pre-shift allowance or depot work time) To control the use of one or the other of these parameters, set the System Attributes parameter *Use Explicit Gate Departure Times.*



To set the required time, from the Text Panels or Summary View, click with the RHB on the required route or trip to display the pop-up menu. From the list of options select either **Change Earliest Route Departure Time** or **Change Trip Gate Departure Time** using the LHB. A Dialog window will then appear with a spin button to increment the hours or minutes accordingly. Alternatively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before. Use the drop-down box to set the day Choose OK to confirm and apply the changes or Cancel to quit.

Change Route length in Elapsed Days

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Change Elapsed Time in Days using the LHB.

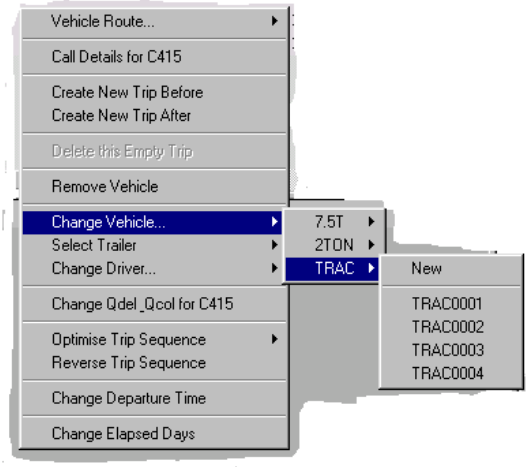


This action displays the Route length slide bar dialog to select the route length in days. The default setting will always be for a 1 day route. If you need to amend the length click with the LHB on the slide bar to select it. Click and hold down the LHB to drag the indicator to a new route length or point to the required number and click the LHB. Note that the maximum shown will not allow a route to overlap the same route number on a subsequent day.

Click the OK button to amend the route or choose Cancel to quit.

Modifying Vehicles

Click with the RHB on the required route or trip to display the pop-up menu. The list of options includes Change Vehicle and Select Trailer.

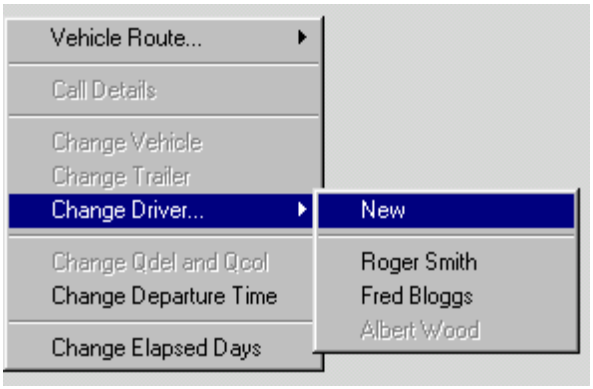


Each of these has further cascade menus to display all the current classes and available resources. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance all the classes will be displayed. If the cursor is moved over a class a further menu will appear offering the choice of all the vehicles currently allocated to that depot and a **New** option. Using the LHB click once to add an existing vehicle or if New is selected a further pop-up box will appear to allow another vehicle to be created. This box will initially display the next sequence number available for this class; however it impossible to select this field and edit the Ident as necessary. Click with the LHB on OK to create the vehicle or choose Cancel to exit.
The same functionality applies to the Trailer option. In the case of Tractors and Trailers, if the selected trailer does not apply to the current vehicle allocated (or vice-versa), a warning message will be displayed before the vehicle (or trailer) is removed. Question marks will be displayed until an appropriate Ident is added.

To remove a vehicle from a route click with the RHB on the required route or trip to display the pop-up menu. The list of options includes **Remove Vehicle** Using the LHB click once on this option to remove the vehicle. **Automatically allocate best vehicle and trailer** will choose the smallest vehicle needed for the trip frpm those available at the depot at the required time.

Change a Driver or create a new Driver

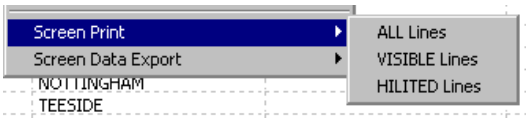
Click with the RHB on the required route to display the pop-up menu and as the mouse cursor is moved over the Change Driver item the next level of menu automatically appears. In the first instance all the available classes or drivers will be displayed (those greyed-out are already allocate to other routes) and a **New** option. Using the LHB click once to add an existing driver/class to select, or if New is selected a further pop-up box will appear to allow another driver to be created. This Driver Details dialog will by default have a name field to input the Ident as necessary to create a name using up to 20 characters. Click into the appropriate fields to change other information as required. For more help refer to the section on driver details.



Finally click with the LHB on OK to create the driver or choose Cancel to exit.

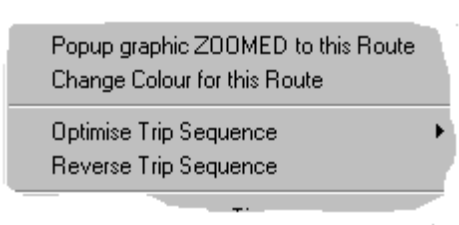
Printing Screens / Export Data

From Text Panels in all modes there are a number of print options for printing the screen as displayed o rexporting the data (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB. ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed.



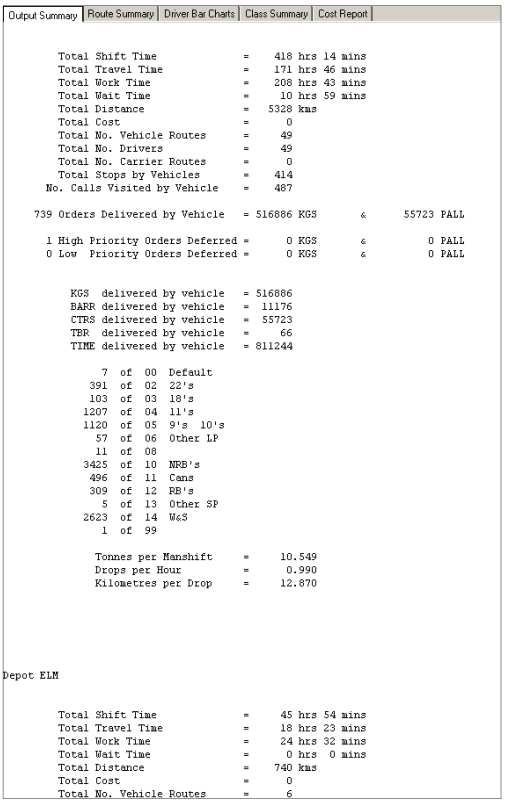
Changing the colour for individual routes

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options click on Change Colour for this Route using the LHB. The colour dialog will then operate as above.
The route colour once set will apply **permanently** to this route



Working with The Summary Panel for Routing

The Summary Panel can be used to display a number of different summary reports for the all the current routes displayed. Each report may be selected by clicking the LHB of the mouse on the appropriate tab. It will then be displayed in the panel until another is selected. By default the Output Summary is given priority appearance.



The Output Summary section

The Output summary is for information purposes only showing an updated summary of the same basic total information as displayed on the program text window when the route planning is finished. It provides an overview of the totals planned, and resources used in terms of deliveries, collections, vehicles used, carriers and so on. The initial lines of the report will provide an overall total for all depots currently included in the display.

Key performance indicators, such as Tonnes per manshift, Drops per hour and distance per drop are also included as standard.

Where calls have not been routed, a summary of the deferred calls may follow this section listing the amount of calls and product and vehicle units currently Unrouted.

It will also display (if there are mulitiple depots), the summary information repeated for that depot only in sequence underneath the overall total.

A user defined output summary section is available from the Style menu option – Route Output Lines.

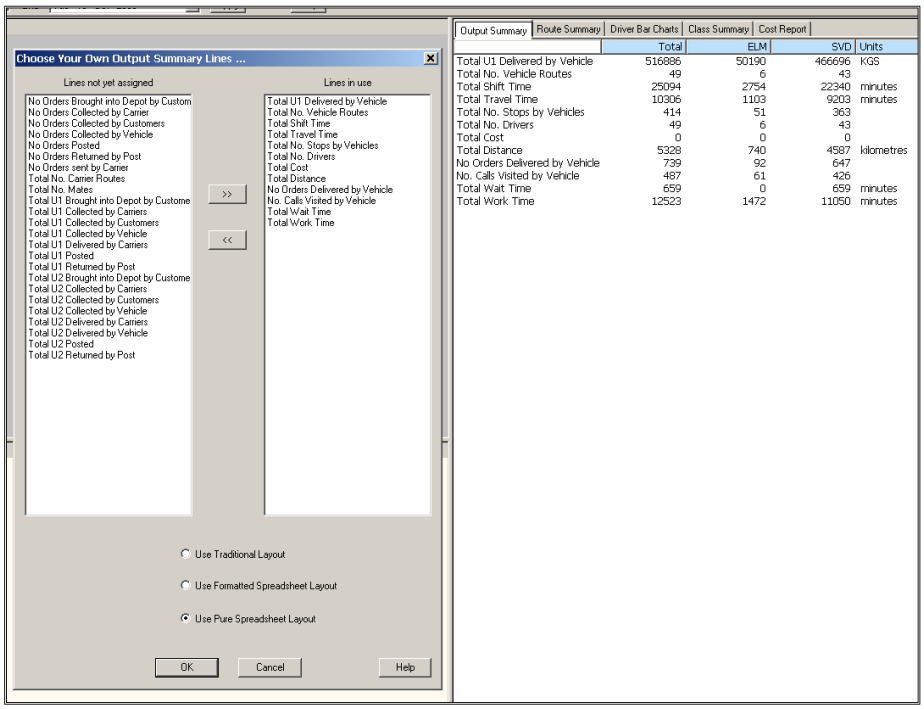
The dialog can be used to set the required layout and columns and positions for the output summary panel. Select the option by clicking the LHB on the mouse to display the dialog window. The selection options can be used to define the layout style preferred : either using the traditional fixed format report (see above), or one of the spreadsheet style layouts.

The pure spreadsheet layout will display information in rows of cells , whereas the formatted layout will leave some cells blank (forming a “half-way house” to the traditional layout).

If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel. The available column headings are displayed in the left hand selection box and include totals such as U1 (vehicle unit1) delivered/ collected, U2 (vehicle unit2), shift, travel and work times etc.

In this report type, an overall total will appear as the first column followed by a sub-total for each depot applied. Finally the units column will display the relevant description names employed.

When using the Spreadsheet styles, the Summary information can also be printed or exported from the menu accessed by clicking the right hand mouse button



The Route Summary section

Adding a Route Number to a Window from the Route Summary section

Point to the route number (RxxxDxxx) or the 'T' or 'R' in Vehicle/Driver reports and click the left mouse button as follows -

single click	display the route in the top text panel
double click	display the route in the middle text panel
click three times	display the route in a pop-up window (repeat for multiple routes)

The Route Summary report itself is provided to enable a quick analysis of the current routing patterns. In terms of the columns printed from left to right :

Route Ident gives the DiPS route reference number (used to re-print the route from Kingpin or amend in Egotrip)
Trip No. gives the trip number 1, 2, 3, etc.
Departure columns give the day and time of departure for each trip of the route
Veh+Trlr gives the vehicle class and trailer class in use (see the Traffic Sheet or full print for individual details)
Capacity section gives the Maximum Available Unit capacity, MaxU is the capacity used, and % the percentage utilisation figure
No. Pts is the number of individual calls visited and NC is the total number of drops made at those calls
Shift section gives the Maximum Available Shift Time, Used is the Time used, and % the percentage utilisation figure
Travel Time and Dist gives the route travel time and distance in appropriate units (miles or kms)
Work Time is the total work time for the route including pre-shift allowances, unloading/loading time at calls and any depot time incurred
Cr is the crew size
Total Cost is the cost for that route based upon sum of vehicle/driver costs set
Std. Shift and Perf. % give standard shift times compared with the basic shift position if work or driving performance factors are set in Kingpin to represent the activity levels achieved in comparison with the levels without these factors.
CO_Seq is the Callover sequence no. for the route and *Fleet No* the allocated fleet code (daily planning)

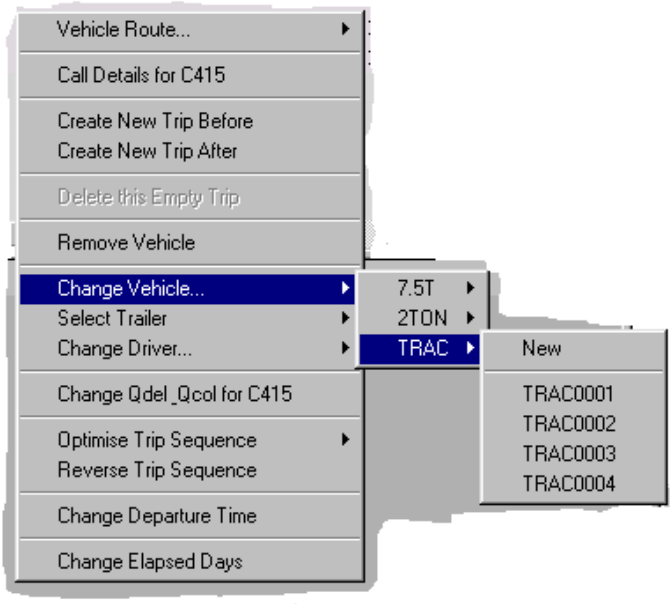
It can also be used as described below to modify certain aspects of the routes.

Delete an Empty Trip or Route

To delete an empty trip or route , click with the RHB on the required route or trip to display the pop-up menu and click with the LHB on the relevant menu option..

Modifying Vehicles

Click with the RHB on the required route or trip to display the pop-up menu. The list of options includes Change Vehicle and Select Trailer.



Each of these has further cascade menus to display all the current classes and available resources. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance all the classes will be displayed. If the cursor is moved over a class a further menu will appear offering the choice of all the vehicles currently allocated to that depot and a **New** option. Using the LHB click once to add an existing vehicle or if New is selected a further pop-up box will appear to allow another vehicle to be created. This box will initially display the next sequence number available for this class; however it impossible to select this field and edit the Ident as necessary. Click with the LHB on OK to create the vehicle or choose Cancel to exit.

The same functionality applies to the Trailer option. In the case of Tractors and Trailers, if the selected trailer does not apply to the current vehicle allocated (or vice-versa), a warning message will be displayed before the vehicle (or trailer) is removed. Question marks will be displayed until an appropriate Ident is added.

Conflicts in Vehicle Use

Vehicles which are not available will appear in the list but will be greyed-out to prevent their selection. If a vehicle is added to a route which leads to a conflict in it's use (i.e. it overlaps another route) a message box will appear. After OK is selected the system will attempt to remove conflicts by manipulating the routes in question. If the routes cannot be modified to avoid overlap the message will re-

appear after a short period of time. This will also apply whenever the Route Summary area is used and applies also to other resources such as drivers and trailers..

To disable this warning a parameter **Show Overlapped Vehicle Use** on the System Attributes menu can be amended. By default it is set to allow messages to be displayed. Once changed it remains in force until disabled or the program is closed. To remove a vehicle from a route click with the RHB on the required route or trip to display the pop-up menu. The list of options includes **Remove Vehicle** Using the LHB click once on this option to remove the vehicle.

Moving Vehicles

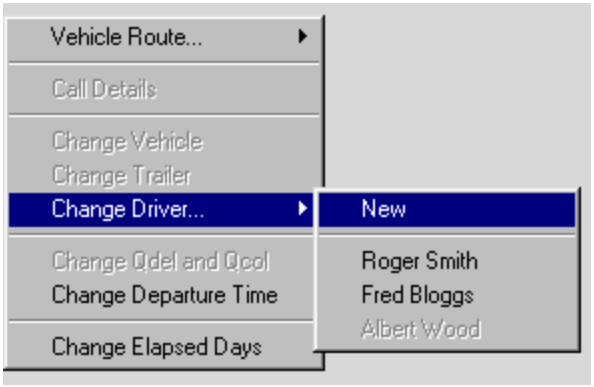
In the Summary Panel it is also possible to move vehicles between trip and routes using the mouse to drag and drop. This function is only available in the Vehicle Id or Trailer Id column of the Route Summary report. To move a vehicle or trailer, click and hold down the RHB on the necessary text and drag the highlighted resource (it will appear in red) into a new position on the report. When the button is released again the selected vehicle or trailer will replace the original resource allocated. Where appropriate the same vehicle will be allocated to all trips of a route if this is required by the parameter on the MASS file.

Fleet No & Route Label

An 8 character Fleet No and/or Route Label may be manually input for each route by the User for reference purposes. These are exported and can be displayed in the route summary section of required.

Change a Driver or create a new Driver

Click with the RHB on the required route to display the pop-up menu and as the mouse cursor is moved over the Change Driver item the next level of menu automatically appears. In the first instance all the available classes or drivers will be displayed (those greyed-out are already allocate to other routes) and a **New** option. Using the LHB click once to add an existing driver/class to select, or if New is selected a further pop-up box will appear to allow another driver to be created. This Driver Details dialog will by default have a name field to input the Ident as necessary to create a name using up to 20 characters. Click into the appropriate fields to change other information as required. For more help refer to the section on driver details. Finally click with the LHB on OK to create the driver or choose Cancel to exit.



Add a new Trip to a Route

To enable a vehicle to go on an extra trip after arriving back at the depot, that is to do a 2nd trip :-

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Create New Trip After using the LHB.

To add a first trip before the current trip :-

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Create New trip Before using the LHB.

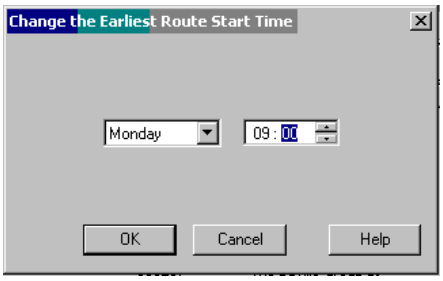
Both instances will create a new trip without a vehicle in the required location so that calls or orders may be added to it.

Delete an Empty Trip or Route

To delete an empty trip or route , click with the RHB on the required route or trip to display the pop-up menu and click with the LHB on the relevant menu option.

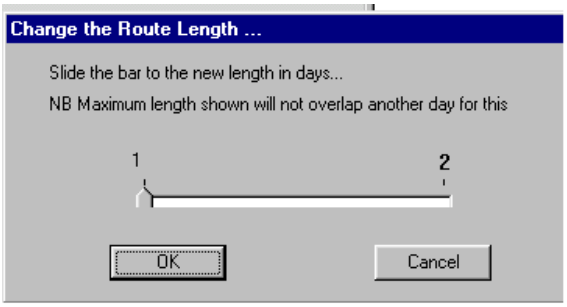
Change Departure Time

To set the required time, from the Text Panels or Summary View, click with the RHB on the required route or trip to display the pop-up menu. From the list of options select **Change Earliest Route Departure Time** or using the LHB. A Dialog window will then appear with a spin button to increment the hours or minutes accordingly. Alternatively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before. Use the drop-down box to set the day Choose OK to confirm and apply the changes or Cancel to quit.



Change Route length in Elapsed Days

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Change Elapsed Time in Days using the LHB.



This action displays the Route length slide bar dialog to select the route length in days. The default setting will always be for a 1 day route. If you need to amend the length click with the LHB on the slide bar to select it. Click and hold down the LHB to drag the indicator to a new route length or point to the required number and click the LHB. Note that the maximum shown will not allow a route to overlap the same route number on a subsequent day.

Click the OK button to amend the route or choose Cancel to quit.

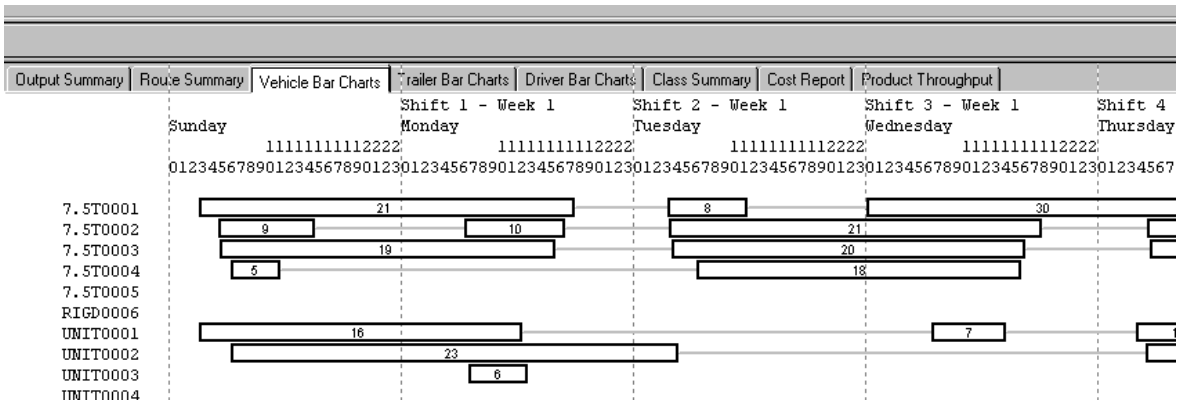
Customising Route Summary Headings

Use the Style, Route Summary Headings menu option to set the required layout and columns and positions for the route summary area. Select the option by clicking the LHB on the mouse to display the dialog window. The selection options can be used to define the layout style preferred : either using the traditional fixed format report, or one of the spreadsheet style layouts. The pure spreadsheet layout will display information in rows of cells , whereas the formatted layout will leave some cells blank (forming a “half-way house” to the traditional layout). If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel. If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel. The available column headings are displayed in the left hand selection box and include options such as route no., trip no., vehicle, U1, U2 (vehicle unit1 or 2), shift, travel and work times etc. When using the Spreadsheet styles, the Summary information can also be printed or exported from the menu accessed by clicking the right hand mouse button. Pure spreadsheet formats can also be sorted by clicking with the left hand mouse button on a header.

The Bar Charts section

Bar charts will demonstrate where drivers, tractor units, rigids, and trailers are utilised throughout the day. Each day is broken down into 24 1-hour sections represented across the top of the chart starting with **0** for midnight and ending with **2 3** for 11pm.

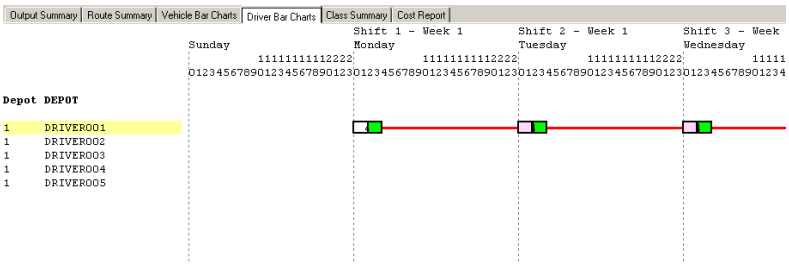
Where a trip starts within that hour a bar will appear (showing hours used) and spread over every hour that the trip is away from the depot, even if it is for a single minute's duration. This logic applies to all the charts. A vehicle will only appear on the chart if it is used. Those vehicles not in use will NOT appear. The bar charts will appear for a 7 day period for each week of the plan. Trailer bar charts show the turn-round time for each trailer with a hashed display for each hour the trailer is unavailable.



In the Vehicle or Trailer Bar Charts it is possible to move trips between vehicles using the mouse to drag and drop. To move a trip, click and hold down the RHB on the necessary **T** marker for a trip and drag the highlighted resource onto a new vehicle or trailer position on the report. When the button is released again the selected trip is moved.

Drivers Errors

On Driver Bar charts errors are displayed in route boxes for each day as appropriate – green = total shift exceeded, pink -= maximum no. of days exceeded, red links between routes = cumulative shift over days exceeded.



The Class Summary section

The Resources Used by Class Summary will provide a breakdown by resource class (rigid,unit,trailer) and drivers of the totals used by depot by day for the plan as well as totals. The Total number of trips made by each class is also shown along with the number of calls visited, deliveries made, and nights out. The Unit 1 maximum available and used are also given to show % Utilisation (which is a function of maximum capacity of the class) and may be greater than 100% if resources are double-shifted, that is used by more than one driver in a day. (Example shows Unit 1 utilisation only.)

Output Summary | Route Summary | Vehicle Bar Charts | Trailer Bar Charts | Driver Bar Charts | **Class Summary** | Cost Report | Production Takeup

Resources Used by Class for Depot NE - Week No 1

		Sun	Mon	Tue	Wed	Thu	Fri	Sat	: TOTAL	Trips	Stops	NC	Nights	U1-Max	U1-Used	%	ST-Max	ST-Used	%	Miles	TravT
Rigids :	RIGD	0	0	1	0	0	1	0	: 2	2	23	23	0	1600	1462	91.4	1320	477	36.1	108	278
	7.5T	0	3	3	3	2	2	0	: 13	17	40	40	0	11050	2548	23.1	8580	3065	35.7	1435	2607
	TOTALS	0	3	4	3	2	3	0	: 15	19	63	63	0	12650	4010	31.7	9900	3542	35.8	1543	2885
Tractors :	UNIT	0	5	5	5	5	5	0	: 25	34	532	532	0				16500	12537	76.0	3671	8166
Trailers :	40FT	0	6	7	7	7	7	0	: 34	34	532	532	0	34000	33296	97.9	22440	12537	55.9	3671	8166
Drivers :	Cat 9	0	5	5	5	5	5	0	: 25	53	595	595	0	46650	37306	80.0	16500	16079	97.4	5215	11051
Drivers :	Group 1	0	3	3	3	3	3	0	: 15	30	297	297	0	25250	18180	72.0	9900	9864	99.6	3548	7180
	Group 2	0	2	2	2	2	2	0	: 10	23	298	298	0	21400	19126	89.4	6600	6215	94.2	1666	3871
	TOTALS	0	5	5	5	5	5	0	: 25	53	595	595	0	46650	37306	80.0	16500	16079	97.4	5215	11051

The Cost Report section

Output Summary | Route Summary | Vehicle Bar Charts | Trailer Bar Charts | Driver Bar Charts | Class Summary | **Cost Report** | Production Takeup

Detailed Cost Report (Non-Zero Costs Only) for Depot LUTTERWORT - Week No 1

			Sun	Mon	Tue	Wed	Thu	Fri	Sat	: TOTAL
Rigids :	7.5T0006		0	730	75	416	346	335	0	: 1902
	7.5T0007		0	342	374	353	367	410	75	: 1921
	7.5T0008		0	339	342	336	368	307	0	: 1692
	7.5T0009		0	376	369	372	0	264	0	: 1381
	7.5T0010		0	0	0	148	0	0	0	: 148
	TOTALS		0	1787	1160	1625	1081	1316	75	: 7044
Tractors :	UNIT0001		0	474	90	0	0	0	0	: 564
Trailers :	40FT0001		0	85	20	0	0	0	0	: 105
Crew :	LUT-DAYS001	(81)	0	100	0	100	0	100	0	: 300
	LUT-DAYS002	(82)	0	300	0	50	50	50	0	: 450
	LUT-DAYS003	(83)	0	50	50	50	50	50	0	: 250
	LUT-DAYS004	(84)	0	50	50	50	50	50	0	: 250
	LUT-DAYS005	(85)	0	50	50	50	0	0	0	: 150
	TOTALS		0	550	150	300	150	250	0	: 1400
Drops :			0	1754	972	1157	889	997	0	: 5769
	GRAND TOTALS		0	4650	2392	3082	2120	2563	75	: 14882

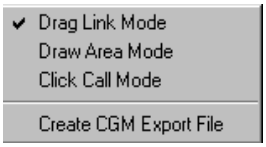
Detailed costs are displayed for each depot for resources in use only. Those vehicles or trailers that have not been used at all during the planning period will not appear. Zeros are shown for resources not used on those particular days. each class is sub-totalled and overall grand totals are given for each depot.

Profit & Cost Information for Routes

The cost of each route and carrier list is displayed on the Route Summary Panel as part of the overall total lines. In the Output and Summary panels whilst routing, calculated values for Margin, Cost and Net are updated when changes are made. In the Route Summary section (when using Style, Route Summary Headings options), for each route values for Route Cost (sum of all vehicle & driver details), Marginal Cost (total of all orders' margin values) and Carrier Cost (total of all orders' carrier costs) can be displayed. A Net Value figure can also be displayed which will provide the difference between the Margin and Cost, and thus provide an indication of the route's profitability. Route lines are highlighted with a green background if the route costs are larger than the Margin figures – that is the route is making a loss. In addition for all vehicle routes, the Carrier Cost figure in brackets will represent the total carrier cost for all orders on this route if they were sent via their "best carrier", thus giving an indication if these deliveries may be achieved at a lower cost than the vehicle route (also shows as a purple line in summary panel). In the overall Output report, values are given for Total Cost, Total Margin & Total Net : being the sum of all the individual route and carrier list totals. As another useful feature, cost change figures are displayed at the right on the bottom line of the program window. As routes are changed the field will display the amount by which the cost has increased or decreased by that action. If an additional £13 of cost has been added by the movement of a drop on a route – *Extra Cost = 13* or alternatively if an action (such as optimise or a vehicle change) results in lower costs, the figure shows *- Less Cost = -57*

Working with the Graphics Area for Routing

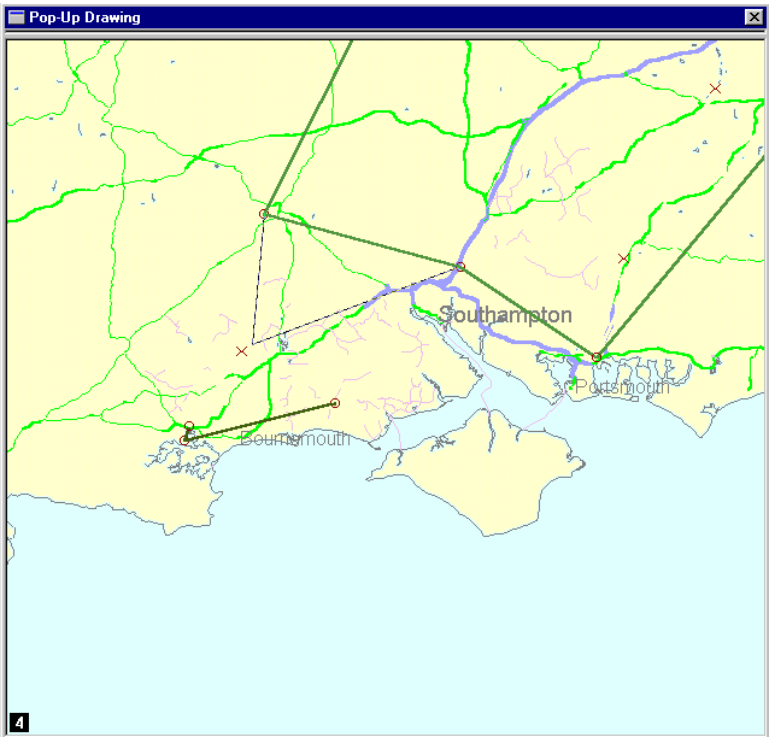
The default function in a graphics window is Drag Link Mode - in this mode route links may be pulled onto other calls as a way of manipulating them. There are, however two other modes to employ to compile lists of calls to be dragged onto routes using the text mode. To set the different modes, click with the RHB over a graphics window to display the pop-up menu. From the list of options select the required function using the LHB to tick it.



Working with the Graphics Area to modify routes in Drag Link Mode

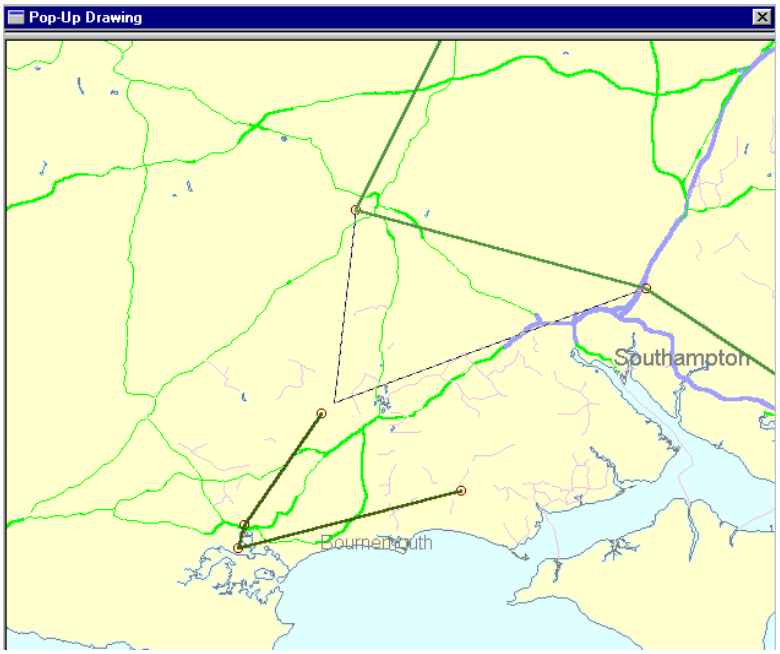
Adding Unrouted Calls or Orders

Unrouted calls or orders will be displayed on the graphics as crosses - **X.** To add an unrouted item to a route click and hold down the RHB to drag a link on an existing route onto a X and release the button. A white dotted line will be shown to represent the position of the link as it moves within the graphics window. The link from the depot to the first and last calls on a route is not permanently displayed but can be seen as a grey line when the cursor is near a route. If the cross is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call or choose the All option to add all those shown. At the same time in the appropriate text panel a red bar will appear in the route to indicate the position between existing calls or depots.



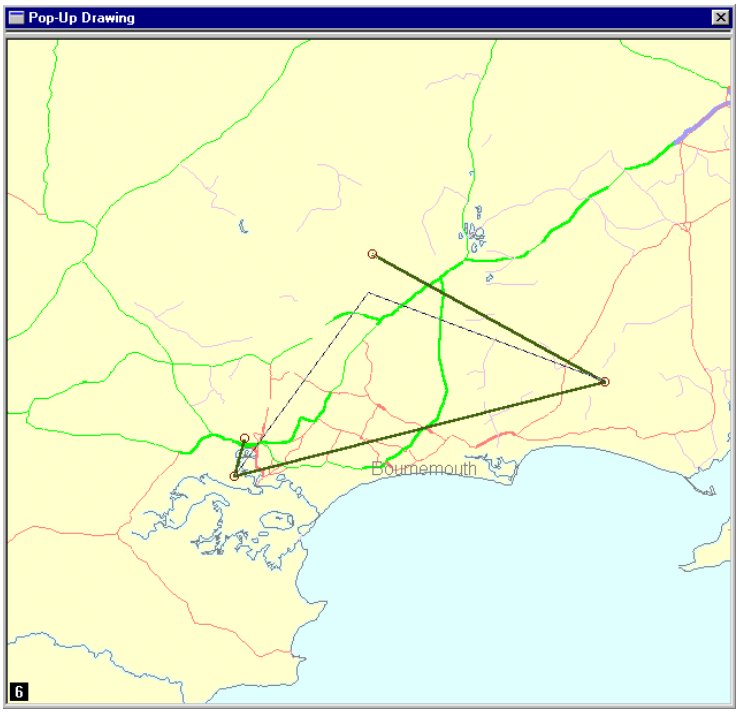
Transfer a Call or Order from one Route to another

To transfer an item onto a route click and hold down the RHB to drag the required link of an existing route onto the call or order and release the button. If the circle is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call or choose the All to add all those indicated. At the same time in the appropriate text panel a red bar will appear in the route to indicate the position between existing calls or depots.



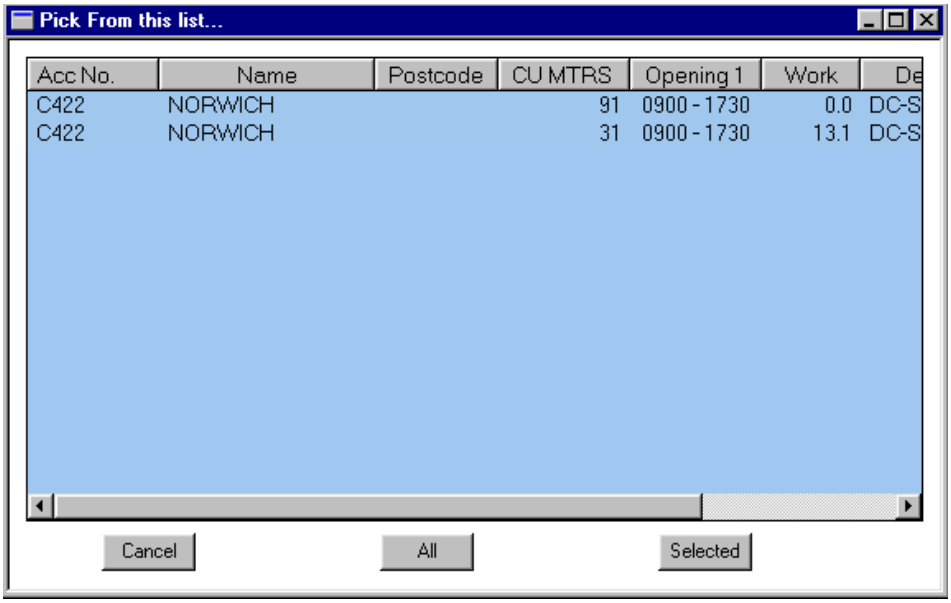
Move calls or Orders within a Route

To move a call or order to a different position in the same route, click and hold down the RHB drag the required link onto the call or order and release the button. If the circle is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call or choose the All to add all those indicated. At the same time in the appropriate text panel a red bar will appear in the route to indicate the position between existing calls or depots.



Multiple transfers or moves from the same location

In any of the graphics screen features if the required link is release onto a location circle which is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call (either by holding down the LHB and dragging over the required objects or using CTRL key). Alternatively select the All button to add all those indicated.



Inset Zoom Windows

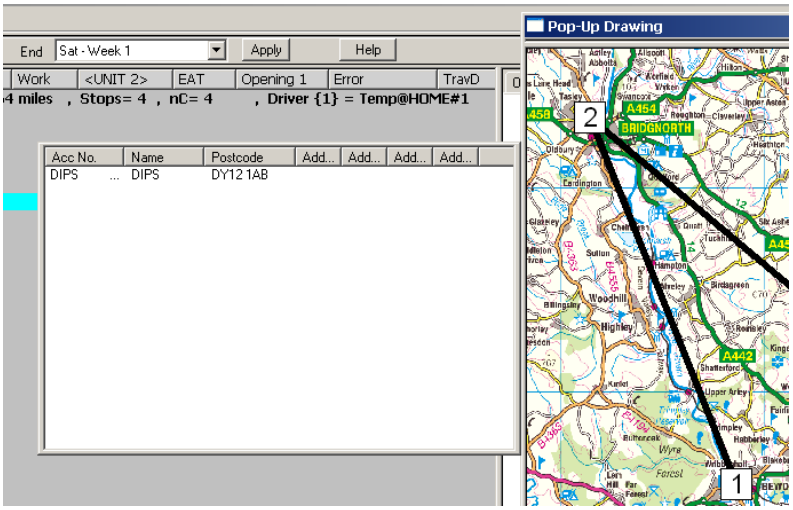
Inset Windows may be created on any graphics screen to allow greater detail for any particular area. To create an Inset Zoom Window, point to the top left hand corner of the desired box area, click and hold down the left hand mouse button, and drag the display marker until it covers the required area. When the mouse button is released a new graphics window will appear showing the required area at a greater scale. All graphics functionality within the window is as normal; that is the menu options such as Picture can be fully utilised in any graphics window open.

To zoom in further simply repeat the process to display another window. Multiple windows may be open at any one time, and will be maintained in a tiled fashion. To close any individual window choose the system Close function. All current open windows will automatically be closed when the program is finished.

Create Pictures using Bitmap or CGM Export File

To save an image simply click the Right Hand mouse button on any graphics window and select either **Create CGM export** or **Create a Bitmap** file from the menu. Save the image to the required filename and location using the normal dialog.

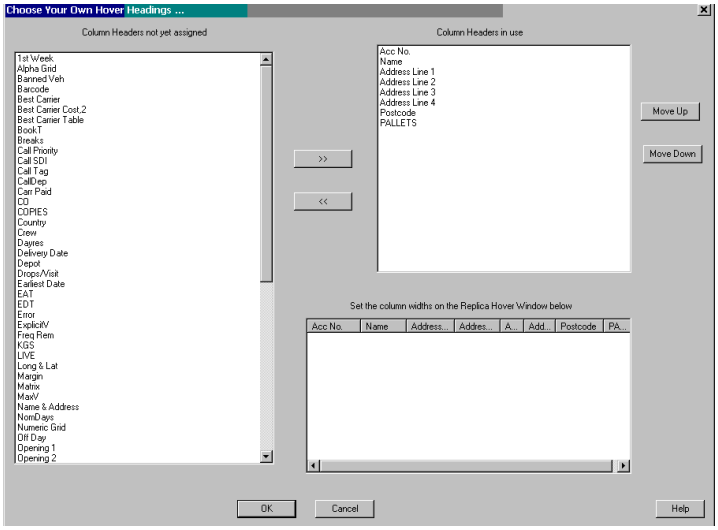
Displaying Information about Calls



In any graphics window if the mouse is moved over the top of a call (either deferred X or on a route) a pop-up information box will appear after a short delay providing basic information on the call. At this time click with the RHB to display a pop-up menu. From the list of options select Remove Call(s) from Routes. This will delete **all the calls from all the routes** displayed in the pop-up information box or Call details to view Information.

Customising Headings for the Hover Box

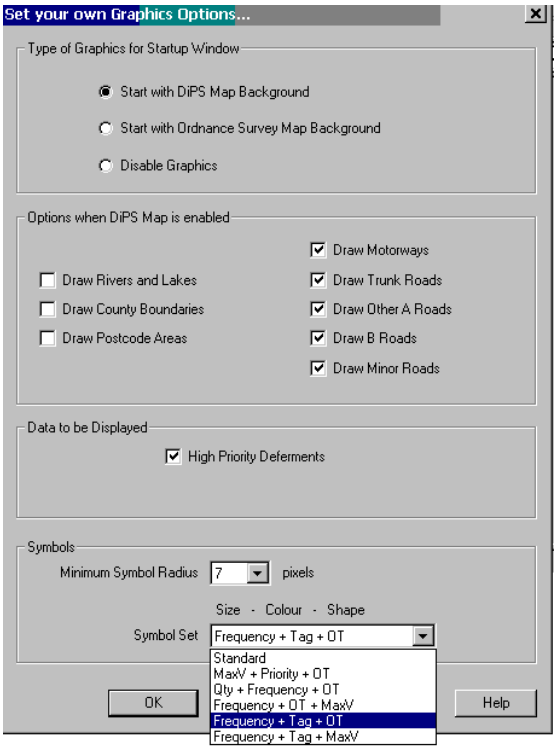
The Hover Box that appears when the mouse is over a call on the graphics display can be customised by using the Style, Hover headings menu option. A dialog box will appear (as shown),



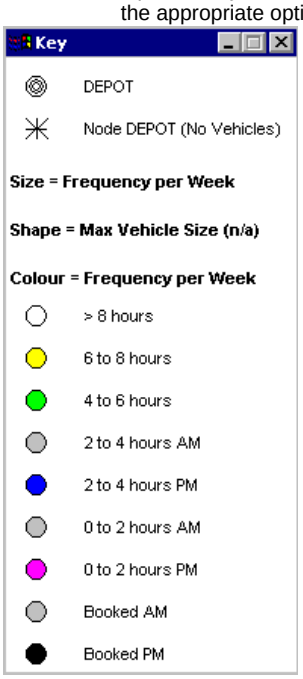
The available column headings are displayed in the left hand selection box and include options such as account no., order no., address, times, quantities, and access restrictions. The headings currently in use are displayed in the right hand box in the order the will appear from left to right in the box. (i.e. the top heading will appear on the far left). To select a heading and add it to the bottom of the current list, click on the heading with the LHB and then click the >> button. Multiple selections may be made by clicking on a number of headings. These will be added to the list in the order selected. The sequence of headings in the right hand box may also be changed by clicking on a heading with the LHB to select it and then clicking Move Up/Down to a new position in the list. Conversely to remove an item select a heading in the box with the LHB and then click the << button to put it back into the available list. Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous order.

The column widths for the box can also be set by dragging them with the LHB in the sample Replica Hover window at the bottom of the dialog. The hover box will then appear as shown when activated on any graphics panel..

Set Graphics Options from the Style menu



This option is used to display the Graphics Panel options. Select the option by clicking the LHB on the mouse to activate it.
Options may be changed at any time and apply to the Style in use. Select the appropriate options by clicking the LHB in the tick box. If the Disable Graphics option is set the Graphics panel is then removed and the summary view panel is extended to fill the available space.
Click OK to accept settings or Cancel to cancel the dialog.



The Symbol set options may be employed to change the appearance of calls on the graphic. Select an option from the drop-down box and modify the size of the symbols using the pixel radius if required.
The Standard set will display the original setting of circles and crosses, whilst the other options will display calls dependent upon the criteria displayed. For example, the Freq+OT+MaxV displays a different size related to frequency of delivery, shapes related to the call maximum vehicle size parameter, and colours related to opening times. To display a key to the symbols click the RHB to display the graphics menu option and select Symbols Key option to display the floating information panel.

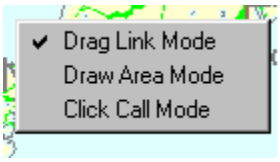
In the Style, Graphics Options dialog there is also a Symbol set parameter (Freq+Tag+OT) that will allow calls to be displayed by a colour attributed to a call

tag field. The size of the symbol is defined by the Frequency per week, the shape by the Opening Time, and the colour by the Tag Field table. This table is found in the System Attribute menu and may be modified using New, Edit and Delete buttons to display a simple dialog enabling the 4 character field to be input and a colour chosen.

For other actions such as **Deleting a Call or Order from a Route, Changing a Vehicle, Driver or Trailer , and Adding a new Trip to a Route** use the text panel or summary view modes.

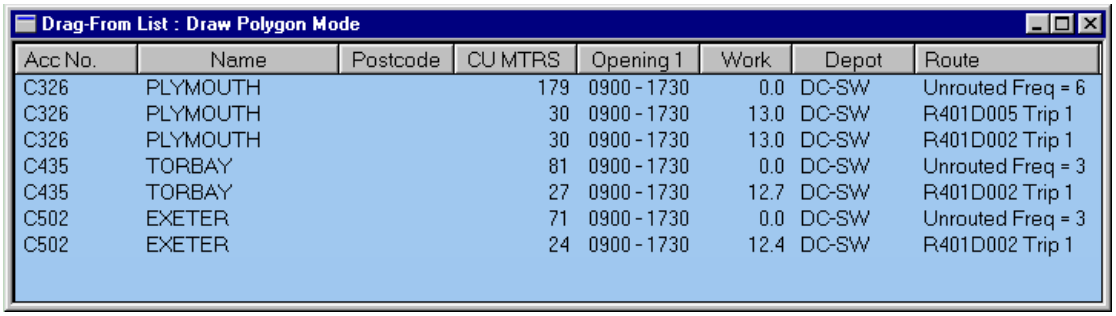
Working with the Lists in Draw Area or Click Call Mode

Click with the RHB on a graphics window to display the pop-up menu. From the list of options select either Draw Area Mode or Click Call Mode using the LHB.



Working with Lists in Draw Area Mode

Draw Area Mode allows the mouse to be used to draw freehand a line around a group of calls, which are then added to a list-box for dragging onto other routes in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Draw Area Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.



Acc No.	Name	Postcode	CU MTRS	Opening 1	Work	Depot	Route
C326	PLYMOUTH		179	0900 - 1730	0.0	DC-SW	Unrouted Freq = 6
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D005 Trip 1
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D002 Trip 1
C435	TORBAY		81	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C435	TORBAY		27	0900 - 1730	12.7	DC-SW	R401D002 Trip 1
C502	EXETER		71	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C502	EXETER		24	0900 - 1730	12.4	DC-SW	R401D002 Trip 1

On the graphics screen, then **click and hold down the LHB** and begin to draw the line as required. Once the LHB is released any calls within that area will be added into the list-box (including those on already routes). Click with the LHB on the necessary call or calls in this list to select them and drag the highlighted calls into position in the required route text panel using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

A new setting on the System Attributes menu ***Draw Area Mode only List Un-routed Orders*** is now available which can be toggled ON/OFF depending individual requirements. If ticked using Draw Area Mode or Click Call Mode when routing with Orders will only put the un-routed Orders into the blue box. When initially running the program it is always set OFF so you see all the Orders – routed or not.

The blue display box used by Draw Area Mode to list the Calls / Orders in the user defined area now has a Summary field on the top line to show a total sum for all of the primary vehicle units of the calls.This option is available for modes such as Warefrom and Egotrip Routing and should therefore provide a useful guide when moving drops into a route or allocating them to a depot.

Working with Lists in Click Call Mode

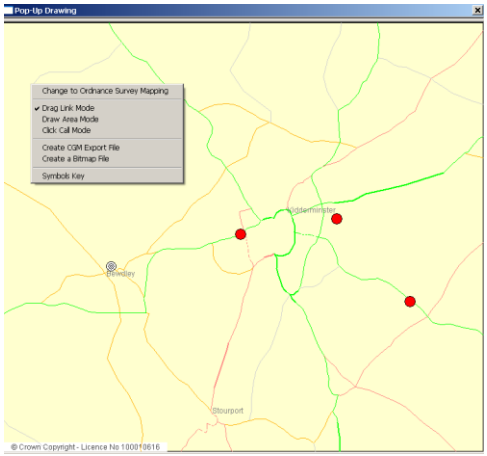
Click Call Mode allows the mouse to be used to click on groups of calls, which are then added to a list-box for dragging onto other routes in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Click Call Mode using the LHB. A pop-up list-box will then appear (as above) showing a maximum of 1000 items.

On the graphics screen, then **click the LHB** on the required calls, which are added into the list-box (including those on already routes). Click with the LHB on the necessary call or calls in this list to select them and drag the highlighted calls into position in the required route text panel using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

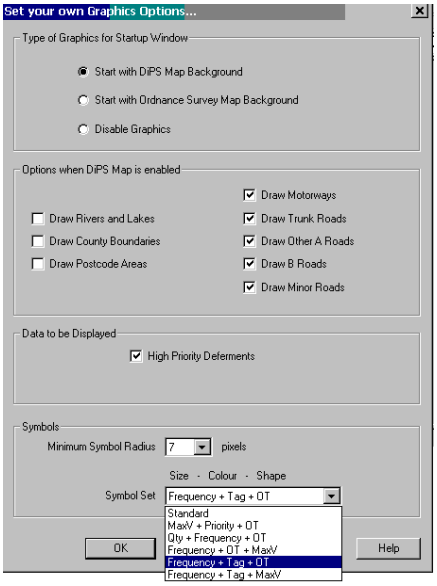
Ordnance Survey Mapping within DiPS

There are three levels of Ordnance Survey mapping available as part of the standard package. Maps can be displayed at scales from 1:50,000, to 1:250,000 and 1:2,000,000. In addition to these new standard features DiPS can optionally use detailed Street Level mapping (1:10,000 scale) showing roads and buildings. The map scale is displayed in the title bar of the visible graphic window.

The maps can be used to locate calls interactively, and then as a background display throughout the planning process.
The use of Ordnance Survey mapping may be set as a default using the Style, Set Graphics Options menu.



Alternatively individual graphics windows may be changed using the menu activated by clicking the RHB on the mouse and toggling the *Change to*…… option..



Set Graphics Options from the Style menu

This option is used to display the Graphics Panel options. Select the option by clicking the LHB on the mouse to activate it. Use the Start with Ordnance Survey Map background option to set every window to employ that style of mapping. 'DiPS Map' uses the traditional road/ town name background.

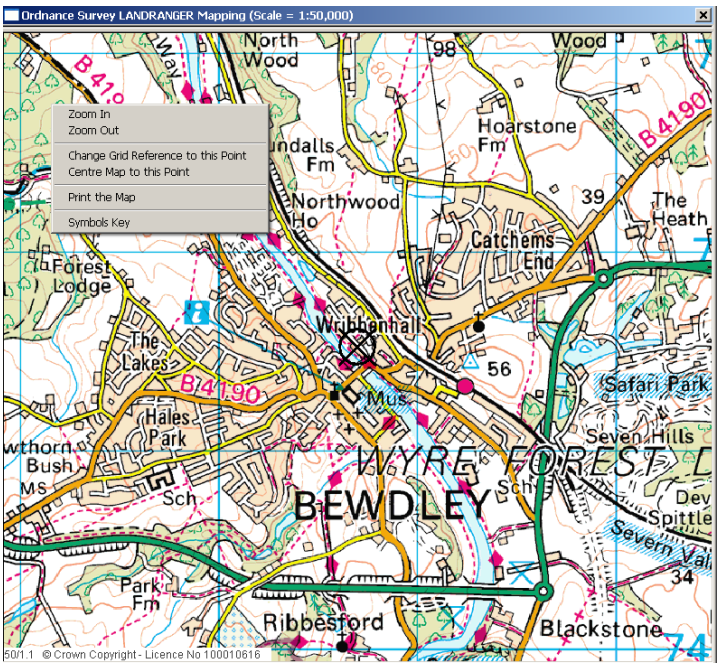
Options may be changed at any time and apply to the Style in use. Select the appropriate options by clicking the LHB in the tick box.

Click OK to accept settings or Cancel to cancel the dialog.

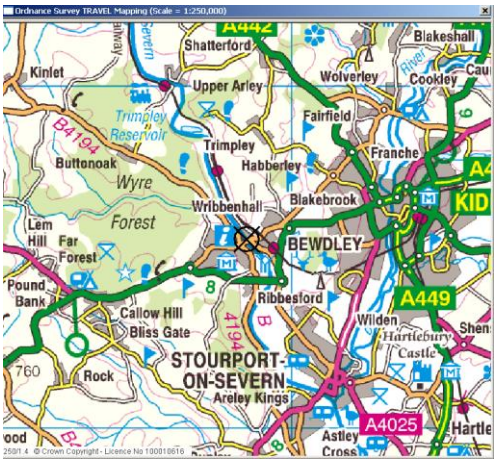
Working with the Maps

To zoom in or out of maps (i.e. to change map scales), click the RHB on the mouse, and from the menu that appears, click on either Zoom In or Zoom Out. This will move the map images between higher and lower scales. An alternative is to use the mouse-wheel over the map window and to scroll either up or down for in our out (scales will change accordingly). This will not change the centre of the map at all: to do this click with the RHB on the required centre point of the map, and select the *Centre map to this point* menu option to re-draw. It is also possible to move around maps using the arrow keys: left, right, up or down). To print the map, click on the menu option provided and then select the Printer. Use the minimise or maximise window buttons as normal to control the window display. Close any Map Window using the cross at the top right of the title bar.

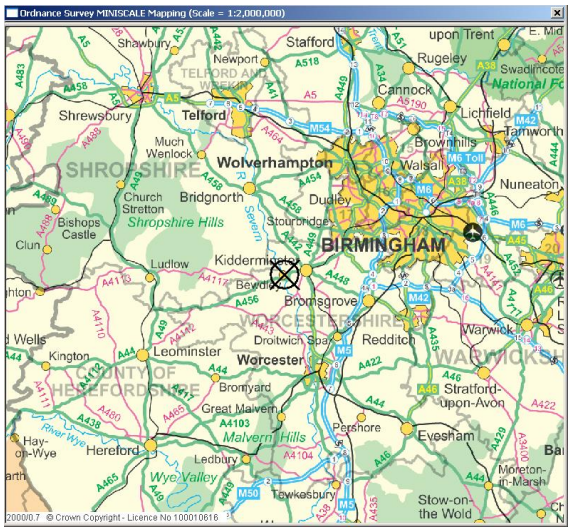
Example of a 1:50,000 scale map



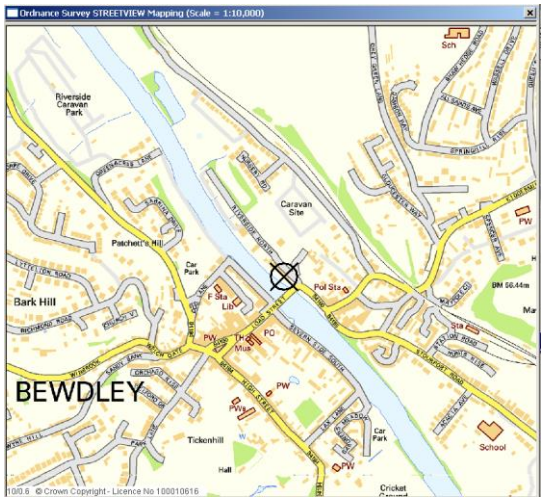
Example of a 1:250,000 scale map



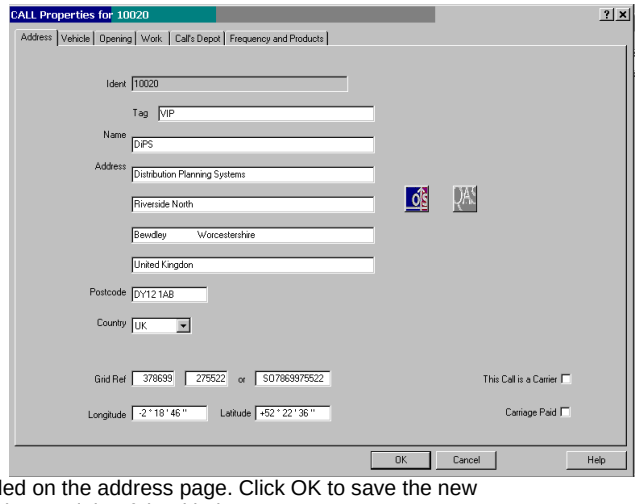
Example of a 1:2,000,000 scale map



Example of a Street View map (1:10,000 scale)



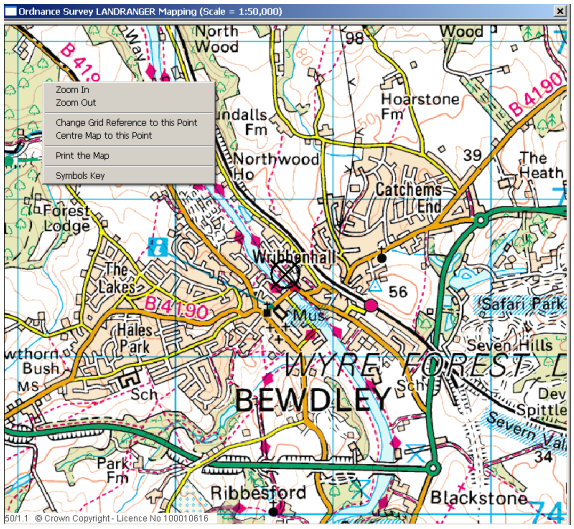
Using OS Maps to locate Depots, Calls or Orders



The purpose of a grid reference within DiPS is to locate the entity in relation to the road network database. It is important to note that only entities with valid grid references will be used in the planning processes.

To use the interactive map process to refine a location, simply click the OS button on any address page once an initial grid reference has been input. Use either postcode, gazetteer or input values for grid reference or latitude/longitude to produce an initial starting point for the map display. Please note that the map cannot be activated for zero values.

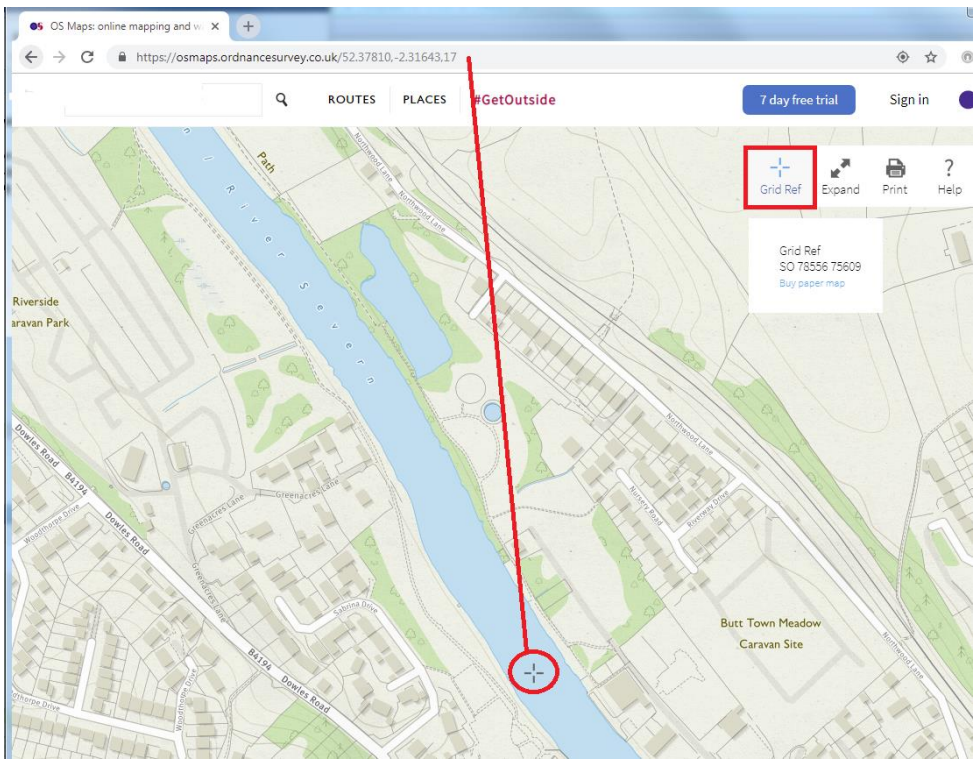
Once the map is visible, it will display the location marked with a crossed-circle. Zoom In or Out as required to identify the area. If you need to move the location at all, simply point at the new spot with the mouse and click the RHB. From the menu that appears, select Change Grid Reference to this Point. The location will be amended on the address page. Click OK to save the new location or Cancel to abort. Close the Map Window using the cross at the top right of the title bar.
You can also print a map of the location of required using the menu option provided.



OS Web Map embedded into OS button on Address pages

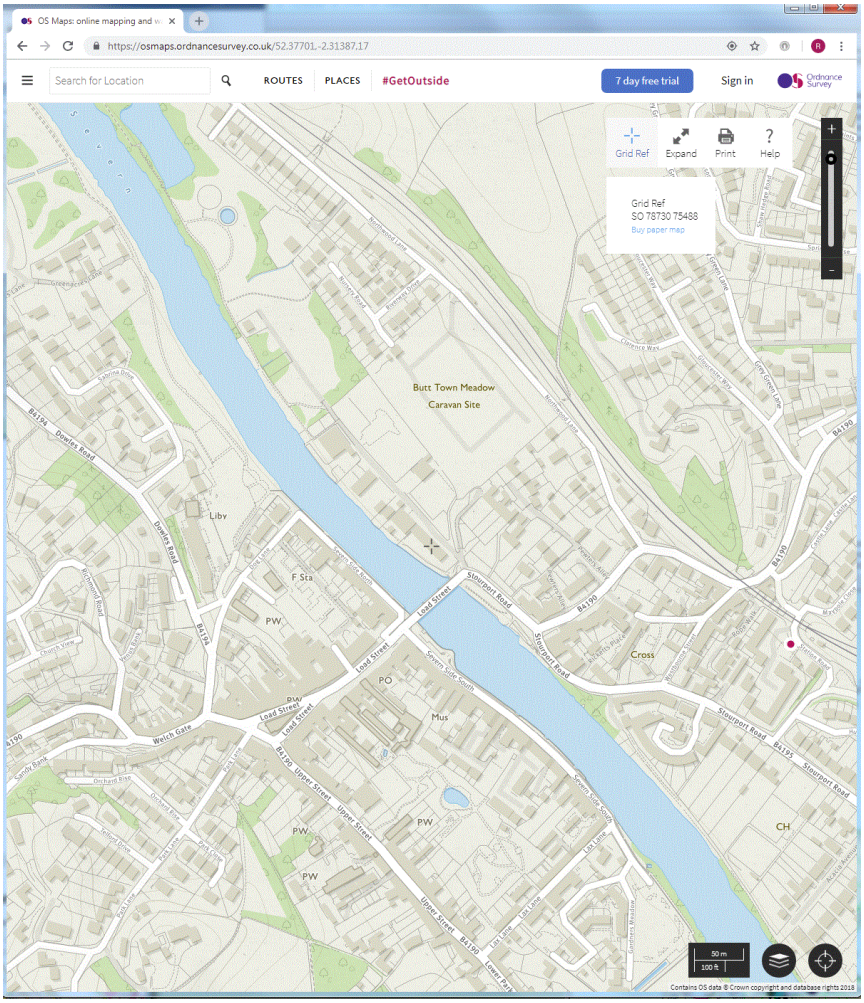
As well as the usual OS interactive Map display window accessed by clicking the OS button on any address page (for valid grid references) new Ordnance Survey features now enable a Web Browser to launch and display detailed scalable maps for the location in question for another view of the Call, Depot or Order.

An initial screen (like the example below) has the web address showing the initial Latitude & Longitude of the location.



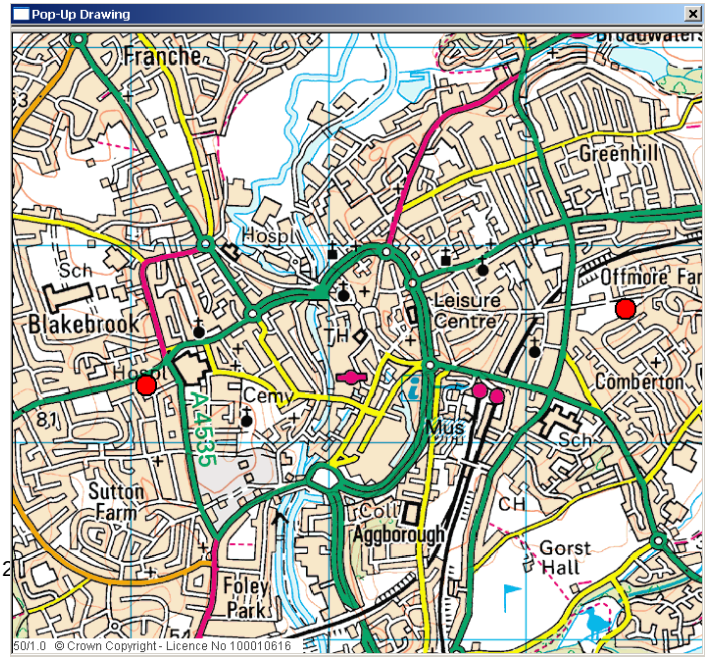
Clicking on the Grid Ref button on the web page will display a cross shaped location marker on the map, which will show the initial location used from the DiPS address.

If the map screen is moved the web address and Grid Ref value is also amended on screen and can be typed back into DiPS address location fields if necessary.



General Use of OS Maps within DiPS

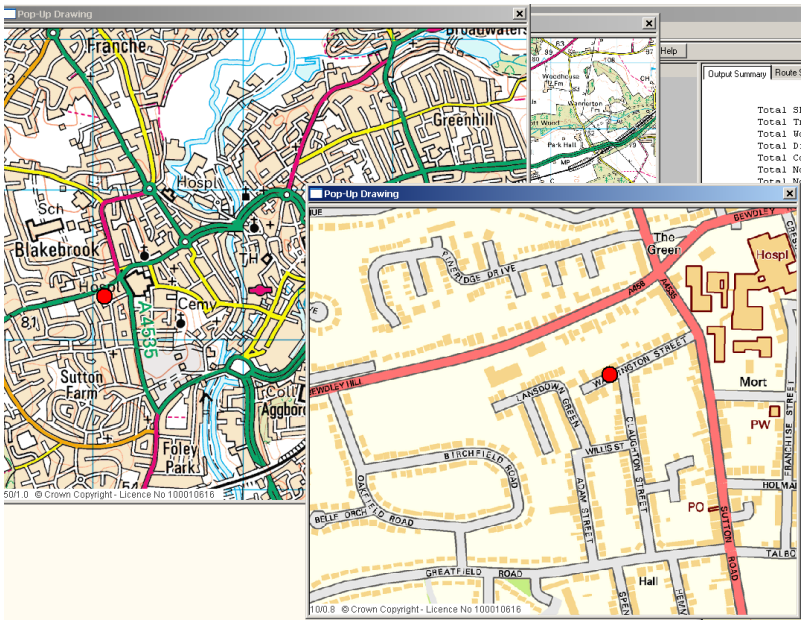
To use display an Ordnance Survey map background at any time in DiPS, set the use of Ordnance Survey mapping as a default using the Style, Set Graphics Options menu or alternatively individual graphics windows may be changed using the menu activated by clicking the RHB on the mouse and toggling the *Change to*…… option. This allows the display of any screen, whether in Kingpin, Travel, Warefrom or Routes mode with a map backdrop.



As an example, in Kingpin mode calls may be displayed for information purposes.

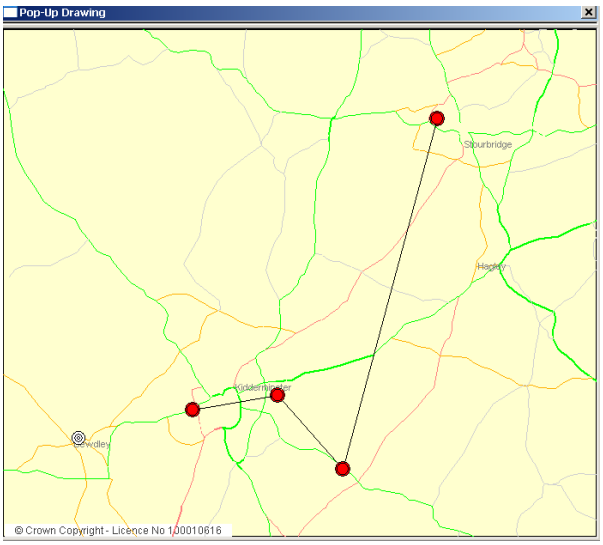
The drawing of zoomed graphics windows will also allow smaller areas to be displayed at a better scale. The example below shows the same 1:50,000 map in Kingpin

mode with a smaller, more detailed area at Street View level.



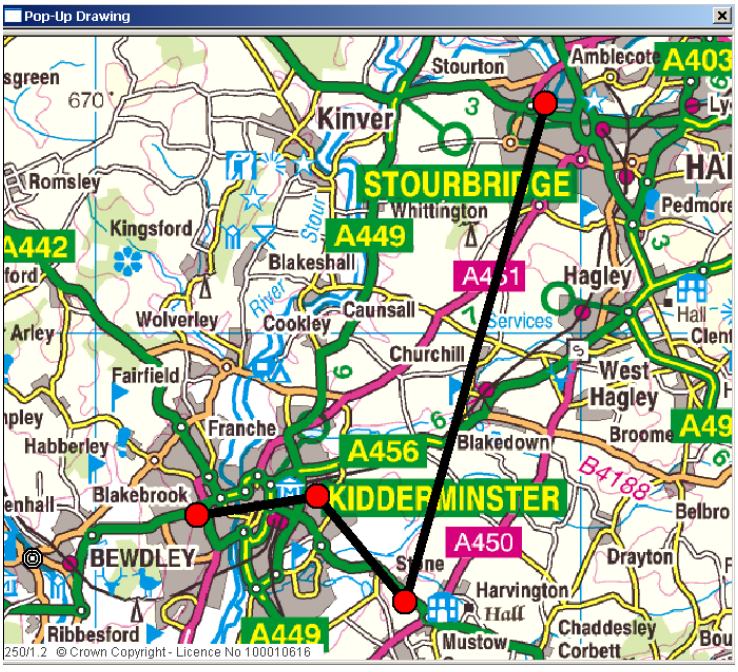
Using OS Maps with Routes

The use of OS background mapping when routes is especially revealing. Traditional graphic displays, although quick to refresh, can prove less descriptive than a more detailed map display.

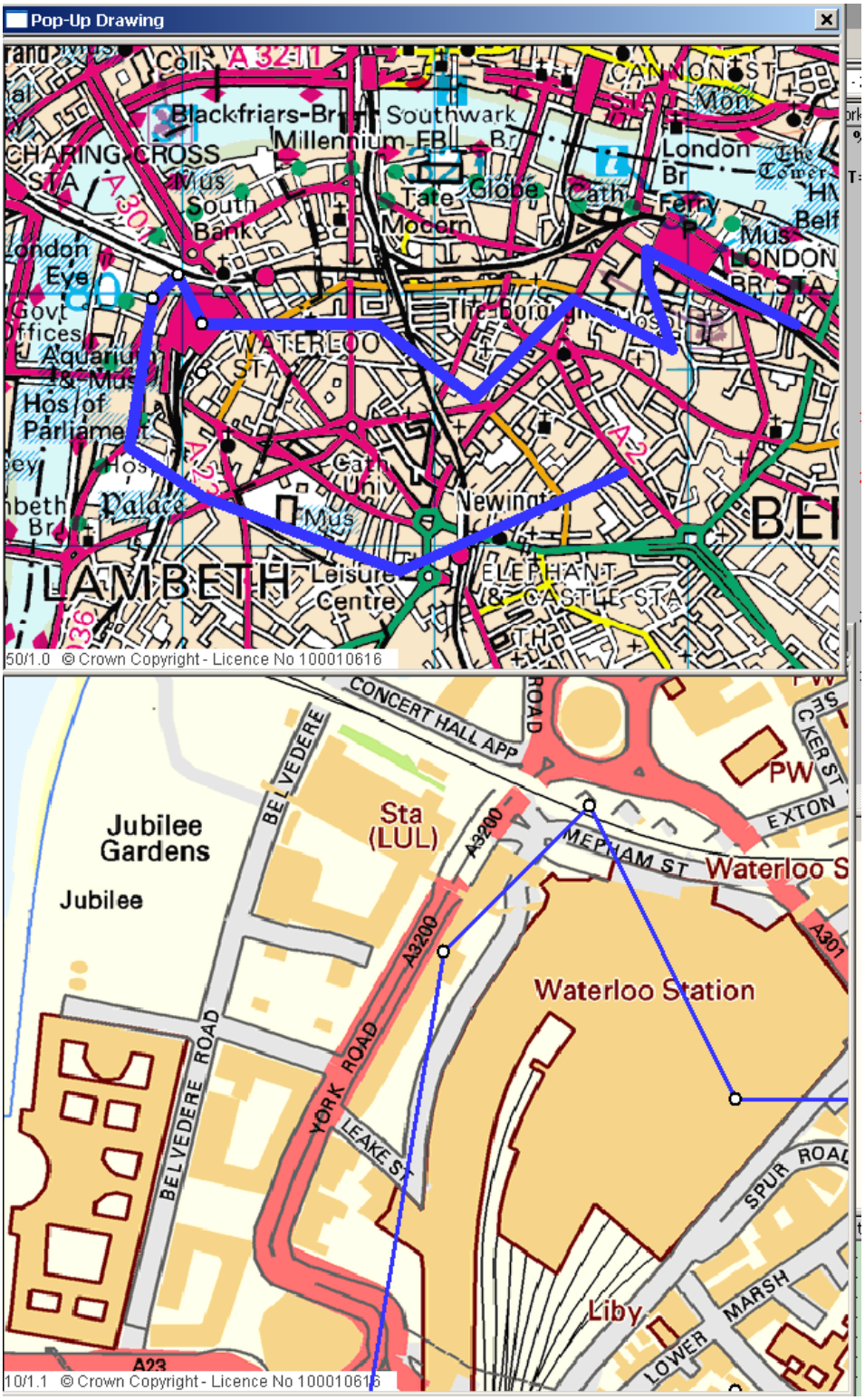


This example shows a single route in Worcestershire, initially using DiPS background and then below following the graphics windows being changed using the menu activated by clicking the RHB on the mouse and toggling the *Change to Ordnance Survey Mapping* option.

The *Pop-up Graphics Zoomed to this Route* option a Route menu can be used at any time to display and print a map for a single route, or part of that route.



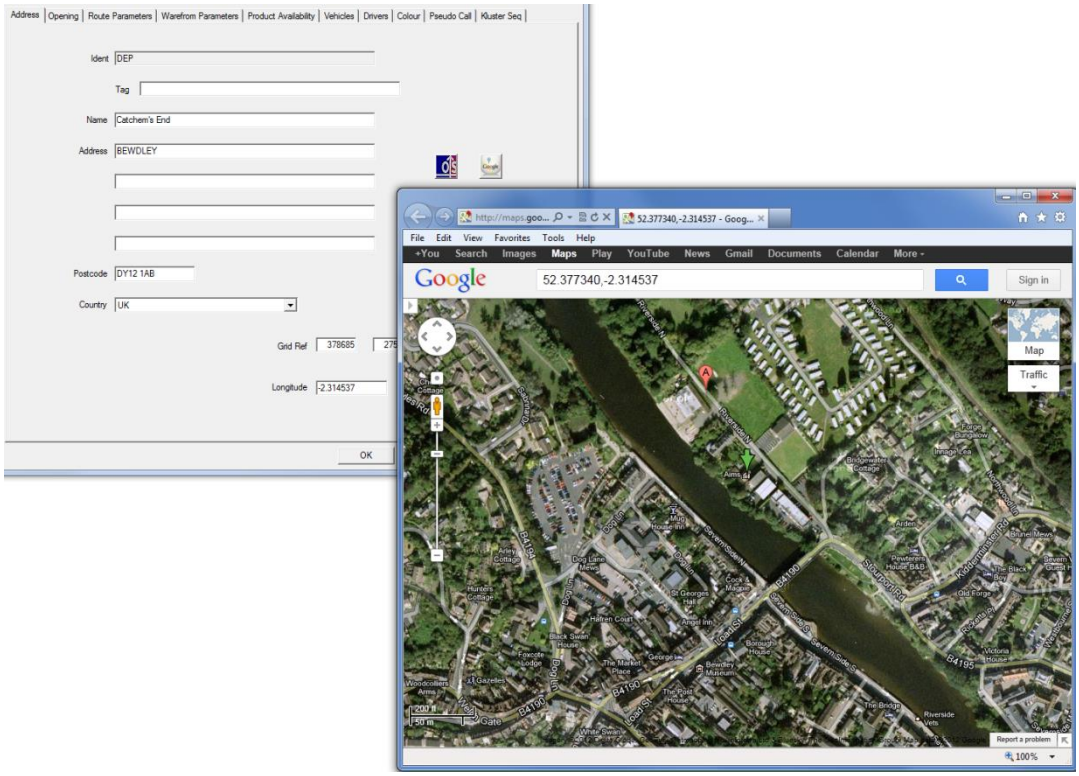
When displaying routes in Egotrip mode, the drawing of zoomed graphics windows will also allow smaller areas to be displayed at a better scale. The example below shows a 1:50,000 map for a route in central London with a smaller, more detailed area around Waterloo Station at Street View level for an extra level of accuracy.



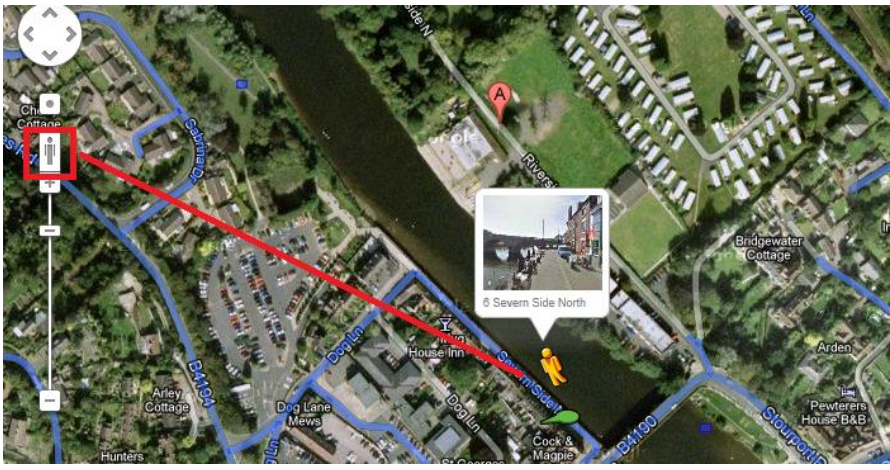
Google Map Information in DiPS

Google Map information can be displayed (with the appropriate Internet & Browser Access) from the Address pages of depots and calls, and from individual routes.

On the address dialogs alongside the OS Maps button there is now a Google Maps button that will use the computer's default web browser to display the website using the current Latitude & Longitude values to zoom to the point in question.



Using the Street View option will offer users visibility on the delivery point to verify details such as vehicle access restrictions and so forth. To use this feature drag the icon of the man onto the map and drop him on the required road highlighted in blue.



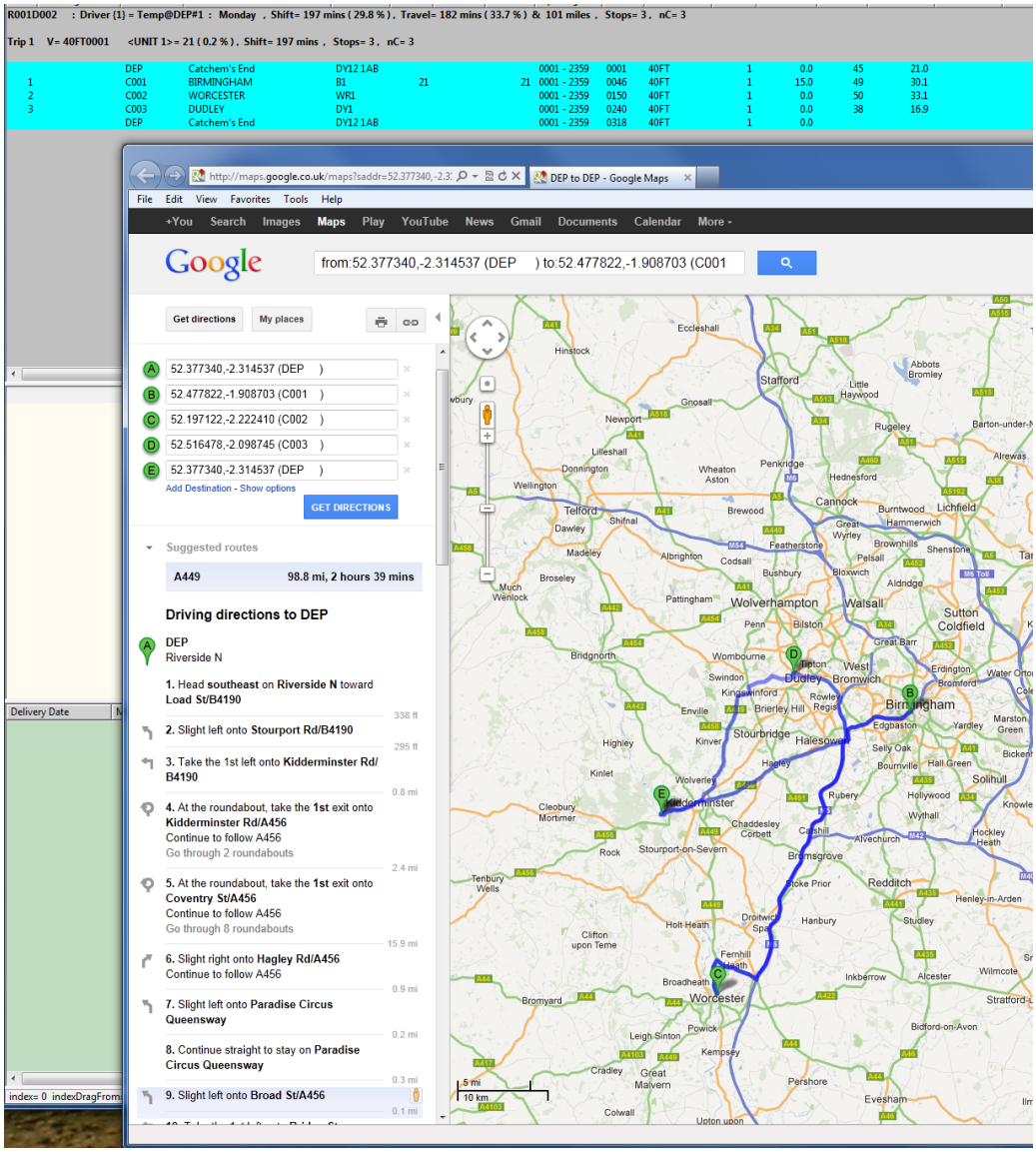
The relevant street picture will then be display.

To view Google Map Directions for a trip or route, display the route as normal in any text panel, right click on the route and from the menu choose the option – Google This Route..

The program will again use the computer's default web browser to display the site and using the current Latitude & Longitude for depots and drops will construct the appropriate "Get Directions" option.

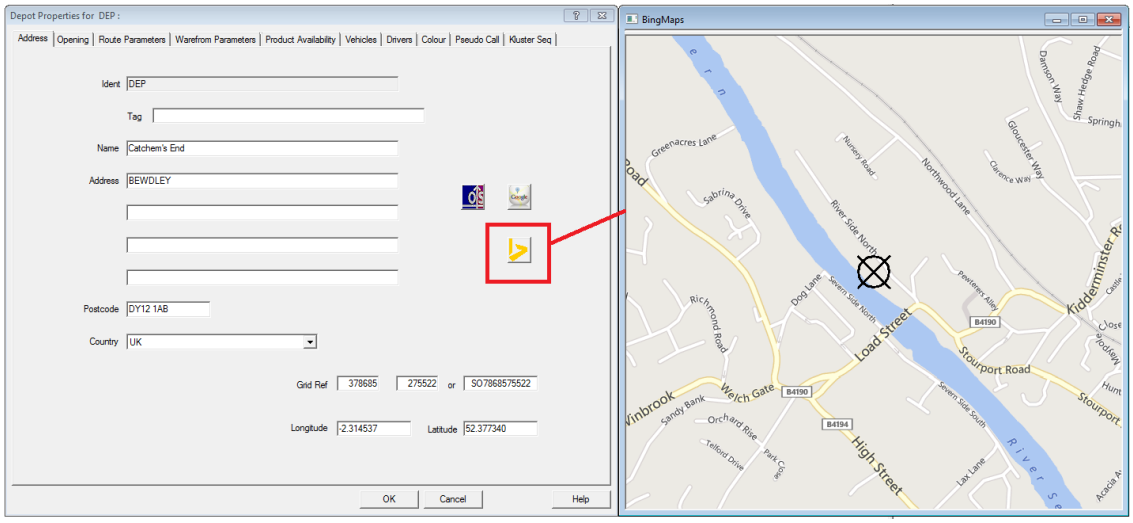
Please note that Directions, Travel Times, Distances and any other criteria are those set by Google and do NOT use the DiPS Road Speeds in any way.

The function is intended merely as an aid for a guide and visual display for the trip and should not be taken literally.



Using Bing Maps for Graphic Display or for Overseas Studies

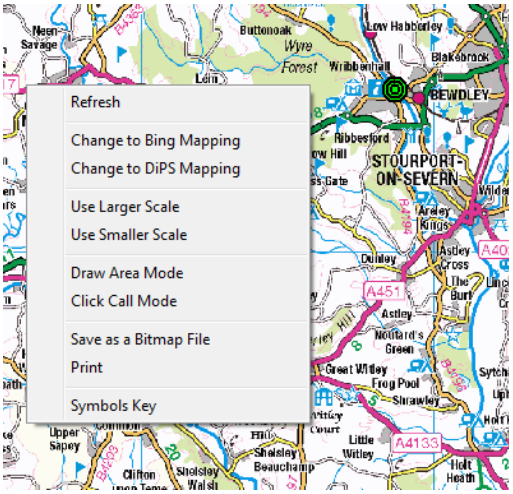
Microsoft Bing Maps information can be displayed (with the appropriate Internet & Browser Access) from the Address pages of depots and calls, and from individual routes. On the address dialogs alongside the OS Maps and Google button there is now a Bing Maps button that will use the computer's default web browser to display the website using the current Latitude & Longitude values to zoom to the point in question.
Zoom In or Out as required to look at different map levels using the mouse wheel and the required maps will be downloaded and stored temporarily in a cache in the DiPS folder for future use.

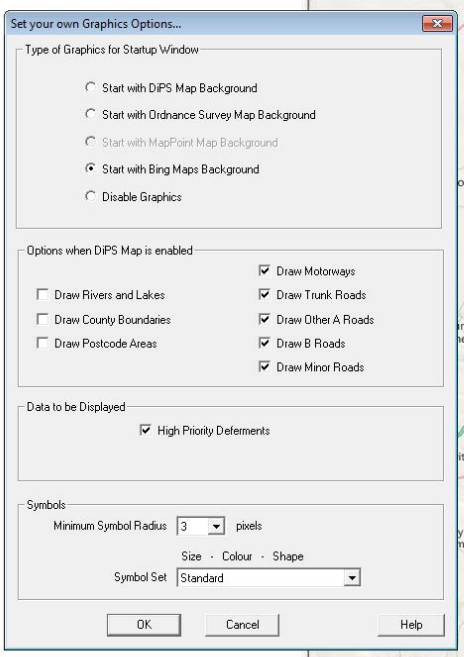


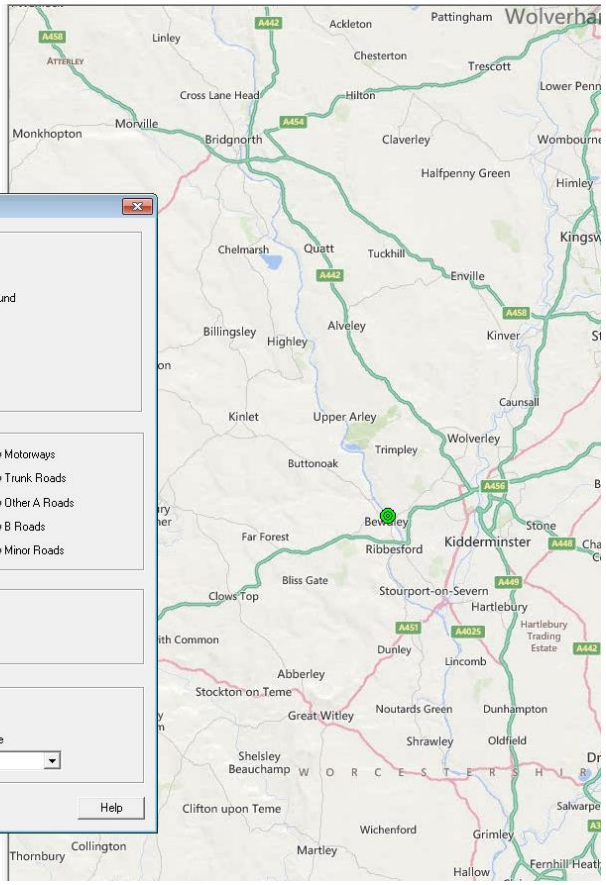
To use the interactive map process to refine a location, simply click the Bing Maps button on any address page once an initial grid reference has been input. Use either postcode, gazetteer or input values for grid reference or latitude/longitude to produce an initial starting point for the map display. Please note that the map cannot be activated for zero values.

Once the map is visible, it will display the location marked with a crossed-circle. If you need to move the location at all, simply point at the new spot with the mouse and click the RHB. From the menu that appears, select Change Grid Reference to this Point. The location will be amended on the address page. Click OK to save the new location or Cancel to abort. Close the Map Window using the cross at the top right of the title bar. You can also print a map of the location of required using the menu option provided.

The main graphics panels can also be set to use Bing Maps as a default : either by using the right hand mouse button on a graphics panel or using the Style, Set Graphics Options settings to *Start With Bing Maps Background*.







Using Bing Maps as the Data Source for DiPS

Online Microsoft Bing Maps can be used in DiPS as long as the with the appropriate Internet & Browser Access is available. All time and distance matrix calculations rely on web access.

For overseas studies, Bing Maps may be used as the primary data source for the study. All location lookup, map display and time/distance matrix calculations are done using interfaces to the program. The Data Source is set when the study is first created within the File, Study New Study menu option and cannot be altered after this point. There are no basic changes to the way that the DiPS program functions whilst using MapPoint. Postcode and address lookups are done through an interface, whilst Matrix calculations between locations in the study are passed to the Bing Maps web-site for analysis. There are no basic changes to the way that the DiPS program functions whilst employing Bing Maps.

Adding the Bing Maps Key to the DiPS Setup

Use the File, Study Settings option followed by the Change Setup button to show the Profile dialog.
Input or Copy+Paste the required code into the Bing Maps key field and click Ok to save.

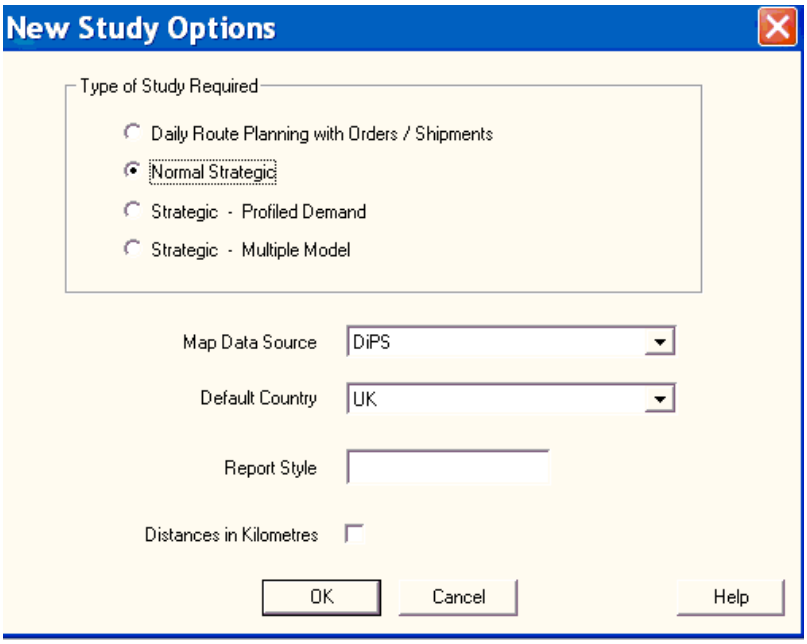
Creating a Brand New Study

The File, Study, New Study option is used to create a brand new MASS file in which all data is stored (Depots, Calls, Vehicles, Routes, and program parameters). This option will reset all data and parameters in a new MASS file and will delete any current setup and data.

When the New Study Options Dialog appears the Map Data Source can be changed along with the default country if required.

Map Data Source

This field can be used to select whether DiPS road databases are to be used or Bing Maps road networks.



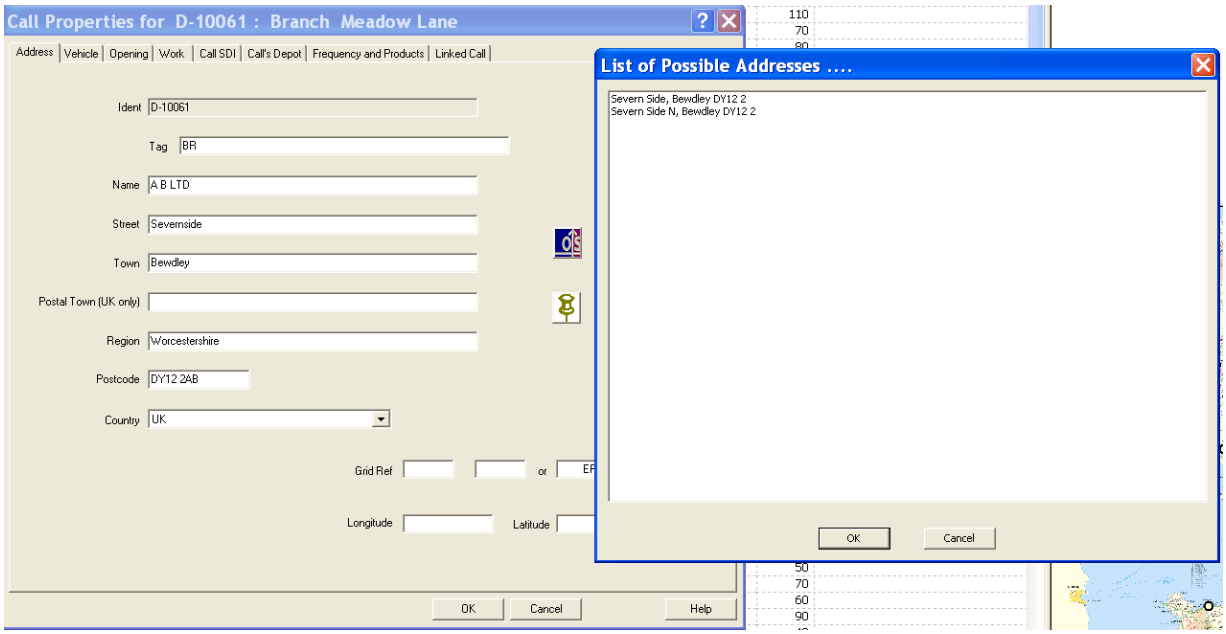
Using Bing Maps to locate Depots, Calls or Orders

To use the interactive map process, click the Bing Maps button on any address page once an initial latitude & longitude has been input. Use either postcode, gazetteer or input values for latitude/longitude to produce an initial starting point for the map display. Numerical values for longitude & latitude may be imported from spreadsheet using >A102 for longitude and >A103 for latitude.

Once the map is visible, it will display the location marked with a crossed-circle. Zoom In or Out as required to identify the area. If you need to move the location at all, simply point at the new spot with the mouse and click the RHB. From the menu that appears, select Change Grid Reference to this Point. The location will be amended on the address page. Click OK to save the new location or Cancel to abort. Close the Map Window using the cross at the top right of the title bar. You can also print a map of the location of required using the menu option provided.

Using Bing Maps for Address Lookup

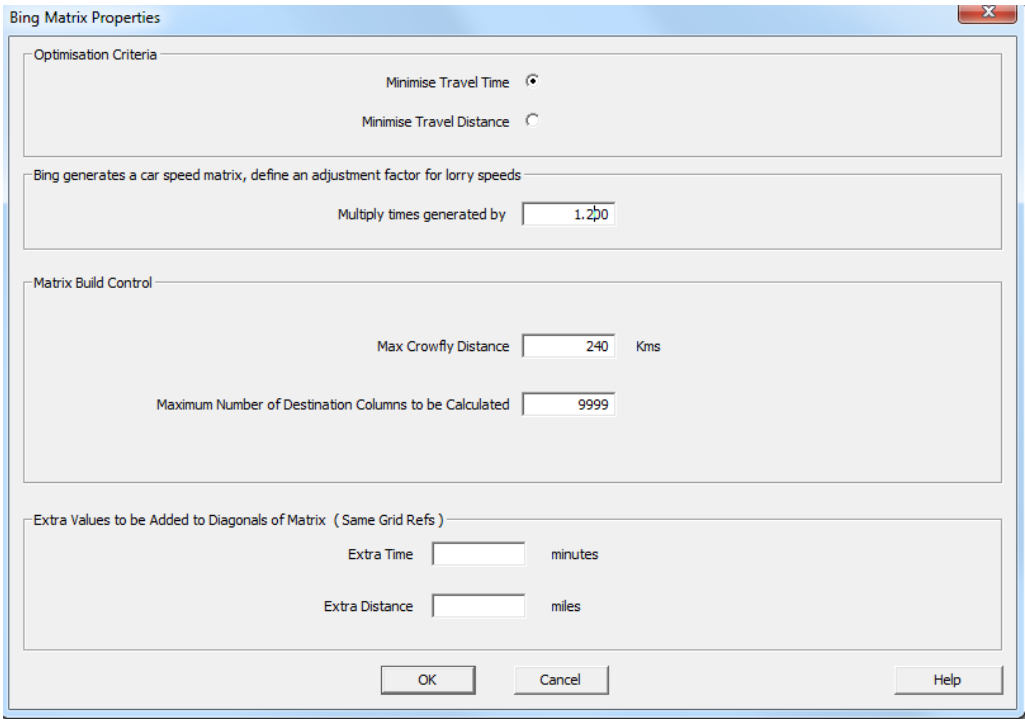
To use the Address Lookup feature on any address page that has **NO** latitude/longitude values, firstly input the Town and set the Country code on the address page (e.g. Paris and FR). Then click the Bing Maps button. A window will appear with any options that match the information present in the Street, Town, Postal Town (UK), Region and Postcode fields. Select the required option by clicking on the relevant line with the left hand mouse button. The latitude/longitude/grid references will be filled in automatically. You can then use the interactive map process detailed above if necessary to pinpoint the location.



Time & Distance Calculation with Bing Maps

If set as the Data Source, time & distance calculations done in the Travel, Run Matrix options are passed to the Bing Maps web-site.
Please be aware that this routine may be slower than the normal UK DiPS option as the process depends upon external factors such as bandwith or wireless speeds.

As Bing Maps calculations are done remotely normal DiPS road speed classifications are not used in this instance. Instead the Bing Maps properties dialog can be used to provide the required settings. Default values will normally suffice but the following options can be used.



Travel optimisation in the MATRIX generation is performed using either option to Minimise Travel Time producing the shortest time route from one location to another. The Minimise Travel Distance will give shortest distance routes.

Standard Bing Maps travel time calculations are done using car speeds, so the adjustment factor can be used as a multiplier to factor travel times used in DiPS for say HGV planning. The default factor is 1.200 so that a Bing Maps time of 100 minutes is multiplied by 1.2 to produce a DiPS value of 120 minutes for example.

The Matrix Build Control settings can be used to speed up Bing processes by only calculating the required values avoiding unnecessary processing time. The Max Crowfly Distance will prevent Bing calculating time and distance values between any calls that are further away as the crow flies than the set distance (default is 240kms). Depot values are always calculated.

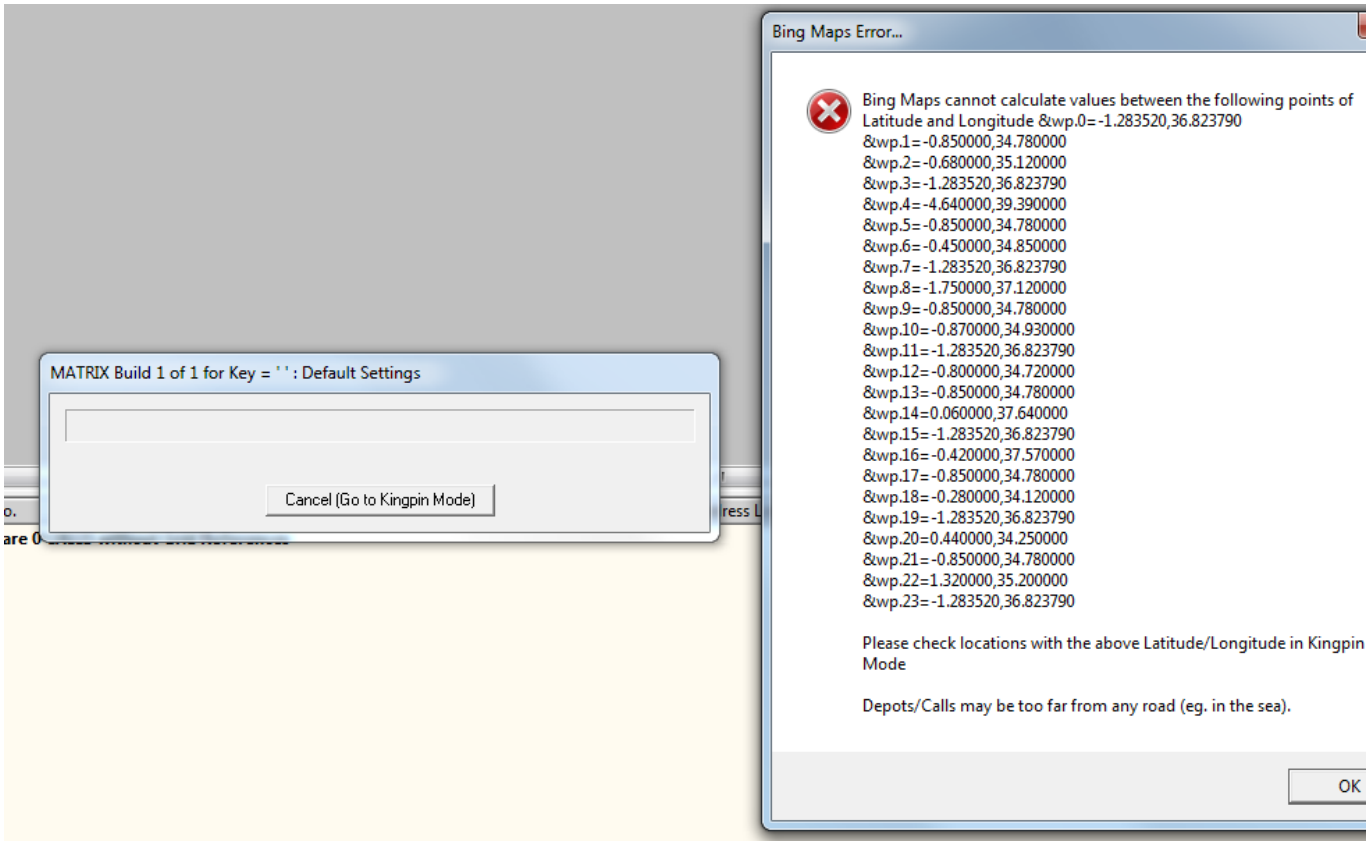
Matrix Required Number of Destinations parameter defines the amount of TTMATRIX stored by the system for the current model or study. The default value of 9999 means build a full matrix, that is calculate time and distance values for every unique grid reference to every other. Whilst this is acceptable for an average size study, of say 300 calls, in the case of 5,000 unique grid locations, to reduce the requirement, a lower value for the number of destinations would mean a much smaller file (saving disk space and program running time). The MATRIX program will always store full rows of values from every depot to every other grid reference in the window area, only the inter-call times are affected by the destinations limit. This means that the Print routines and Warefrom module will work without any call to call data. Therefore a fast matrix run for use with these programs can be achieved by setting the Required Number of Destinations field equal to ZERO before the matrix run. This type of matrix will not be of any use for the route planning programs as inter drop times would be required but can be used for the Warefrom or Anyware depot analysis.

The Extra Values to be Added to Diagonal Elements of the TTMATRIX parameters may be used in the MATRIX generation to add extra time and distance to locations with the same grid reference. This will prove useful if the basic data to be used is not as accurate as could be hoped. For example the data may give five drop points with the same basic address input with which to locate them of Birmingham and no postcode information, and the points may be scattered throughout the area. By adding extra time and distance between these drop points it becomes possible to make any route plans more realistic. These values will be added to any Junction Access time and distance calculated, and will appear on route output prints as normal inter-drop data. When using this facility values must be kept to reasonable levels to avoid problems that may occur in the routing process. If values are too high the algorithm will consider a detour to a neighbouring drop to be a better option than doing another on the same grid reference as the comparative detour time to the former is less.

Errors in the Matrix run

If the Travel, Run Matrix option cannot calculate Time & Distance value for any of the locations, a warning message will appear during the Matrix build phase.

The dialog will list the current latitude and longitude values that are being analyzed by the Bing Maps site.
Please check both Depots and Calls that have the listed Latitude & Longitude values for possible errors.
It is likely that one or more locations are too far from any road – possibly in the sea or a lake or an uninhabited area.



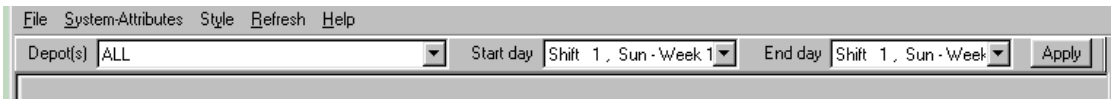
The matrix process passes multiple locations in “blocks” to Bing Maps for analysis reducing the amount of transactions required, making the process much quicker and potentially cheaper. Unfortunately as a by-product of this process we do not therefore know which particular location may be at fault.

Click OK at this point to continue with the matrix process if required or Cancel on the Matrix Build progress indicator first to abort.

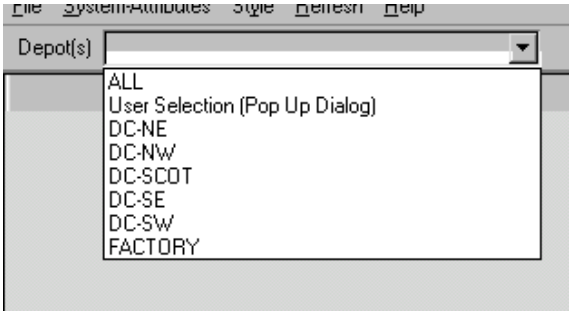
*Please be aware that if Bing Maps rejects a block of calculations **NONE** of the times & distances in that block are calculated.*

Changing the Depots and Days using the Toolbar

The Toolbar is displayed under the menu options bar and allows the user to select depots to work with and alter days (for strategic) or dates (for daily planning).



It is important to note that once depots are removed from display their routes and Deferred calls/orders ARE NOT SHOWN in any of the panels.



Depots

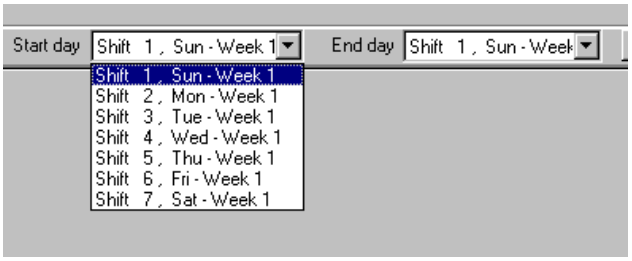
When the Egotrip program is started **ALL** depots are displayed by default. The Toolbar may be used to select individual depots or a range of depots to work with. With the LHB on the mouse click the arrow indicator to the right of the depot field to display the drop-down box.

This list will allow the selection of ALL depots , or an individual depot name using the LHB.

Additionally a User Selection (pop-up Display) option is available which will allow the selection of a range of depots for use. If this is selected a dialog box will appear to prompt you to select the required call (either by holding down the LHB and dragging over the required objects or using CTRL key). Once a selection has been made click on the Selected button to save the choices. Alternatively select the All button to add all those indicated or Cancel to quit.

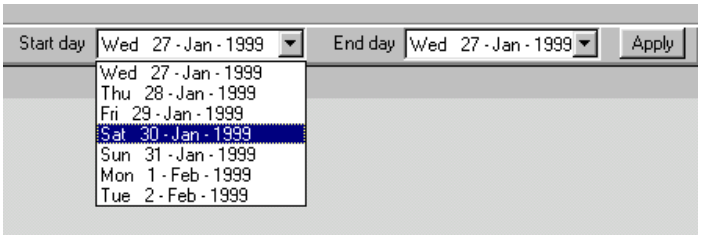
When options have been changed the Apply button is used to activated the new choices.

Strategic Planning Days



When the Egotrip program is started **ALL** the days in the DCP planning period are displayed by default. The Start day field will be the first day in the DCP and the End day field will have the last day. The Toolbar may be used to select a range of days to work with using the Start day and End day fields. With the LHB on the mouse click the arrow indicator to the right of the Start day field to display a drop-down box containing all the days available, and make a selection using by clicking the LHB. This will then drive the End day field which can be amended to give a range of days, such as a week in a monthly plan for example.

Daily Planning Dates



When the Egotrip program is started **ALL** dates are displayed by default. The Start date field will be the first departure date for the current routes on the MASS file and the End day field will have the last date. The Toolbar may be used to change the dates or select a range of dates to work with using the Start date and End date fields. With the LHB on the mouse click the arrow indicator to the right of the Start date field to display a drop-down box containing all the dates available, and make a selection using by clicking the LHB. This will then drive the End date field which can be amended to give a range of delivery dates.

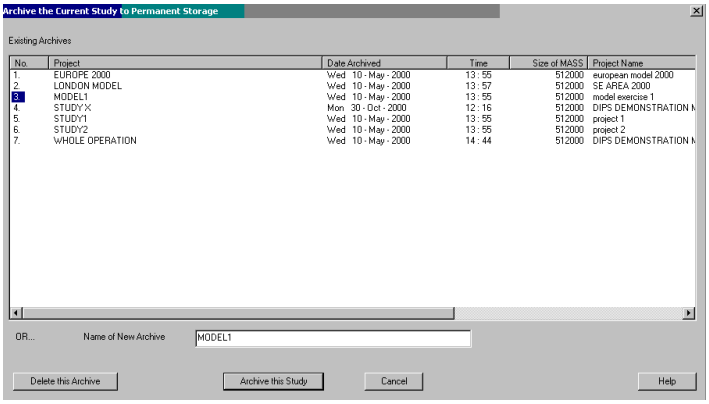
When options have been changed the Apply button is used to activated the new choices.

The Status Bar appears as the bottom line of the program and is employed whenever a User selection of Depots is made to display the depots currently in use.

Working with different Studies using Archive and Retrieve

Most current DiPS studies include five working files kept on the \DIPS directory -
MASS - which contains all relevant data for the study including calls, depots, parameters, vehicles, routes, and so on; TTMATRIX - which contains the depot to call times and distances; TTMPART2 - which contains the call to call data; WWORK and RINDEX - which contain roadfile network access data.

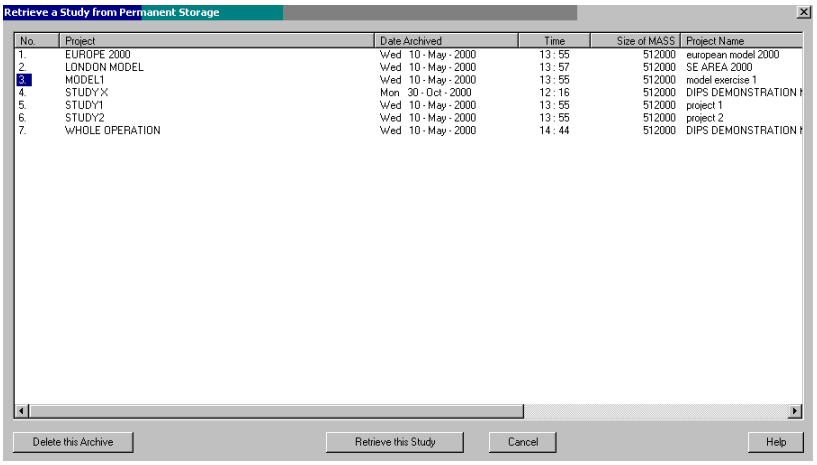
Only one study may be worked upon at any one time within DiPS, this being the set of files currently on the \DIPS directory. All of these study files may be copied to from and to other parts of the fixed disk using the File , Study menu option.



By selecting the Study, Archive this Study option these files are copied to another directory. A dialog box will appear as follows with details of the archived project including date, time, size of MASS file, and project id field :-

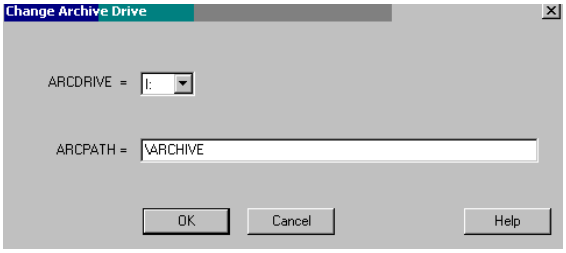
To overwrite an existing archive directory and the files in it, click with the LHB on the appropriate Project No. field. If you need to create a new archive project, type in the required name in the New Archive field. Complete the process by clicking with the LHB on the Archive this Study button. A confirmation message box will appear if an existing study is to be replaced.

Retrieving files from the archive location works in the same way, employing the Study , Retrieve an Old Study menu option and clicking with the LHB on the required Project No. field.
A confirmation message box will appear for confirmation that the current study is to be replaced



Studies can also be deleted by selecting a Project No. and then clicking on the Delete option. Any deletions are sent to the Recycle bin as normal. The archives can also be sorted as usual by clicking the LHB on the required heading.

The location of the backup files is usually in the \dips\archive folder. The study files are normally copied to a sub-directory of this main structure. In employing copy facilities with limited disk space please ensure that no error messages appear with regard to the copy function. If disk space is not available for the Archive or Restore the files will NOT be copied. The **File, Study, Change Archive's Drive** can be used to modify the folder path and drive letter for archiving studies. For example an arcdrive of **i**: and arcpath of **\archive** will create the archive study folders in the i:\archive folder. The drive indicated can be a network drive or CD-RW if desired. To change the existing location, simply type the new folder name into the arcpath field (complete with any **** necessary).



To save time loading up large studies when you need to retrieve another study, the latest program release allows the use of the special logon password SWITCH to bypass time consuming functions such as loading routes and running the matrix and go straight to the Retrieve an Old Study option in Kingpin Mode. To activate this feature, simply enter the word switch at the password prompt when the program first runs along with your normal logon ID

Saving Mass Files as Template Files

As a starting basis for new studies, template files can be employed to provide any information required initially. These are usually established from previous study information and can contain any amount for study data (depots, vehicle types, products, even call data). To save a MASS file in its current state (with depots, calls, routes, vehicles etc), select the File, Study menu option *Save as Template File* to display a file dialog. Save the file with a new name and location if required but to ensure the file is displayed in the New Study dialog use a .NEW extension.

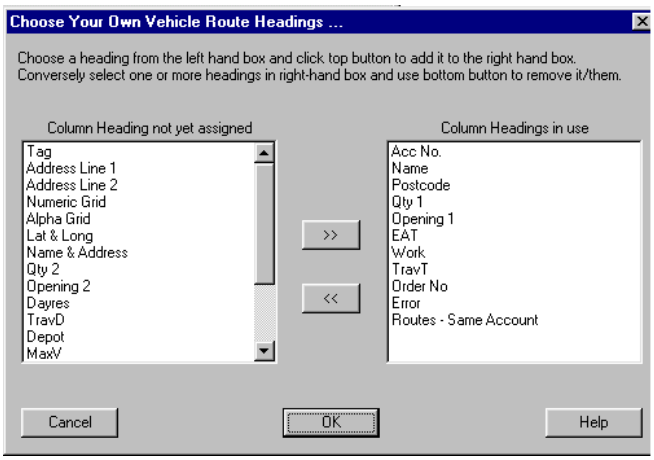
Save as Macros File

The DiPS Macro language is used to for longer term storage of study information in a compressed format. Each line of data input must be formatted correctly to include pre-defined comma separated values with an initial key letter to define the type of data - for example D for a depot, C for a call, or R to change times or other restrictions. Contact DiPS for more information if required. These files are normally saved with a .MAC extension.

Creating and Changing Styles

The Style options are used to control size and position details for windows, panels and route columns for each user. The Style is continually modified as windows are re-sized during any session. When a user logs onto DiPS at the initial dialog window the previous settings are restored. To change the options, either right click with the mouse on any displayed text panel header to show the relevant options or use the Style menu which offers the following commands to control headings in the text areas :

Route Headings
This option is used to set the required columns are positions for route panels. Select the option by clicking the LHB on the mouse to display the dialog window.



The available column headings are displayed in the left hand selection box and include options such as account no., order no., address, times, quantities, access restrictions, work times, and error codes. The headings currently in use are displayed in the right hand box in the order the will appear from left to right in a route panel (i.e. the top heading will appear on the far left). To select a heading and add it to the bottom of the current list, click on the heading with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. These will be added to the list in the order selected. The sequence of headings in the right hand box may also be changed by clicking on a heading with the LHB to select it and then using the Move Up/Down buttons.

Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the available list. Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous order.

Deferred Headings
This option is used to set the required columns are positions for the Deferred List panel. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

List Headings
This option is used to set the required columns and positions for List dialog boxes used in Draw Area or Click Call Mode graphics mode. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature

Carrier Headings
This option is used to set the required columns are positions for Carrier List panels. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

Matrix / Warefrom / Klusters Headings
This option is used to set the required columns and positions for the text panels in Warefrom, Whatinsq, Klusters or Highway mode. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

Kingpin Headings
Kingpin mode is available from the Edit menu to manipulate data, such as depots, calls, orders, vehicles and so forth. The details will be displayed in a spreadsheet view with one cell for each field of the item - for example a call may have an Ident field, Name, and Postcode in separate cells. The Ident will always be displayed as the first column in Kingpin mode.
This option is used to set the required columns and positions . Select the relevant data type by clicking the LHB on the cascade menu option to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

Customising Route Output & Summary Headings
Use the Style, Route Summary Headings menu option to set the required layout and columns and positions for the route summary area. Select the option by clicking the LHB on the mouse to display the dialog window. The selection options can be used to define the layout style preferred : either using the traditional fixed format report, or one of the spreadsheet style layouts. The pure spreadsheet layout will display information in rows of cells , whereas the formatted layout will leave some cells blank (forming a “half-way house” to the traditional layout). If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel. If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel. The available column headings are displayed in the left hand selection box and include options such as route no., trip no., vehicle, U1, U2 (vehicle unit1 or 2), shift, travel and work times etc. When using the Spreadsheet styles, the Summary information can also be printed or exported from the menu accessed by clicking the right hand mouse button. Pure spreadsheet formats can also be sorted by clicking with the left hand mouse button on a header. The Route Output report may also be customized in the same way, selecting the relevant headers and blank lines to create the required style. Depots are displayed by column with a total column also visible.

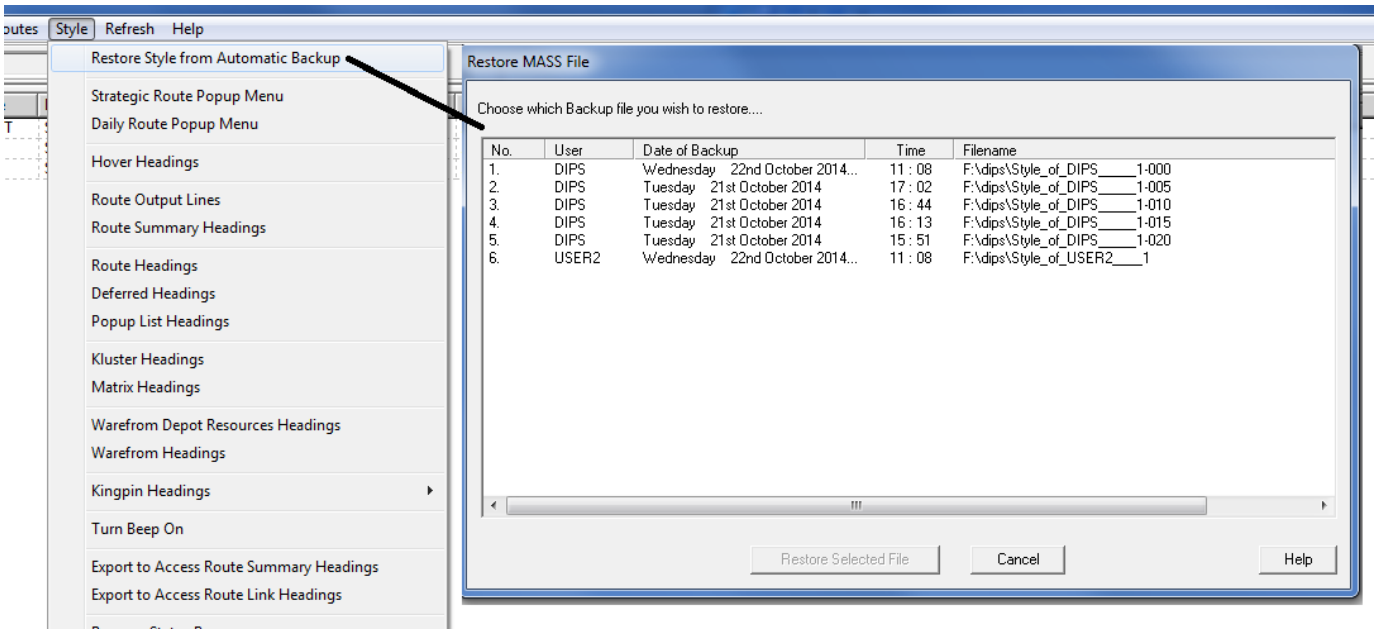
Automated Backup of Style Information for Display Settings

The Style menu options are used to control size and position details for windows, panels and route columns for each user. The Style is continually modified as windows are re-sized during any session and saved in a file containing the User Id held within the main DiPS folder. When a user logs onto DiPS at the initial dialog window the previous settings are restored. These Style files are now included in the automated backup process in DiPS: a copy is made at each backup of the main data file so that column and window positions are preserved.

13 copies of the style file are maintained in chronological order with the oldest file being replaced each time. By default automatic copies are made at 5 minute intervals during the session if activity is taking place, but it is possible to use Style, Set Backup Interval to set the required time. Any one of these may be selected for a Restore.

A new menu option at the top of the Style menu can be used to revert back to previous display settings if required. Click on **Restore Style from Automatic Backup** and a dialog will appear to prompt you to select the required file by clicking the LHB on the project name. To help choose the correct file the dialog box will display the User, Date of Backup, Time, and filename

Once a selection has been made, click on the **Restore Selected File** button to activate the choice. Alternatively select Cancel to quit. Press the **APPLY** Button to re-load data and employ the required columns and window positions.



Once selected the display settings saved in the file will become those used and sub sequentially saved for the current User.

Styles for other Users will also be displayed in the dialog, meaning that it is possible to adopt another User's display options for the current User.

Using Automated Style Backup to Adopt Display Settings for New Users

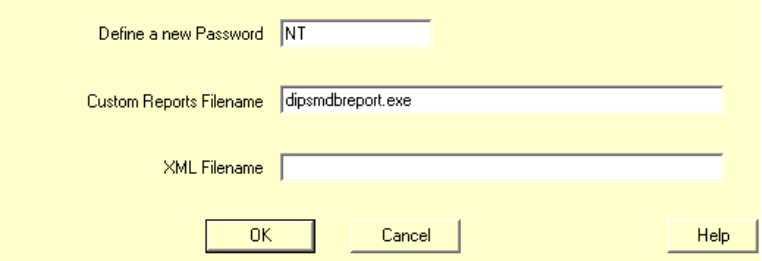
The automated style backup option can also be used to enable a new User to adopt existing standard settings if necessary. Click on **Restore Style from Automatic Backup** and when the dialog appears select the required User file by clicking the LHB on the No.

Once a selection has been made, click on the **Restore Selected File** button and all the column displays and window sizes will be adopted by the new User. Finally press the **APPLY** Button to re-load data and employ the required columns and window positions.

Displaying Extra Bespoke Information Using Pass Through Data

To display more information within DiPS, extra user-defined columns may be specified and displayed using Pass Through Data.
This data can be loaded and stored for depots, calls, orders and shipments. It is not available for editing once within the program as it is stored in protected areas of the records, hence the term Pass Through Data.

The information can be loaded from spreadsheet or via changes to bespoke interfaces as required. Up to 200 characters of information may be input in a single string and then an external .xml file (usually placed in the DiPS folder) employed to add the required column headings to the Style menu options. The .xml filename is defined in the Profile settings (which can be accessed using the Change Setup button on the File, Study Settings dialog).



Spreadsheet headers are as follows :-

Call	>A99	(strategic & orders)
Order	>*99	
Shipment	>S99	
Shipment's 1st Call	>S199	
Shipment's 1st Call	>S299	
Shipment's 1st Call	>S399	

The defined file uses the normal xml format with < > and < /> brackets enclosing the required information.
The file starts with <passThroughData> and ends with </passThroughData>.

In between these each different attribute is enclosed within <attribute> and </attribute> lines.

To define the column header to be displayed in Style menus enclose the text between the <> characters. For example to have a header "Mainframe Site No.", add 2 lines < Mainframe Site No.> and </ Mainframe Site No>.

To choose depot, call, order, shipment or kluster, add another two markers with the appropriate text (e.g. <call> & </call>).

The <type> indicator uses either text, integer or decimal to display the information in the required format. Decimal will take a number and add a decimal point in at the required position (e.g. decimal=5 will insert a decimal point 5 places from the right hand end of the number).

The fields required are enclosed within <fields> and </fields> lines.

To construct the display information use <offset> and <width> lines to define where the characters start in the Pass Through data string and how many characters are to be used. For example:

<offset>0</offset>
<width>10</width>

will take the first 10 characters of the data (N.B. Offset = 0 is the first character – the count begins at 0 not 1)

Using two <offset> and <width> pairs will add information together.

<offset>30</offset>
<width>10</width>

<offset>55</offset>
<width>5</width>

will create a string of characters 15 wide using 10 characters from position 29 and 5 characters from position 54 in the data.

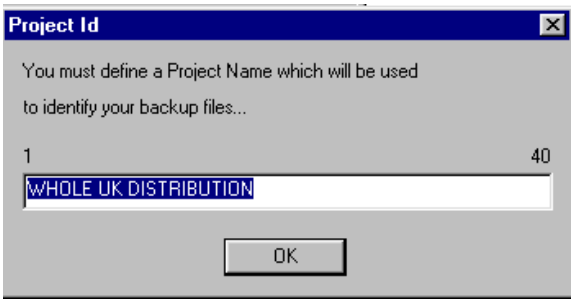
A full example is provided below. An example file can also be found in the HELP folder of the DiPS Installation CD.

```
<passThroughData>                                   (NB This explanation text is not required in xml file)

  <attribute>
    <title>Mainframe Site No.</title>               adds “Mainframe Site No. to the Style Headings

    <depot>                                         for a DEPOT

      <type>text</type>                             information is displayed as TEXT

      <fields>

        <offset>95</offset>                         displayed text starts at character 94
                                                    and is 10 characters wide
        <width>10</width>

       </fields>

    </depot>

  </attribute>

  <attribute>

    <title>Order Pass Thru Date</title>

    <order>

      <type>text</type>

      <fields>

        <offset>0</offset>
        <width>10</width>

       </fields>

    </order>

   </attribute>


   <attribute>

    <title>Internal Customer Number</title>

    <call>

      <type>integer</type>

      <fields>

        <offset>30</offset>
        <width>10</width>

        <offset>55</offset>
        <width>5</width>

       </fields>

    </call>

   </attribute>

</passThroughData
```

Backup and Restore the working MASS File

Automatic Backup

The backup and restore features available include both automatic and manual backup routines and a manual restore facility.



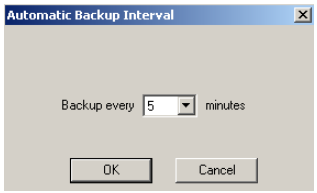
In terms of automatic copies an initial backup is done when the program is started. As part of the logon routine a Project Id dialog box will appear initially in order to set a name to identify the backup files created. This Project Name by default is set to the Study Title on the Master Records of the MASS file. This may be changed to any text of 40 characters or less. It cannot be re-set again for this session of the program. Once established an initial copy of the data will then be made.

On exiting the program a final backup is done.

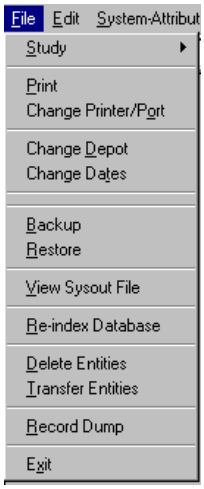
In this way **13 copies of the database MASS file are maintained** in chronological order with the oldest file being replaced each time - irrespective of the Project Id used. Any one of these may be selected for a Restore.

Further automatic copies are made at **5 minute intervals** during the session if activity is taking place

Changing the Automatic Backup Interval



Use the menu option Style, Set Backup Interval to set the required time between automatic backups for this style. Each logon style has its own unique value.

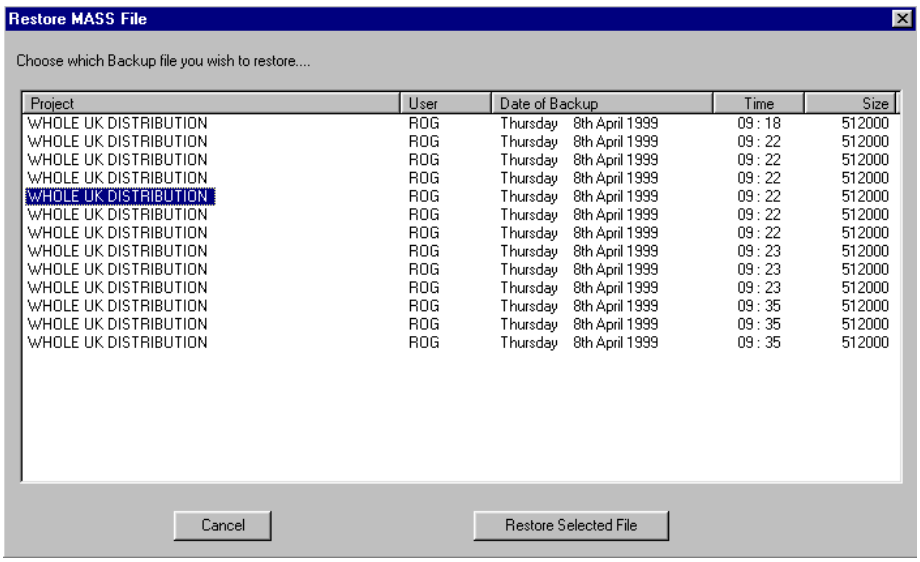


Manual Backup

Click with the LHB on this option to create a backup of the current file containing all the routes. This file will then be added to the available list of files for the *Restore* function replacing the oldest file in the list of 13 available..

Restore

Click with the LHB on this option to display a User Selection dialog box to choose the backup file to be restored as the working copy. The dialog box will appear to prompt you to select the required file by clicking the LHB on the project name. To help choose the correct file the dialog box will display the Project Name, User, Date of Backup, Time, and Size of file. Once a selection has been made, click on the **Restore Selected File** button to activate the choice. Alternatively select **Cancel** to quit.



Viewing and Printing Output Files

To create an output file for any mode of operation, Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports. To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

Once the file has been created it is possible to view it with the File, View a Sysout File option. The F8 key can also be used. All relevant files on the \DIPS directory are displayed in a selection panel; to nominate a file the following options are available :

Type in the filename (including the relevant .OUT extension). Point to the appropriate filename in the file box using the mouse and double click using the left hand button. Point to the appropriate filename in the file box using the mouse and click once using the left hand button to select the file and click on the OK dialog button. This display will clear after a selection is made and a percentage counter in the title bar area shows the progress made in loading the file. Only one file at a time may be displayed; however it is possible to select a new file for display to replace the current one. Click on the file option on the activity bar and this will display a menu; select open and this will cause the file dialog box to be re-displayed. Choose a file as before.

To change the font size for any program select the Font option on the activity bar followed by change. The Font window will then appear, with the sample area displaying example text for the current font. To change the font type select the down arrow for the Name field and select a new typeface from the list. (All system non-proportional fonts are available.) Use the scroll bars to move up and down the list if necessary. Select the Style, Size, and Emphasis if desired, and the click on the OK marker to save the changes or Cancel to quit without saving.

To jump to a particular section of the file select the **Index** Menu Option to reveal the Pages listbox (there is now no Pages sub-menu). A list of the particular titles specific to the output file will then appear (see program information for more detail on output available). To select a section, point at the required text and double click with the left hand mouse button. The display will then move to show the top of that section. Each section of the file is now also separated by a row of dots across the page.

It is possible to use the mouse pointer to move up and down the file using the scroll bars, which appear on the bottom and right edges of the window. To move up or down a section at time click in the area either above or below the position marker box. To move through the file whilst viewing the text point to the marker box and click and hold down the left hand button; then drag the box up or down and release at the required point.

In terms of the keyboard keys :

<Home> Moves window to Top Left Hand Corner of report.
<End> Moves window to Bottom Left Hand Corner of report.
<PgDn> Moves window down 20 lines.
<PgUp> Moves window up 20 lines.
<Down> Moves window down 1 line.
<Up> Moves window up 1 line.
<Right> Moves window right 1 column (beeps past column 256).
<Left> Moves window left 1 column (beeps if at column 1 already)
<Ctrl> and <Right> Moves window right 40 columns
<Ctrl> and <Right> moves window left 40 columns
<Tab> Moves to next 'NEW PAGE' of the report. This facility allows you to skip quickly through the title lines of each report.
<Esc> To finish with this file and be asked for another filename.

Printing

There are a number of print options within the VF program – including printing a page or printing the complete file. To display the menu choices click on the Print option on the activity bar.

Page :- Select this option to print just the page currently visible on the display. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed. The page print remains in the print queue until it is passed to the printer either by another page print, by use of the GO option in the print menu, or by closing the program. Any normal page break information will be ignored.

File :- Select this option to print all the information contained in the present output file. Page breaks will be governed by the different defined in the text.

To select a range of text lines for printing click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the Left Hand Button of the mouse. To de-select an area click again to un-mark the line or lines. Then a click on the Print Menu

Option followed by a single click on the Print Highlighted Option will send the relevant information to the printer. A single tone beep will sound when the process is complete.

To select sections for a print routine, select the **Index** Menu Option to reveal the Pages listbox, then press and hold down the CTRL key and click with the Left Hand Button of the mouse on each required section in turn. When all have been chosen a single click on the **Print Selected** Pushbutton will send the relevant information to the printer. A single tone beep will sound when the process is complete. Click on **Cancel** to exit this routine.

There are also choices obtained by clicking the RHB on the text screen.

Print ALL this report:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text.

Print Visible Lines :- Select this option to print just the page currently visible on the display. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed. The page print remains in the print queue until it is passed to the printer either by another page print, by use of the GO option in the print menu, or by closing the program. Any normal page break information will be ignored.

Print Selected Lines :- to select a range of text lines for printing click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the Left Hand Button of the mouse. To de-select an area click again to un-mark the line or lines. Then a RHB click followed by a single LHB click on the Print Selected Lines Option will send the relevant information to the printer. A single tone beep will sound when the process is complete.

To select sections for a print routine, select the **Index** Menu Option to reveal the Pages listbox, then press and hold down the CTRL key and click with the Left Hand Button of the mouse on each required section in turn. When all have been chosen a single click on the **Print Selected** Pushbutton will send the relevant information to the printer. A single tone beep will sound when the process is complete. Click on **Cancel** to exit this routine.

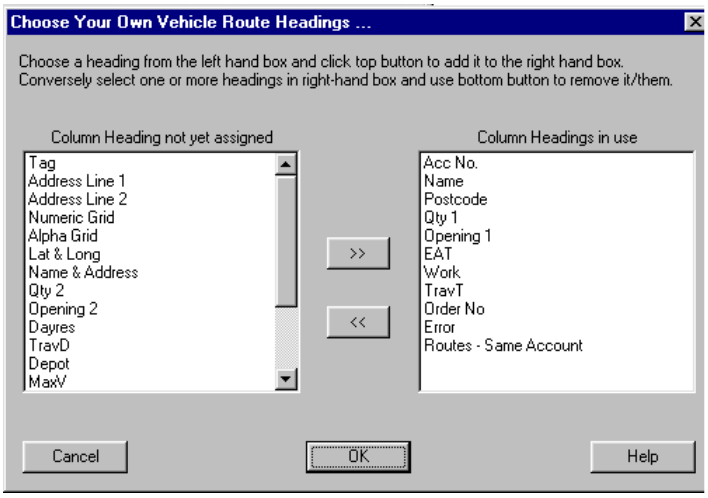
Edit Menu - Change Data and Basic Parameters

Kingpin Mode to display, modify & create Data

Kingpin mode is now available from the Edit menu to manipulate data, such as depots, calls, orders, vehicles and so forth. To switch to this mode click Edit menu, followed by Kingpin mode. The screen will change accordingly to display 3 panels - Graphics, Summary panel and Data on the left. The initial display will be for depots.

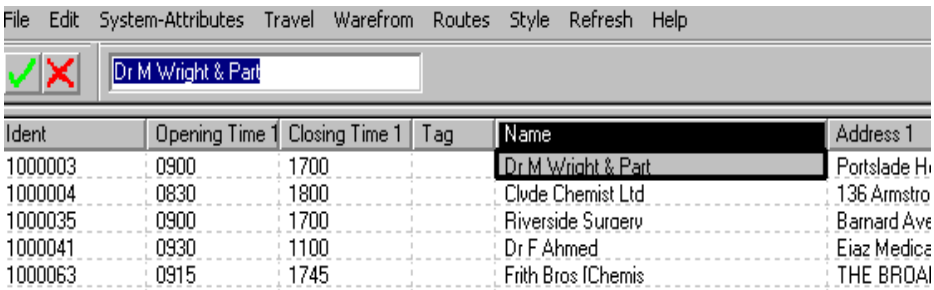
To change the view to see any other items, click on the appropriate tab on the Summary Panel. The details will be displayed in a spreadsheet view with one cell for each field of the item - for example a call may have an Ident field, Name, and Postcode in separate cells. The Ident will always be displayed as the first column in Kingpin mode.

To change the information on display, use the Style menu and move to Kingpin Headings and select the option by clicking the LHB on the mouse to display the dialog window.



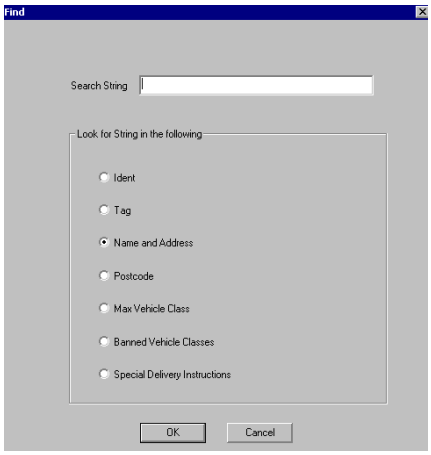
The available column headings are displayed in the left hand selection box and include options such as account no., order no., address, times, quantities, access restrictions, work times, and error codes. The headings currently in use are displayed in the right hand box in the order the will appear from left to right in a route panel (i.e. the top heading will appear on the far left). To select a heading and add it to the bottom of the current list, click on the heading with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. These will be added to the list in the order selected. The sequence of headings in the right hand box may also be changed by clicking on a heading with the LHB to select it and then using the RHB to drag it to a new position in the list.
Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the available list. Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous order.

Once the required information is displayed in Kingpin mode it may be amended by use of the edit field in the toolbar area. Clicking on the appropriate cell will display the details, which can then be amended as required. It is also possible to select a range of cells using the LHB with either the CTRL key or by holding down the LHB and selecting the appropriate range, and change values for all highlighted fields. The format of the edit field will change depending upon the value in question, e.g. a drop-down selection box may appear for values such as depots or vehicles when displaying calls. Click on the tick box to change values or the cross to abort. In time and date dialogs a tick box will appear in the field to offer a method of removing values, clear the tick box and then save to set all selected values to be blank. To select an entire column of data to change, click the RHB on the heading and all values for the selected data type will be highlighted. Arrow Cursor keys can also be used to move round the fields (Up, Down, Left, Right, Home , End).



Details that cannot directly be amended are displayed in grey text. These are often fields that are calculated depending upon other values. Any related values will automatically be updated where possible,. As an example if postcodes are changed, grid reference values will be amended accordingly, and similarly if latitude/longitude values are amended grid references will change to the appropriate values.

A menu option may be displayed by clicking the RHB on any cell. This menu will allow Create, Properties, Search or Delete for any data type. To create a new depot for example, select the Create option to display an ident box. Once this if filled in, click OK to create the depot and fill in any details on the Properties Dialog that appears. Finally click OK to complete the process. The Insert key can also be used to create a new entity. Properties will display the required Properties dialog for the selected entity.



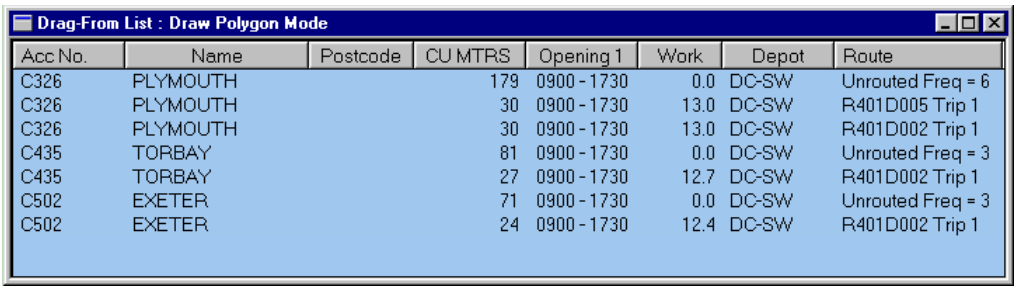
To delete an entity or group of entities. Select the required items in the normal way, using either a single click, click and hold down the LHB to select a range, or using CTRL+LHB to select a number of items. Then click the RHB to display the menu and select the Delete option. All selected items are then deleted. It is important to note that the deletion of any entity within DiPS will automatically remove any other entity directly related to the original. For example to delete a depot will delete all of its constituent parts such as vehicles, routes, calls and orders! This is also true for call and orders. However, it is useful to note that deleting routes will not remove calls, orders or vehicles. To safeguard against possible error the Entity Type Depot will only be allowed where more than one depot currently exists. There is also no “Un-Do” process, to restore the file use the File, restore option as normal to recover the required Mass file.

Pressing **Ctrl** and the **Delete** key whilst data is highlighted will remove the items from the database. Pressing the **Insert** or **Ctrl and Insert** key will bring up the dialog to create a new entity.

The Search option may be used to find an entity in a list, matching address details for example. It is usually employed for calls or orders. To find a call, select the Search for a Call option, to display the Find dialog.

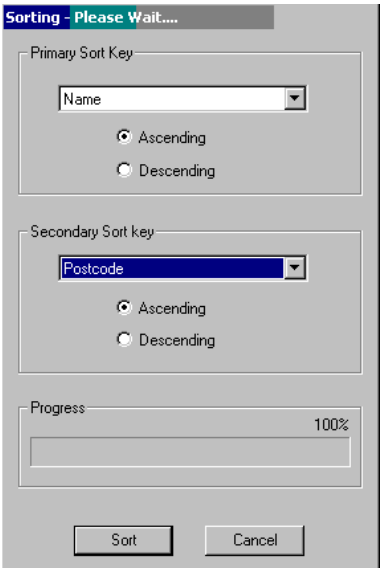
Select the appropriate area to search, enter the string required, and click OK.

The results of the search are displayed in a list-box. Data can be manipulated from the box in the same way as above for normal Kingpin mode.

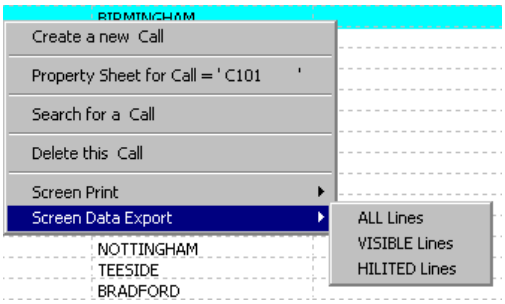


Acc No.	Name	Postcode	CU MTRS	Opening 1	Work	Depot	Route
C326	PLYMOUTH		179	0900 - 1730	0.0	DC-SW	Unrouted Freq = 6
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D005 Trip 1
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D002 Trip 1
C435	TORBAY		81	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C435	TORBAY		27	0900 - 1730	12.7	DC-SW	R401D002 Trip 1
C502	EXETER		71	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C502	EXETER		24	0900 - 1730	12.4	DC-SW	R401D002 Trip 1

To sort Data lists by any column click once with the LHB on the column heading. Use a double click to show a dialog offering the choice to sort by any of the columns in the data list using Ascending or Descending priorities (the default is ascending). A secondary sort key may also be selected using the list box option. Data will be sort firstly on the primary key and then within equal values by the secondary key. Click on the Sort option button with the mouse LHB and the progress indicator will start. It is possible to interrupt a long sort by clicking the LHB on the Cancel option, and just display the initial re-ordering already completed.



Exporting Data



This facility is available using the Screen Data Export menu choices available after clicking the mouse RHB; enabling selected information to be exported in three ways using the “file save as type” in the dialog box – launching Excel and exporting data directly, as a normal text file, and directly into an Access database. Options for exporting the screen as displayed (i.e. with all the columns currently selected in the Style options).include exporting a single page or the entire list of data and are selected using the menu choices available after clicking the mouse RHB.

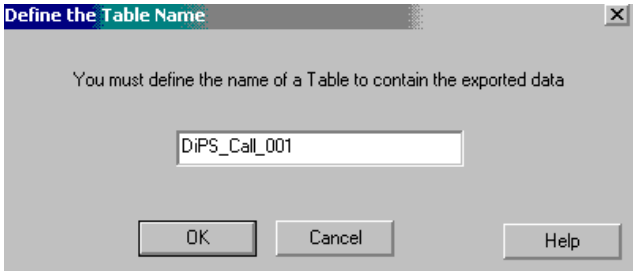
ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the

selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be exported.

By default the output file is called DIPSDATA and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

The initial type selected is an Excel spreadsheet. Selecting this option will launch Excel in a window and export the indicated data into a sheet called DiPS_Call or DiPS_Depot depending upon the type of data exported. The appropriate DiPS headers for each column are also transferred onto the sheet to ease re-loading any amended data from this file. A progress indicator will run if necessary. This feature is only available in later versions of Microsoft products.

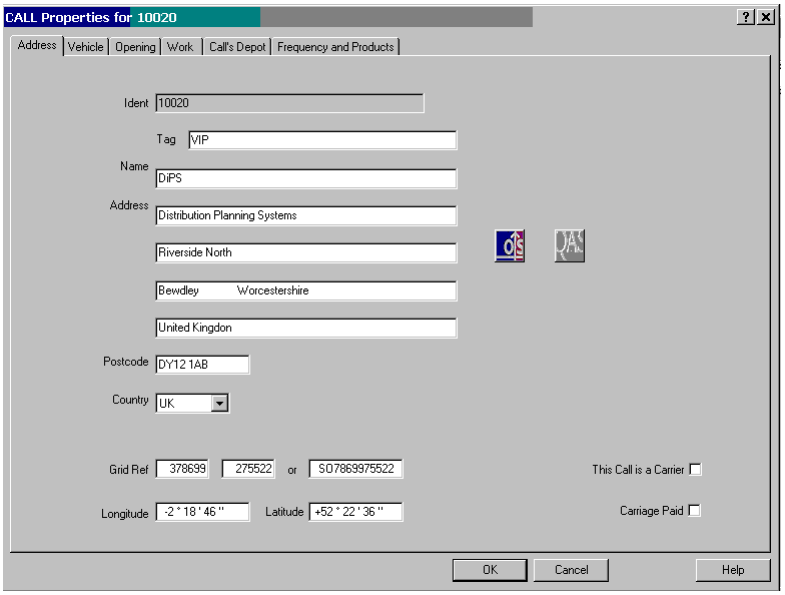
For an Access database the information is exported as tables. Only those fields in use in the headers option will be added to the database. When a database table is created a dialog will appear asking for a Table Name. The default name will have a sequence number on the end to ensure that all the existing tables will remain intact. Select a new name each time if the existing information is required for future reference.



For a text file each of the columns of data is separated by a comma and can be loaded using any File, Open routines (for Excel use *delimited* and *comma* at the Import Wizard prompts). The file extension is .csv.

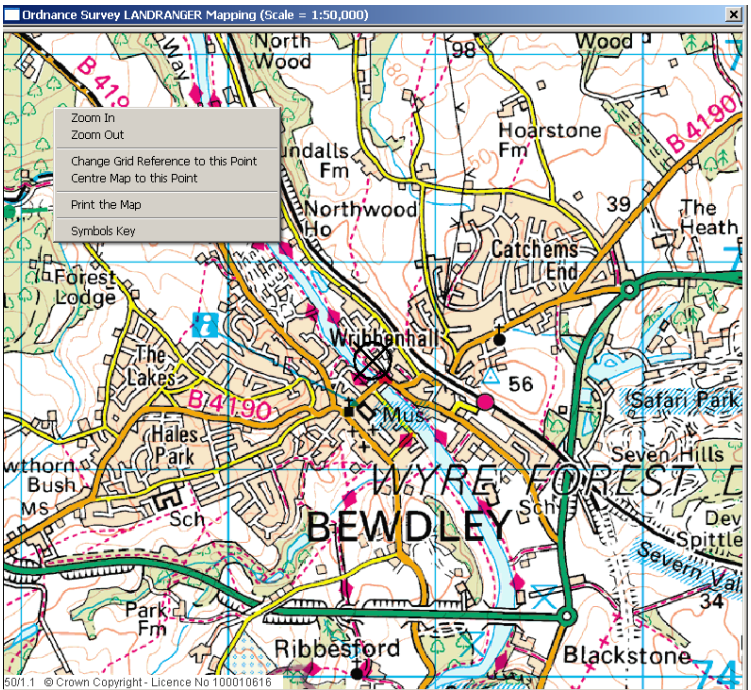
Using OS Maps to locate Depots, Calls or Orders

The purpose of a grid reference within DiPS is to locate the entity in relation to the road network database. It is important to note that only entities with valid grid references will be used in the planning processes.



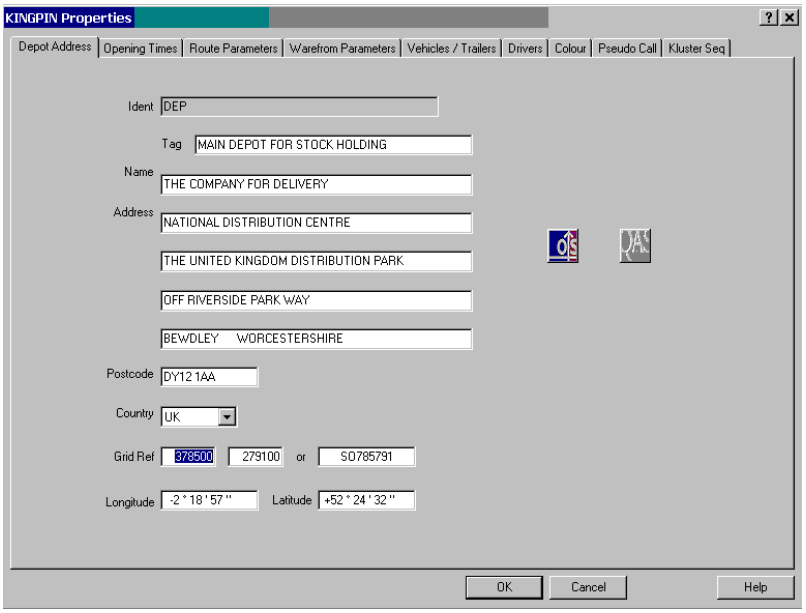
To use the interactive map process to refine a location, simply click the OS button on any address page once an initial grid reference has been input. Use either postcode, gazetteer or input values for grid reference or latitude/longitude to produce an initial starting point for the map display. Please note that the map cannot be activated for zero values.

Once the map is visible, it will display the location marked with a crossed-circle. Zoom In or Out as required to identify the area. If you need to move the location at all, simply point at the new spot with the mouse and click the RHB. From the menu that appears, select Change Grid Reference to this Point. The location will be amended on the address page. Click OK to save the new location or Cancel to abort. Close the Map Window using the cross at the top right of the title bar. You can also print a map of the location of required using the menu option provided.



Creating and Changing Depots

Point to the appropriate call or depot using the mouse cursor and double-click with the LHB to display the dialog; or on a graphics picture hover over the call to display the pop-up display and click with the RHB to display a pop-up menu. From the list of options select Call details to view Information. A notebook containing various information is displayed as a pop-up. Click with the LHB on the appropriate tab at the top of the notebook to select the required page. Amend the values as required and then click on the OK button to save the changes or Cancel to quit.



Address Page

Tag Field

In addition to the Ident a further 40 character sub-field (known as the TAG FIELD) may be used to allow for sub-grouping of depots within the print / delete / transfer functions and in the routing algorithm passes. Any combination of characters or spaces may be input and amended at any time to allow for depots to be processed by matching tag fields

Address

Address information can be input into both calls and depots in order to aid identification of points, and appears in the following formats : *Ident Grid Reference Address Fields 1, 2, 3, 4,5 & Postcode*

The main purpose in using address information is to provide the delivery point or depot point with a valid grid reference so that the Time/Travel Matrix generation programs can calculate an accurate time and distance between points.

Grid Reference

This field is used to display an Ordnance Survey grid reference. It can be made up of either a single alpha-numeric value or a pair of numeric values (one for easting, one for northing). Examples would be - **SU1234** for an alpha-numeric value, and **224433 445345** for a numeric value (easting northing). The purpose of a grid reference within DiPS is to locate the entity in relation to the road network database. It is important to note that only entities with valid grid references will be used in the planning processes. Values may be entered directly into grid reference fields or the use of postcode or gazetteer databases will produce appropriate values to locate the entity.

Address Fields

Up to 40 characters may be used to define the address lines of an entity. There is no limit to the number of entities having the same address lines (either 1,2, or 3). If this field is blank and a valid postcode is entered into the postcode field of an entity then the name associated with that postcode will be allocated to this field. In the case of sector level postcodes (e.g. DY8 5xx) the first two lines of address will be completed.

In the absence of a postcode, one of the address lines may be used as a lookup with the DiPS Gazeteer to locate the call. Once more than 4 characters are typed into an address line, the lookup function will offer a list-box with all matching locations. Point to the required location and click the LHB to accept it.

You must not use commas , or brackets ( ) in any address lines as the use of these can affect DiPS operations conducted using the macro language, such as rescuing the MASS file.

Postcode

A postcode may be used to define a grid reference for an entity. The general format of the postcode is AAxxB yZZ, where AA is the area code (one or two letters), xx is the area code number and B is a suffix occurring in densely populated areas (London) where only one letter is used for the area code or one number for the area number. The y is the sector number and ZZ is the final walk/street code. All but the ZZ part can be used in normal DiPS operation.

Valid postcode input can be for

AREA level - for example DY12. This is the minimum information required.
SECTOR level - for example DY12 1xx. This provides for a more accurate location.
If a full postcode entry is used (DY12 1AB) the information is accurate to sector level under normal operation.

The postcode entry is cross-checked with the postcode database and the appropriate values are placed in the grid reference fields. You will be warned if the system detects any errors on the input. Messages include :-
Not enough Postcode specified - you must enter an area number (no grid reference produced)
Illegal Postcode area - either the area code or area number is incorrect (no grid reference produced)
Illegal sector number - area level postcode grid reference is used
Missing Space between - cross-check has detected the lack of a space between sections
Missing suffix letter - area requires a suffix letter

International Country Code

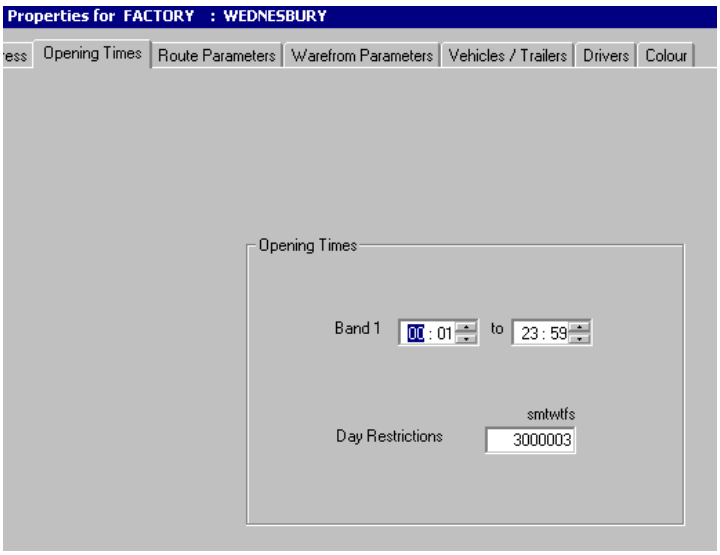
As new calls and depots are created on the system, they are allocated a default country flag (which appears next to the ident field) that is used to identify the relevant postcode or gazetteer file to locate them. Country codes may also be changed after a call or depot has been created.

Longitude and Latitude

As there is no common grid system (e.g. OS National Grid for UK) for the whole of Europe, the International DiPS system uses Latitude and Longitude (or Lat/Lon) to locate points. Two separate fields (one for Latitude and one for Longitude) are used and these appear in the form of: Degrees (+ for east of zero , - for west of zero), Minutes, Seconds. Other locating facilities such as the Gazetteer or Postcode lookup will provide grid references in this format.

Opening Times Page

These fields use the 24 hour clock notation of HHMM to define the opening time of the first band of opening. For a depot it defines the earliest time a vehicle may leave the depot and the latest time a vehicle may arrive back at the depot at the end of its route. For an unrestricted operation where vehicles operate on an on-going 24hour cycle use 0000 for both bands (which will produce blank fields).



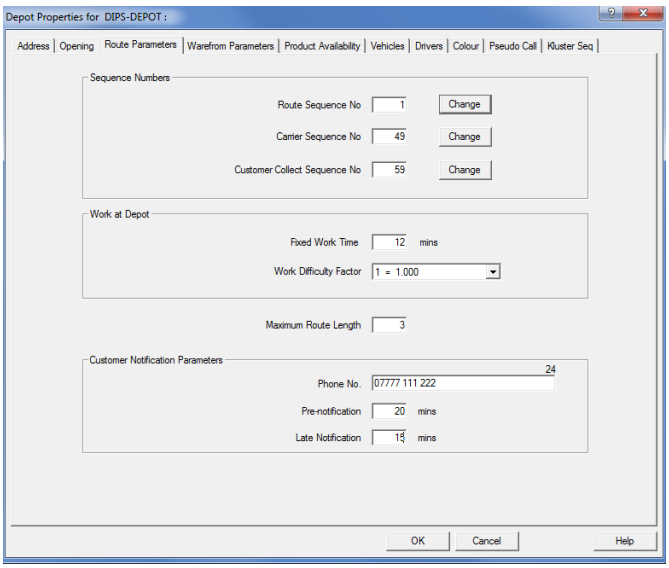
Day Restrictions

The day restrictions field is a seven digit number designed to control opening times in conjunction with the bands defined. Each digit represents a day of the week in the sequence **SUN - MON - TUE - WED - THU - FRI - SAT**
The value of each digit is determined from the following codes :- **0** - Open , **3** – Closed.
For input from a spreadsheet package use the numerical value as you would expect to see it displayed. The system will account for leading zeros in constructing the seven digit number it requires.

Day restrictions cannot be changed if routes exist for the depot in question
Depot Route Parameters

Route Sequence Headers

This field is used by route planning programs (VANGUARD, DAYPLAN, and MANPLAN) when routes are saved to the MASS file. A unique sequence number must be given to each depot so that routes can be distinguished between depots and to ensure that route numbers do not conflict for different depots.

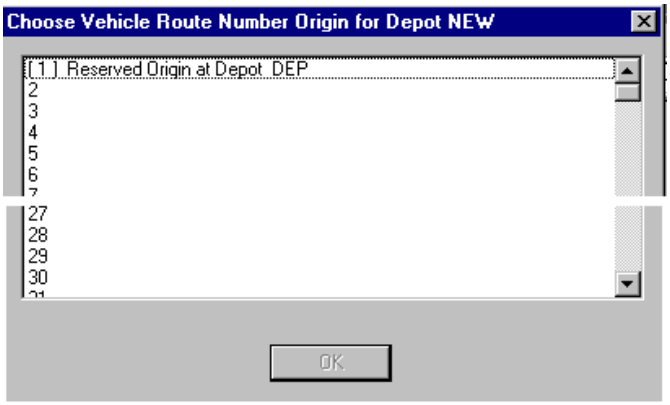


For example a depot with a route sequence number of 21 would have routes commencing with R021Dxxx and so on. The values can be defined by a user when creating depots and vehicles in a study.

Click on Change to modify values. This feature is disabled if routes already exist for the depot. In this instance use the File, Delete menu option to remove old routes.

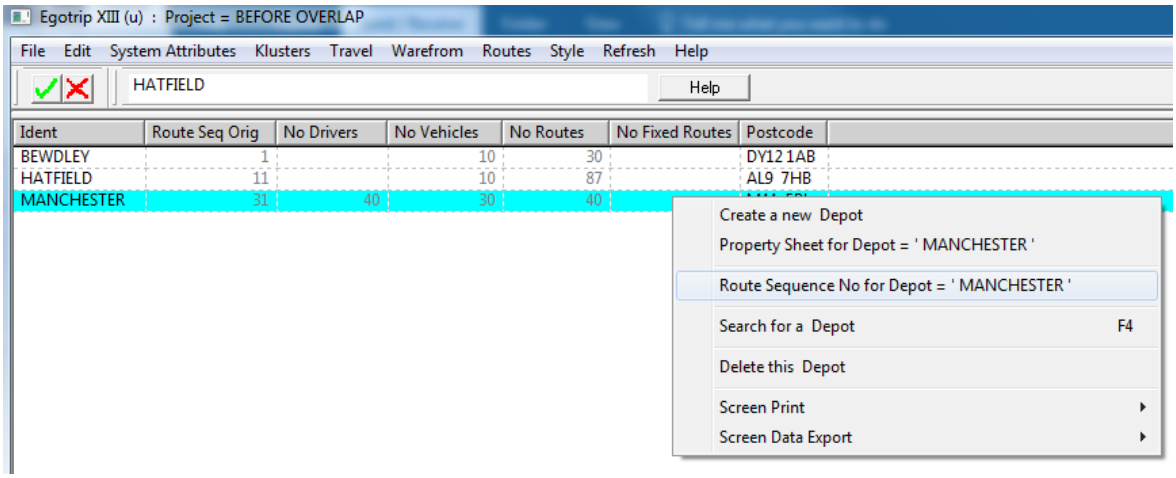
A dialog box will appear giving routes 1-999 as possible starting sequence numbers for the depot. Those in use by existing depots will be shown as reserved. Select a number using the LHB and click OK.

Be careful when choosing numbers to ensure that possible future increases in vehicle numbers at the depot will not cause overlaps. Use a gap as large as possible given the number of depots in use.



A menu function has been developed to allow route numbers to be changed if existing routes have been created for that depot. This process can prove useful where additional vehicles or drivers are required for a depot but that sequence number would overlap another.

Available in the Egotrip Route Summary Panel whilst routing or in Kingpin Mode, simple right click on the appropriate depot and choose the menu option – **Depot Route Sequence No.**



Once selected the Change Route Sequence Number dialog appears and a new number can be selected, such as 101 to allow adequate space between depots.

Fixed Work Time

For depots fixed work time represents a fixed time in vehicle minutes for turn-round in between trips of the same route, allowing for unloading/re-loading/driver de-brief etc. This may also be used in conjunction with a Depot Rate to allow for variable turn-round time dependent upon product or vehicle unit values. Set the Work parameters table in Edit menu to identify when the work time is employed, i.e. before first trip or between trips and so on.

Work Difficulty factor

This value is used to cross reference one of the ten Work Difficulty Factors that may be defined. These values will modify the variable work rate at collection/delivery points and depots. For example if a class of 2 corresponds to a pre-set Work Difficulty Factor of 0.500, the variable work element will be halved accordingly. For a depot this factor will affect the variable turn-round time if set. By default all factors are set to 1.000 (i.e. no modification) and the class is set to 1.

Max Route Length

This field defines the maximum number of days for a single route. Values of 1 to 7 inclusive may be used. This field merely sets a maximum value for route length. In order to create routes of the correct length the scales macro parameters may need to be manipulated accordingly.

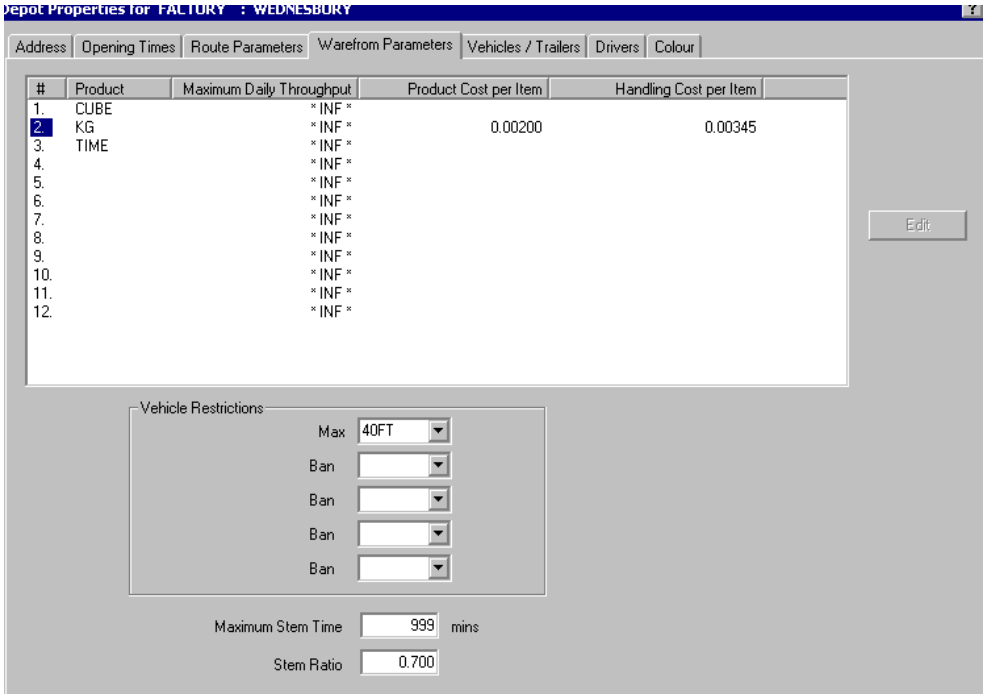
Notification Parameters

A customer Phone No. (or other contact information) and two notification parameters enable any 3rd party software to send arrival time information and further notifications based around two specific before and after times.

Information can be entered manually or imported from spreadsheets and interfaces as required. The three fields can also be exported using the Routes Menu option Export Routes to Access Database or as Text. Relevant columns have also been added to display the information whilst in the DiPS program itself. As the Phone No. is a text field, other information such as email addresses can also be employed if required.

As an example of use, the phone no. may be used to provide a SMS message regarding delivery arrival time in the first instance, with the Pre Notification time being used to send a further message when the vehicle is for example 10 minutes away or the Post Notification tolerance time being employed if the vehicle will arrive say more than 15 minutes late. Depot information could be used to notify depots of any late returning vehicles.

Depot Warefrom Parameters



Maximum Throughput

This field limits the amount of each product passing through a depot during on a Warefrom run, in effect limiting the size of the depot in terms of its allocation of calls/klusters. If this limit is reached during a run the program will automatically transfer calls to their next best supply chain or depot choice (starting with the lowest marginal cost difference) until the criteria is satisfied. The default values are set to a very high number to simulate infinite resources at the depot. The limit applies separately to deliveries and collections. Deleting the value to produce a blank or keying in a zero will effectively close the depot for the purposes of allocating calls with that product type in Warefrom. A zero value will also exclude any calls being scheduled in route planning runs. Click the Edit button after highlighting the product no. and alter the values in the dialog box.

Depot Cost per Product

This field is used in conjunction with the Warefrom program to allow for additional cost to be calculated for each product type handled by the depot. Any value may be used to represent a cost unit (up to 5 decimal places) but cost factors used must be comparable for the results to be accurate, for example any vehicle costs must be in the same units as product costs. If possible try to use larger values (e.g. for £1.00 use 100p) as this will avoid potential problems (such as rounding errors) with the calculation of numbers in the Warefrom program. The program multiplies each item of any product required by the call by the appropriate depot cost and adds the result to any additional costs calculated. This total is then used to find the cheapest depot option available (subject to any other restrictions placed upon that depot). Remember to change Warefrom menu parameters to include the correct costs prior to running the program as by default it only considers vehicle costs and not product costs.

Vehicle Restrictions

The Maximum Vehicle Size drop down box is used to specify the biggest vehicle that may access the depot and displays all current vehicle types for selection using the mouse LHB. The system will compare the first unit of capacity of the class in deciding whether it be allowed access. Using Banned Vehicle Classes it is also possible to specify up to four classes that are not allowed access to the depot. The effect of this on a depot is to prevent any calls having this maximum vehicle size from being allocated to this depot in a warefrom run. Call vehicle size restrictions (Maximum and Banned) can also be manually typed with ??? wildcards to exclude any vehicle type which match the criteria given and can include ? in any of the four available characters. The system will provide a cross-reference to any value to ensure that it matches at least one existing vehicle class. Four wildcards (????) to exclude all vehicles from a call cannot be used. Any attempt to input such values will lead to an error message with the restriction being set to the Default Restrictions maximum specified. Examples of valid fields would be **A???** (excluding classes such as AR22, ARIG, and AB); or **?2??** (excluding classes such as AR22 and ARIG).

An error message will be displayed if the Depot has a Maximum Vehicle class smaller than some its vehicles (e.g. if the maximum vehicle size is set to 17T and the depot has 44T vehicles allocated to it) as any Route Planning programs run will not in this case use all the available vehicles. To solve the problem, either change the Maximum Vehicle parameter in the Depot's Warefrom parameters tab, or modify the vehicle fleet accordingly.

Maximum Stem Time

This field limits the extent to which depot catchment areas may be grown in the Warefrom program or routed in VANGUARD or DAYPLAN. Calls or Klusters which are further than this driving time limit from a depot will not be allocated to that depot's work. A common use of this parameter is to ensure that areas can be served by specific one-day or two-day routes. By limiting the value to the equivalent of half of a shift's maximum driving time, calls would not be allocated where deliveries would require a second day out. The normal default value of 240 is representative of this.

Stem Ratio

The main function of the Stem Ratio field is to take inter-drop travel into account within Warefrom - the program otherwise gives a result based solely upon Stem time/distance (i.e. from depot to delivery point only). Cost values for stem time and distances are multiplied by this factor for each of the depots to be considered. For example a depot with a Stem Ratio which is lower than that of another depot will be at an advantage (other things being equal) and will therefore be preferred in the allocation of areas. For example where a call is equidistant from the two depots, say 100 miles, the depot with a ratio 0.6 will be preferred to the other with a ratio of 0.7. The relative costs (at 1p per mile would be 60p and 70p. In such a way a common use of the parameter is to increase depot areas - the lower the stem ratio, the more attractive the depot appears, and the larger its delivery area becomes.

After initial Warefrom analysis a more accurate value for Stem Ratio may be obtained by running VANGUARD, where it is calculated as the ratio of total distance driven by all routes to the total of stem distances for all delivery points, i.e.

$$\frac{\text{SUM OF ALL ROUTE MILEAGES}}{\text{SUM OF ALL DEPOT TO CALL STEM DISTANCES}}$$

Values can range from 2.000 which would correspond to single drop routes, to as low as 0.001 or extremely concentrated delivery areas. The relative cost difference in two calculations for stem ratios of 0.700 to 0.100 would be 700%. in such a way if Warefrom costings are to be used for anything more than a simple comparative exercise, stem ratio values must be carefully considered. For Multiple Model data where products are dealt with individually in Warefrom analysis, a Stem ratio value may be applied to each specific product if required to reflect the differing approaches to delivery operation for particular products.

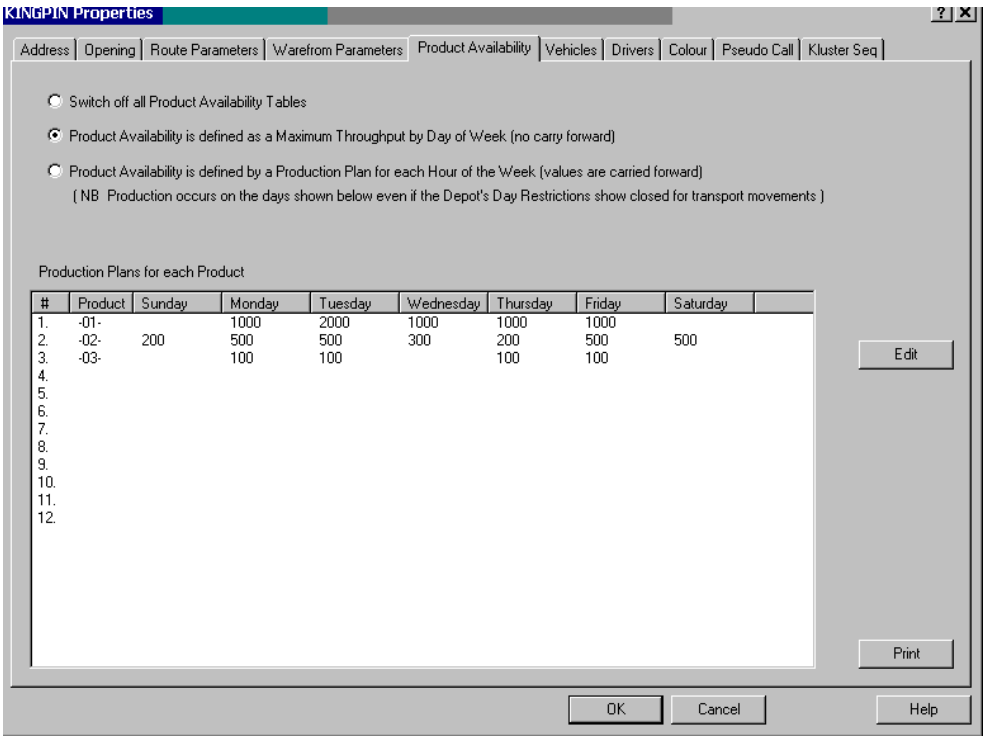
Setting Product Availability for a Depot

Each depot screen now has a Product Availability tab to define when product is available at a depot for vehicles to depart on routes. Two options are available – to define a total amount by day of the week; or to define a production rate per hour of each day leading to a cumulative quantity becoming available. Choose the appropriate radio button to activate the required option.

Selecting Switch Off all Tables will mean that no limitation is set and the criteria on the Warefrom Parameters page will apply.

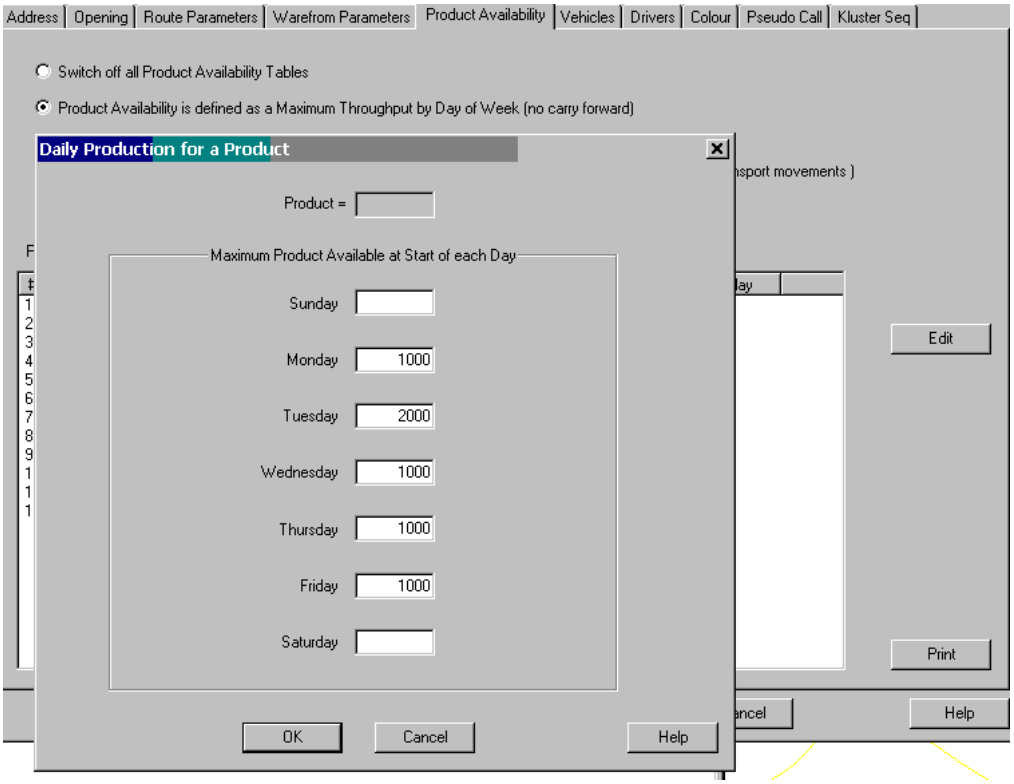
Different values may be set for each of the 12 product types.

The Product Throughput report in Egotrip mode will display the totals available and used



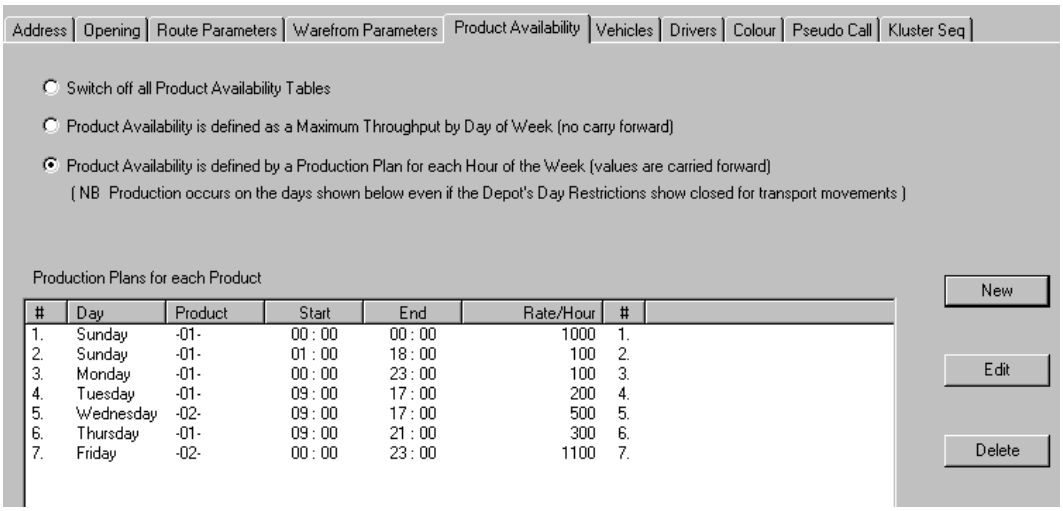
Daily Limits

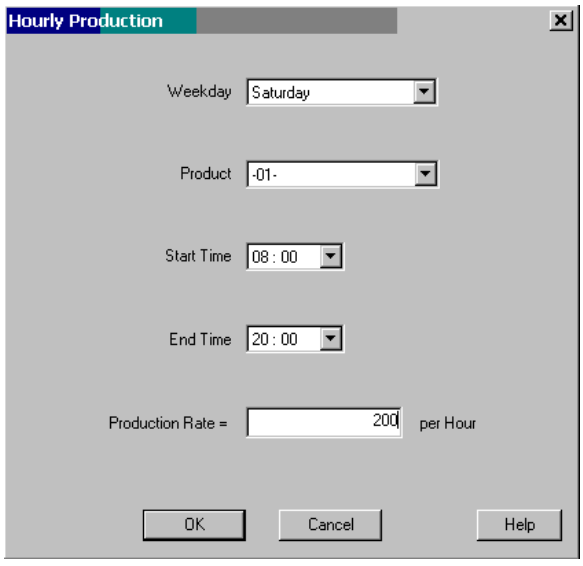
To define a daily limit for a depot, select the Day of Week radio button, click on the appropriate product and then Edit to display the Daily dialog. Enter a total amount available to be routed for each day of the week . When using this definition, product is not accumulated over the week or carried forward to the next day. There is also no time limitation on when the product becomes available – it is assumed to be ready at the start of each day.



Hourly Production Limits

To define an hourly production schedule for a depot, select the Production Plan for each Hour radio button, click on the appropriate product and then Edit to display the Hourly dialog.

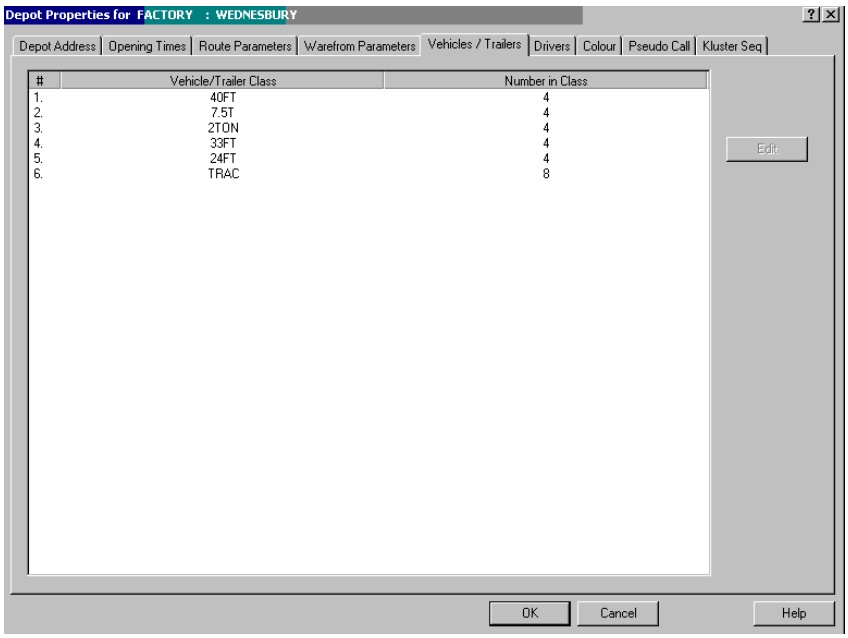




Set the Weekday and Product required, and then choose the Start Time for the production to commence and the End Time it finishes. Finally set the required production rate of Product per hour. From these values the system will then calculate the cumulative amount of product available based upon how fast the product becomes available.

When using this definition, product totals are carried forward to the next day and therefore accumulated over the week . In the example dialog a Saturday production of 200 product -01- per hour starting at 08:00 and finishing at 20:00 would lead to 2,400 being available at the end of the day. Any product routed on vehicles is then deducted from the accrued amount.

Vehicles / Trailers Page



This page will allow the input or modification of vehicle numbers. From the tab list select the Vehicles / Trailers using the LHB, and then double-click on the relevant Class # field or click the field followed by the click the Edit button to modify. The Modify Vehicles dialog will appear.

Using the LHB, click into the number required field, amend as necessary and then click on OK to save or Cancel to exit. The vehicle numbers will be modified accordingly, with any vehicles removed also being deleted from existing routes.

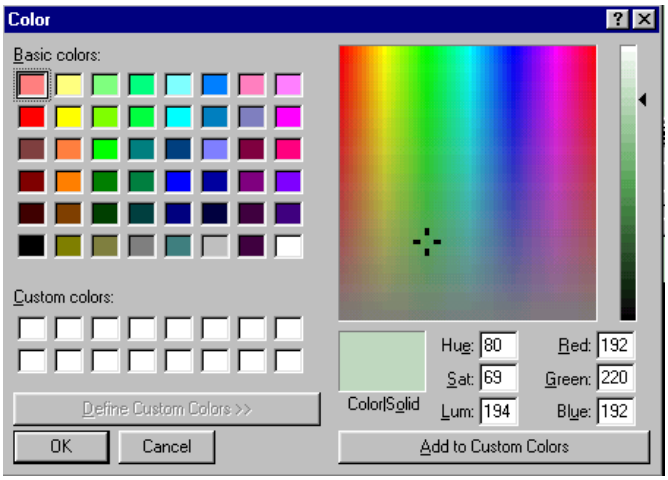
Depot's Maximum Vehicle Size restriction

An error message will be displayed if the Depot has a Maximum Vehicle class smaller than some its vehicles (e.g. if the maximum vehicle size is set to 17T and the depot has 44T vehicles allocated to it) as any Route Planning programs run will not in this case use all the available vehicles. To solve the problem, either change the Maximum Vehicle parameter in the Depot's Warefrom parameters tab, or modify the vehicle fleet accordingly.

Colour Page

To change the colour display of a depot in any mode, select Colour using the LHB.

A notebook containing various call information is displayed as a pop-up. Click with the LHB on the appropriate tab at the top of the notebook to select the required page. Click with the LHB on the Change Colour button and the colour dialog will appear.

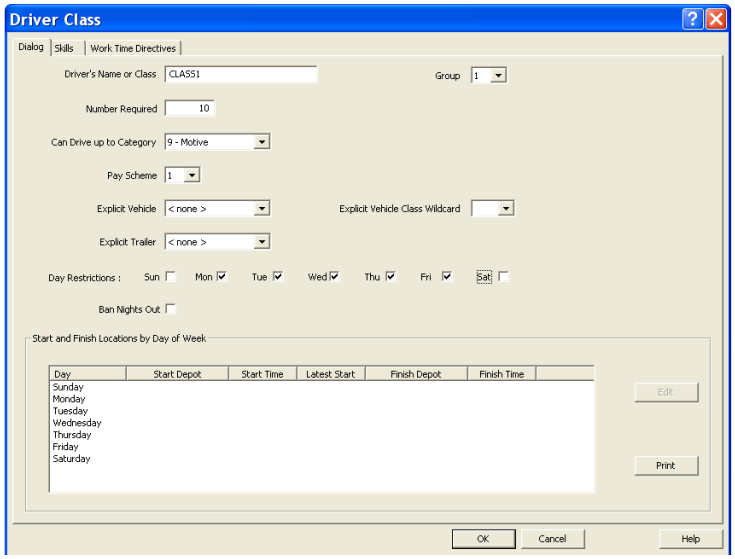


Either

a) select a colour from the given palette of basic colours , or
b) to define a custom colour, click the option button to display the right hand side of the dialog, click anywhere in the matrix and then use the slides at the right of the matrix to adjust the colour attributes (add to custom colours if required)
then click OK to save the choice.

For routes, this will amend the basic colour for that depot; that is those numbers not having an individual setting.

Driver Classes



Individual Drivers or Types of Driver (called Classes in DiPS) may be created using the Drivers Page. Click on New to create a new driver or Class. A Class might be though of as DAYS or NIGHTS for example, with each type having its own defined parameters such as Start Time, Finish Time, Maximum Daily Shift Time and so forth. Use the Driver Details tab dialog to fill in details including Name or Class (which is a required field) and click OK to save. Once it has been established Use Edit to change details or delete to remove a driver/class.

Driver's Name or Class

For an individual driver, enter the required name at this point. To establish a Class enter the required term (e.g. DAYS, NIGHTS, EARLY, WEEKENDS and so on). Up to 20 characters may be used. This is a required field and must be unique.

Number Required

For an individual driver this field is set to 1.
For Classes, the Number Required field may be used to limit the drivers in a Class available in the route planning options. The number of drivers planned for this class at any one time will not exceed this limit. Each driver used will generate a single route number (i.e. the DiPS Rxxx number). More than one vehicle may be used on any route, but a single driver will always occupy a single individual route number. Similarly a vehicle may often be used on more than one route in order to maximise utilisation and optimise vehicle fleet requirements. If more than one class is in use, route numbers will be reserved at the depot for each class. As an example if a depot with route sequence set at 1 has 20 of driver class DAYS, and 20 of driver class NIGHTS, routes using the NIGHTS driver class will have numbers from 20 onwards, with routes 1-20 used by the DAYS drivers.

To ensure double-shifting of vehicles input, set up a Class with a Number Required value higher than the number of tractor units and rigid vehicles at the depot. If there are no Classes set the number of drivers will equal the number of motive units (tractor units and rigids) available.

Day Restrictions

Use a tick in the appropriate box to set the days this driver or class works. Note that the Maximum Number of days that can be worked in the Working Time Directive section will affect this.

Ban Nights Out
Use a tick in this field to stop multiple day routes being planned for this driver class.

Can Drive up to Category

DiPS vehicle classes may be set up to either represent different categories of tractor unit. Set this field applicable to the value entered to allow the drive r or class the ability to use that particular vehicle type.

Pay Scheme

For a more detailed costing output for routes, drivers wage or pay schemes may be introduced. Key in the relevant umber applicable to each class and ensure that the appropriate schemes have been established on the Cost Function Menu. Pay schemes can be used in conjunction with the other Vehicle Costs to produce detailed output for routes. Any number from 1 to 6 may be used to correspond to a Pay Scheme set.

Explicit Vehicle / Trailer and Class Wildcard

For an individual driver, an explicit vehicle may be selected from the list of those available at the depot. This driver will then always use this vehicle in the route planning processes. An alternative is to set an Explicit Class wildcard to force the driver or class to use a particular type of vehicle without specifying which single one.

Group

A value from 1-4 may be set for a driver or class to define their use in the Route Parameters planning algorithms.
The Route Planning Sequence of Driver Groups parameters on the Algorithm keys tab are used in conjunction with Driver Classes set for a depot to define the sequence of their planning in the routing process. Each class can be defined to have a Group of either 1, 2, 3 or 4. These values can then be set to define the sequence in which drivers are planned (or even ignored) during the routing process. As an example if two driver classes were created called DAYS and NIGHTS, with DAYS being set to have a Group = 1 , and NIGHTS =2, by default the DAY driver class would be planned first, since the Group 1 parameter is set to On 1st Driver Pass. If however the parameters were modified to be Driver Group 1 = On 2nd Driver Pass and Group 2 = On 1st, the NIGHTS class would be scheduled first. Furthermore if the Group 1 parameter was set to Omit , no routes would be created with Driver Class DAYS.

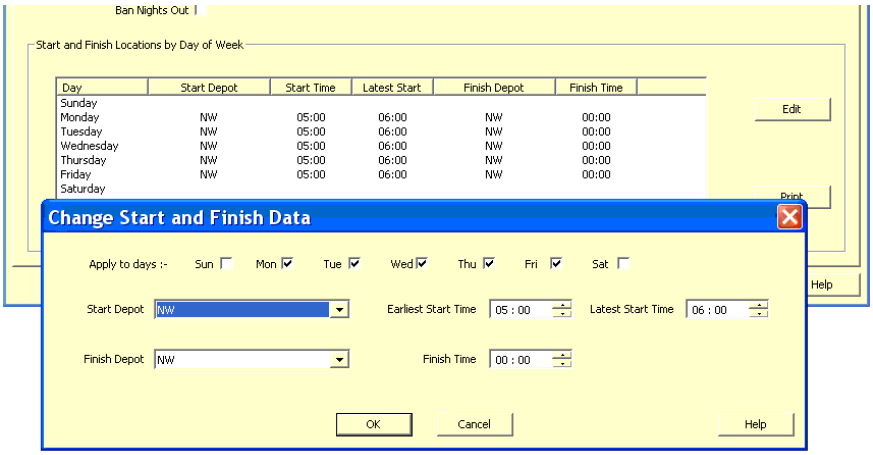
For Algorithm Passes, the ON for Driver Groups specific tick-boxes may be set ON to include the relevant Driver Class in this Pass. As an example if two driver classes were created called DAYS and NIGHTS, with DAYS being set to have an Group = 1 , and NIGHTS =2, by default both driver classes would be included in a Pass since both are set ON. If however the parameters were modified to set tick-box 2 OFF, the NIGHTS class would not be scheduled for this Pass. (It could be added in a later Pass for instance).

Start and Finish Times and Depots for each day

It is possible to define different start and finish times and locations for each day of the week. Use a tick in the appropriate box in the Day Restrictions section to set the days this driver or class can work (subject to any Working Time Directive set).

A table of values is available at the bottom of the screen to show Sunday – Saturday with the start and end parameters for this driver or class for each day.

To amend values, click on the Day name on the left and use the Edit button to display the Change Start and Finish Data Dialog. Set the necessary days for the required settings using a tick in each day, and then set the depots and times.



To force a driver to start at a particular time, set the Earliest Start Time equal to the Latest. Blank fields will use the default depot and times currently set.

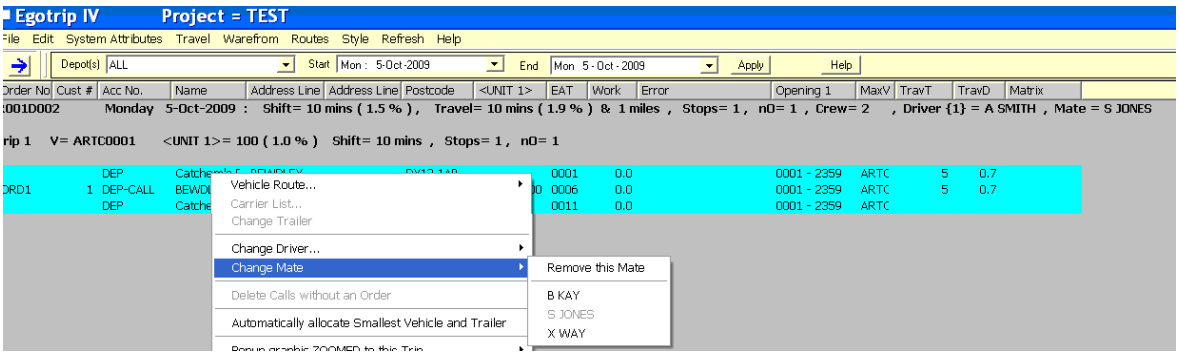
Click OK to apply the changes. Please note that any changes to Drivers are not saved until the OK button on the main Depot dialog is clicked.

Mates

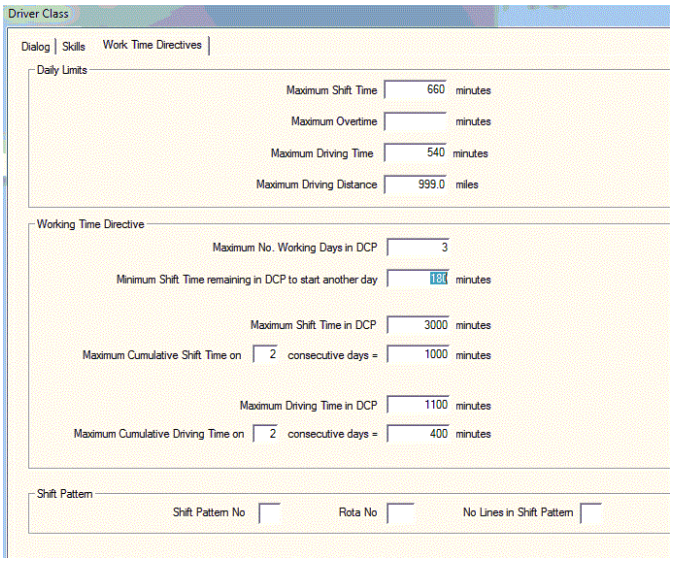
As well as Driver Names, Mate Names can also be added to the database and added to routes planned in the daily scheduling format. To add a Mate to the database, simply change the “Can Drive Up to Category” field on the Driver Class dialog to 99 – Mate. This will allow prevent this resource being used as a driver. It is worthwhile noting that drivers can be nominated as a mate on a route.

Both drivers and mates will be displayed under the Drivers {Mates} tab in Kingpin mode, but mate names will be shown in brackets { } to differentiate between the two types.

When routing, Mates can be added to a route (where the vehicle type used requires more than 1 crew), using the menu option Change Mate. This option will display all available resources (mates and drivers), as well as providing an option to remove the current mate. If crew size requires an additional mate, a second menu item will display for Mate #2.



Working Time Directive Tab



Daily Limits

Driver's Maximum Shift Length value is intended to establish a normal maximum working shift for any driver from any depot entered into a scheduling program. Where the route is extended into 2 or more days the maximum shift time will simply be multiplied accordingly, with a 660 minute max shift being increased to 1320 minutes for a 2 day route, and if Driver's Overtime is used this value may be added to the maximum shift time if conditions are acceptable. It is useful to note that as a maximum limit this should not represent the normal working day but should be a value just in excess of this norm to enable the planning program more flexibility in scheduling. Just because the maximum has been set at a limit does not imply that all routes planned will be for that time. It is likely that an average overall time utilisation value for an acceptable solution will in the region of 90 - 95% of this maximum limit. The maximum shift time also includes any Pre-Shift Allowance or driver's Break. These values are taken as been part of any working shift and are NOT additional times. As the basic shift time is inclusive of any break, low shift times and high break times severely restrict the route building process. This constraint is also greatly magnified if call premises are closed for lunch. In practice it has been found that either a break is specified or lunchtime closing is used but not both since in practice they add together instead of cancelling each other out. **Driver's Overtime Length** in minutes may be specified to be added onto the maximum shift time if parameter criteria are met. The time is intended to be added to long distance routes to allow for more shift time to deliver goods once the vehicle has arrived in a remote area. It cannot be used automatically in the algorithm to extend local routes to provide more time to deliver deferred local calls. The Maximum % Shift Utilisation (1st Insertion) is used to define the % of basic shift time that must be exceeded by the first call if the route is to be allocated overtime. The default value is 85 %. As an example for a maximum shift of 10 hours duration if the first call on the route was 3 hours driving away from the depot and took 30 minutes to unload, the combined shift time of 6 hours 30 minutes, being 65 % of the available shift time (i.e. less than 85 %), would not lead to any overtime being added. However a combined first drop time of 9 hours would mean the overtime value (say 120 minutes) being added to produce a new maximum shift time of 12 hours. In such a way the lower the percentage figure is the more likely the planning program is to add overtime. If overtime is used and multi-day routes are being planned the basic decision making process remains the same but the maximum shift time compared to the time taken for the first drop is inclusive of the overtime value set; that is the shift time used would have to be greater than the sum of the basic maximum shift plus the overtime value for the program to extend the route to another day. **Driver's Maximum Driving Time** limit is used to reflect legislation concerning driving hours for heavy goods vehicles. The default time of 540 minutes per shift is representative of this factor. It will limit the amount of driving within any shift to the level indicated, where a driving time limit is reached before a shift time limit the route building process will cease, and vice-versa. In the case of multi-day routes each shift of each day will have the same driving time limit. **Driver's Maximum Driving Distance** will limit the distance traveled within any shift to the level indicated, where a driving distance limit is reached before a shift or drive time limit the route building process will cease. In the case of multi-day routes each shift of each day will have the same driving time limit. The default value of 999 miles or kilometers is designed to have negligible effect. Reduce the value as required.

WTD - Working Time Directive

Working Time Directive parameters may be set in DiPS as default on the Route Parameters' WTD page or specifically for individual drivers or driver classes in Depot Properties. They are intended to work in conjunction with each other to enable planning programs to produce a schedule that reflect any current or prospective legislative working practices that may be in place within a company's operation. Planning programs will not violate any parameters input, and any manual intervention in the plan will produce errors indicated by yellow highlighting in Route panels, in the Summary section, and in the Driver Bar Charts as detailed below.

The parameter **No. Days in WTD Period** is now used to limit the values defined by setting the number of days to be analysed. When used with driver statistics in daily planning, this is the number of days in the past that any statistics will be considered (i.e. if set at 7, any statistics more than 7 days ago will be ignored).

The **Maximum Number of Days in WTD Period** is set to limit the number of distinct days a driver can work within the planning period. For example if the depot he operates from is open 7 days per week (Sun-Sat inclusive) if this parameter is set to 5, the standard driver will work for any 5 days out of 7. Bank default values in all fields in this section infer no limit.

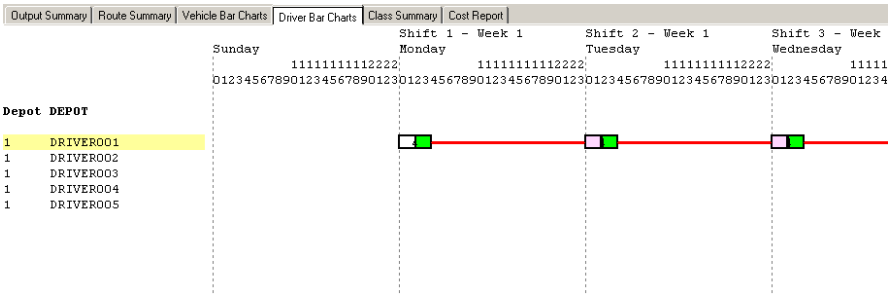
Maximum Shift / Driving Time in WTD Period is intended to establish a normal maximum working week or driving time alone in minutes for any driver from any depot entered into a scheduling program.

The Minimum Shift Time remaining in WTD Period to start another day field is intended to stop short routes being created by planning programs where a few hours may be left at the end of the working period. For example, if a driver has 2 hours left at the end of a week from his maximum 42 hours in DCP after 4 planned days of 10 hours each, setting this parameter at 180 mins would stop a route being created with the remaining 2 hours.

Maximum Cumulative Shift or Driving Time parameters allow a maximum time to be set over a period of days to ensure that a driver is not working for more than an acceptable time over the set number of days. Define both the consecutive days as a number and then the maximum shift. For example 2 consecutive days and 1000 minutes would allow consecutive shifts of 600+400 or 500+500, but not 600+540 or 580+580.

Errors

On Route Summary Section errors are displayed in yellow. On Driver Bar charts errors are displayed in route boxes for each day as appropriate – green = total shift exceeded, pink -= maximum no. of days exceeded, red links between routes = cumulative shift over days exceeded.



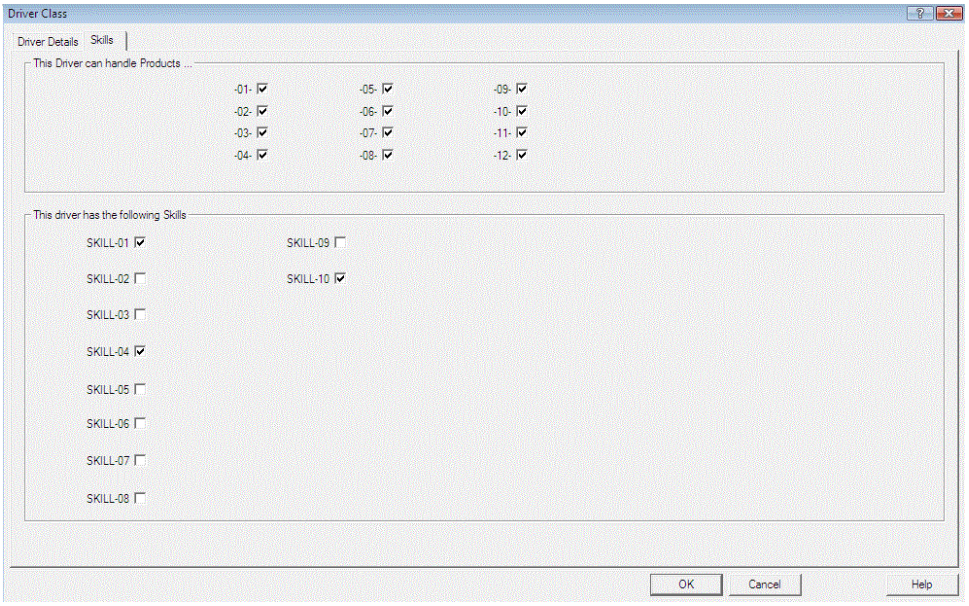
Driver Skills Tab

Handling Products

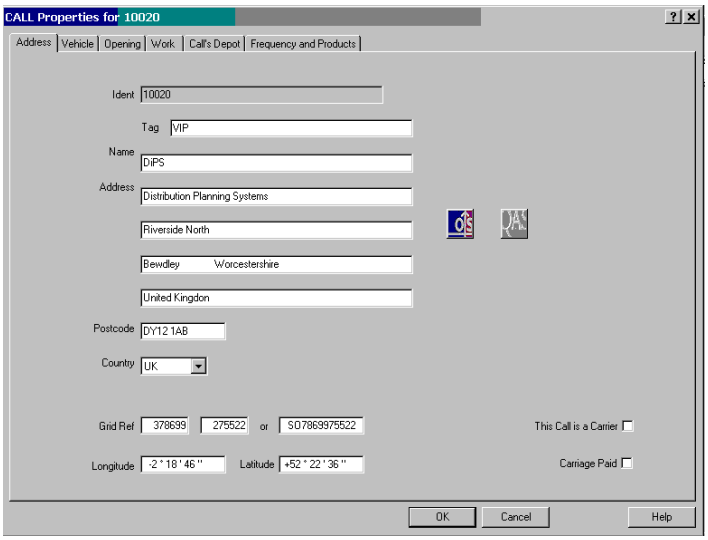
Use a tick in the appropriate box to set the products that this driver can handle when delivering or collecting. Any calls with products not specified will not be added to a route for this driver.

Skills

Use a tick by the appropriate skill box (only those with labels from the 32 available are displayed) to set the skills that this driver has to match those skills required by drops. Any calls with required skills not available will not be added to a route for this driver. Any “Temporary” drivers created automatically will not have any skills set. Please note that for skills to appear, specific labels have to be assigned for at least one of the 32 skills as defined on the Edit, Default Restrictions dialog tab.



Creating and Changing Calls



Point to the appropriate call or depot using the mouse cursor and double-click with the LHB to display the dialog; or on a graphics picture hover over the call to display the pop-up display and click with the RHB to display a pop-up menu. From the list of options select Call details to view Information. A notebook containing various call information is displayed as a pop-up. Click with the LHB on the appropriate tab at the top of the notebook to select the required page. Amend the values as required and then click on the OK button to save the changes or Cancel to quit.
Examples of information would be ADDRESS - a valid grid reference to identify the location; Vehicle access and timing RESTRICTIONS that can also be placed upon an individual call location; and DEPOT to allocate a call to a depot.

Tag Field

In addition to the Ident this 40 character sub-field may be used to allow for sub-grouping of calls within the print / delete / transfer and routing functions.
Any combination of characters or spaces may be input and amended at any time to allow for calls to be processed by matching tag fields following an ALL identifier for an activity. Examples would include the use of the tag XXXX in the tag modifier field of the delete menu which if following the Ident ALL would only delete calls with the XXXX tag; or the tag A1?? in a transfer option between depots A and B, which would lead to all calls at depot A with a tag field of A and 1 as the first two characters with any other characters in positions 3 or 4 being transferred to depot B.

ADDRESS

Address information can be input into both calls and depots in order to aid identification of points, and appears in the following formats: **Ident, Grid Reference, Address Fields 1, 2, 3, 4, 5 (includes Name) and Postcode**

The main purpose in using address information is to provide the delivery point or depot point with a valid grid reference so that the Time/Travel Matrix generation programs can calculate an accurate time and distance between points.

Grid Reference

This field is used to display an Ordnance Survey grid reference. It can be made up of either a single alpha-numeric value or a pair of numeric values (one for easting, one for northing). Examples would be - **SU1234** for an alpha-numeric value, and **221133 433455** for a numeric value (easting northing). The purpose of a grid reference within DiPS is to locate the entity in relation to the road network database. It is important to note that only entities with valid grid references will be used in the planning processes. Values may be entered directly into grid reference fields or the use of postcode or gazetteer databases will produce appropriate values to locate the entity.

Address Fields (includes Name)
Up to 40 characters may be used to define each address line of an entity. There is no limit to the number of entities having the same address lines. If this field is blank and a valid postcode is entered into the postcode field of an entity then the name associated with that postcode will be allocated to this field. In the case of sector level postcodes (e.g. DY8 5xx) the first two lines of address will be completed. It is advisable not use commas, or brackets ( ) in any address lines as the use of these can affect DiPS operations conducted using the macro language, such as re-indexing the MASS file.

In the absence of a postcode, one of the address lines may be used as a lookup with the DiPS Gazeteer to locate the call. Once more than 4 characters are typed into an address line, the lookup function will offer a list-box with all matching locations. Point to the required location and click the LHB to accept it.

Postcode
A postcode may be used to define a grid reference for an entity. The general format of the postcode is AAxxB yZZ, where AA is the area code (one or two letters), xx is the area code number and B is a suffix occurring in densely populated areas (London) where only one letter is used for the area code or one number for the area number. The y is the sector number and ZZ is the final walk/street code. All parts can be used in normal DiPS operation.

Valid postcode input can be for
AREA level - for example DY12. This is the minimum information required.
SECTOR level - for example DY12 1xx. This provides for a more accurate location.

If a full postcode entry is used (DY12 1AB) the information is accurate to the full postcode under normal operation. The postcode entry is cross-checked with the postcode database and the appropriate values are placed in the grid reference fields. You will be warned if the system detects any errors on the input. Messages include :-

Not enough Postcode specified - you must enter an area number (no grid reference produced)
Illegal Postcode area - either the area code or area number is incorrect (no grid reference produced)
Illegal sector number - area level postcode grid reference is used
Missing Space between - cross-check has detected the lack of a space between sections
Missing suffix letter - area requires a suffix letter

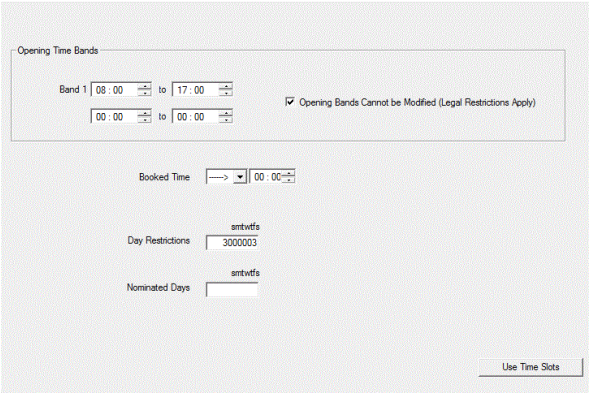
Carriage Paid
The Carriage Paid Call can be used to identify certain calls and prevent them from entering any of the planning programs. It is particularly useful for nominating isolated call points that would normally not be considered for routing. In this instance for daily routing, any orders for the call are automatically added to the Customer Collect List for a depot. By default all calls have the field set to blank.

International Country Code
As new calls and depots are created on the system, they are allocated a default country flag (which appears next to the ident field) that is used to identify the relevant postcode or gazetteer file to locate them. Country codes may also be changed after a call or depot has been created.

Longitude and Latitude

As there is no common grid system (e.g. OS National Grid for UK) for the whole of Europe, the International DiPS system uses Latitude and Longitude (or Lat/Lon) to locate points. Two separate fields (one for Latitude and one for Longitude) are used and these appear in the form of: Degrees (+ for east of zero , - for west of zero), Minutes, Seconds. Other locating facilities such as the Gazetteer or Postcode lookup will provide grid references in this format.

RESTRICTIONS



Delivery or operating restrictions may be specified in terms of :-

Opening Time and Closing Time for one band; Opening Time and Closing Time for a second band; **Booked Delivery Time** for specific delivery times; **Day Restrictions** which govern days and opening bands that are available; **Nominated Days** which may be used to indicate acceptable delivery days; **Vehicle Restrictions** which govern vehicle access and loading requirements; **Extra Time** to allocate additional waiting time at the location
Work Difficulty Class to modify individual work rates per location; **Crew Size** to indicate any vehicle manning requirements; Opening Bands are Arrival Times Only to set opening times for vehicle arrival; and **Delivery Slots**, which may be used to identify various different restrictions for a single call location.

For times a spin button is used to increment the hours or minutes accordingly. Alternatively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before.

The Opening Bands cannot be Modified field is used to enable the identification of Legal Restrictions or other issues that mean the location's times must be adhered to under any circumstances. This logic can cover issues such as precinct deliveries, legal restrictions, access rights and so on. If the Off Day delivery flag is set to enable vehicles to at any time if arriving on a day that is not nominated, the delivery times indicated here will be adhered to on any day. Any attempt to modify these times by way of a data import (via macro interface or spreadsheet) will be ignored whilst this is set. To change times, simply un-tick this parameter and click the OK button to save.

Opening Time of 1st Band

This field uses the 24 hour clock notation of HHMM to define the opening time of the first band of opening. For calls this is the earliest time a vehicle may arrive to start unloading, for a depot it defines the earliest time a vehicle may leave the depot. It is quite valid to specify values in the first band of opening fields, so defining only one band of opening per day for any entity. For midnight use 0000 (which will produce a blank field). For call opening times always ensure that at least one band of opening lies within the shift opening times of the depot they belong to. For depot entities it is possible to define two distinct operating shifts using Shift No.1 and No.2. However it is useful to remember that all vehicles leaving the depot during Shift No.1 will return within that defined band. It is more normal to specify only one shift for a depot, for example values of 0001 and 2359 will simulate a 24 hour depot operation (remember to shut the depot for at least one minute every day so as to allow for the correct calculation of day restrictions).

Closing Time of 1st Band

This field uses the 24 hour clock notation of HHMM to define the closing time of the first band of opening. If only one opening band has been defined, for calls this is the latest time a vehicle may leave after finishing unloading If two bands of opening are used it may be used to simulate lunchtime closing in conjunction with band two. For example if the closing time of band one is 1200 and the opening time of band two is 1300, the routing package will not allow delivery during that time. For a depot the field defines the latest time a vehicle may arrive back at the depot at the end of its route. It is quite valid to specify values in the first band of opening fields, so defining only one band of opening per day for any entity. For midnight

use 2400. For call opening times always ensure that at least one band of opening lies within the shift opening times of the depot they belong to.

Opening Time of 2nd Band

This field uses the 24 hour clock notation of HHMM to define the opening time of the second band of opening. It is used in conjunction with opening times in the 1st band. For calls it may be used to simulate lunchtime closing (if the closing time of band one is 1200 and the opening time of band two is 1300, the routing package will not allow delivery during that time), or in conjunction with day restrictions to simulate early closing or late opening. For example if the two band opening times are 0900-1200 and 1200-1700 it is possible to specify a closure of band two (or band one for late opening) on any particular day to prevent a vehicle being at the call after 1200. It is quite valid to specify values in a band of opening fields, so defining only one band of opening per day for any entity, but in this case it is necessary to use band 1. Always ensure that any specified bands of opening do not overlap each other.

Closing Time of 2nd Band

This field uses the 24 hour clock notation of HHMM to define the closing time of the second band of opening. If two opening bands have been defined, for calls this is the latest time a vehicle may leave after finishing unloading. For a depot the field defines the latest time a vehicle may arrive back at the depot at the end of its route on Shift No.2 operation.

Booked Time and Codes

It is possible in the DiPS system to input either a specific booked time for a call or an order, or to use a pre-defined code that references a table of booked time codes for a time window.

Booked Times - This field is used to input a fixed delivery time that must be met for each visit to the delivery point. If required temporary overriding changes to call opening times are made during the route planning process to ensure that the booked time lies within the call opening bands. 24 hour clock notation is used to differentiate between am and pm periods. A value of 0000 will reset the booked time to be blank. To allow for a window around the booked delivery time to be accounted for when scheduling vehicle (rather than the more restrictive time), a tolerance value may be input to give a global window around the booked time. Different values may be specified for before and after the specific book time. It is recommended that if booked times are to be employed to any great degree, some tolerance be set in order to allow the scheduling process reasonable flexibility in combining deliveries together in feasible routes.

Day Restrictions

The day restrictions field is a seven digit number designed to control opening times in conjunction with the bands defined. Each digit represents a day of the week in the sequence

SUN - MON - TUE - WED - THU - FRI - SAT

The value of each digit is determined from the following codes :-

0 - Open for both bands 1 and 2 (i.e. all day)
1 - Closed for band 1 and open for band 2
2 - Open for band 1 and closed for band 2
3 - Closed for both bands 1 and 2 (i.e. all day)

If only one band of opening is defined then all references to band 2 will be ignored.
As an example a value of 3102003 for band 1 = 0900-1300 and band 2 = 1300-1700 would define the following -

Closed all day (both bands) on Sunday and Saturday	
Closed band 1 and open band 2 on Monday	1300 - 1700
Open all day (both bands) on Tuesday/ Thursday / Friday	0900 - 1700
Open band 1 and closed band 2 on Wednesday	0900 - 1300

For input from a spreadsheet package use the numerical value as you would expect to see it displayed. The system will account for leading zeros in constructing the seven digit number it requires.

Nominated Days

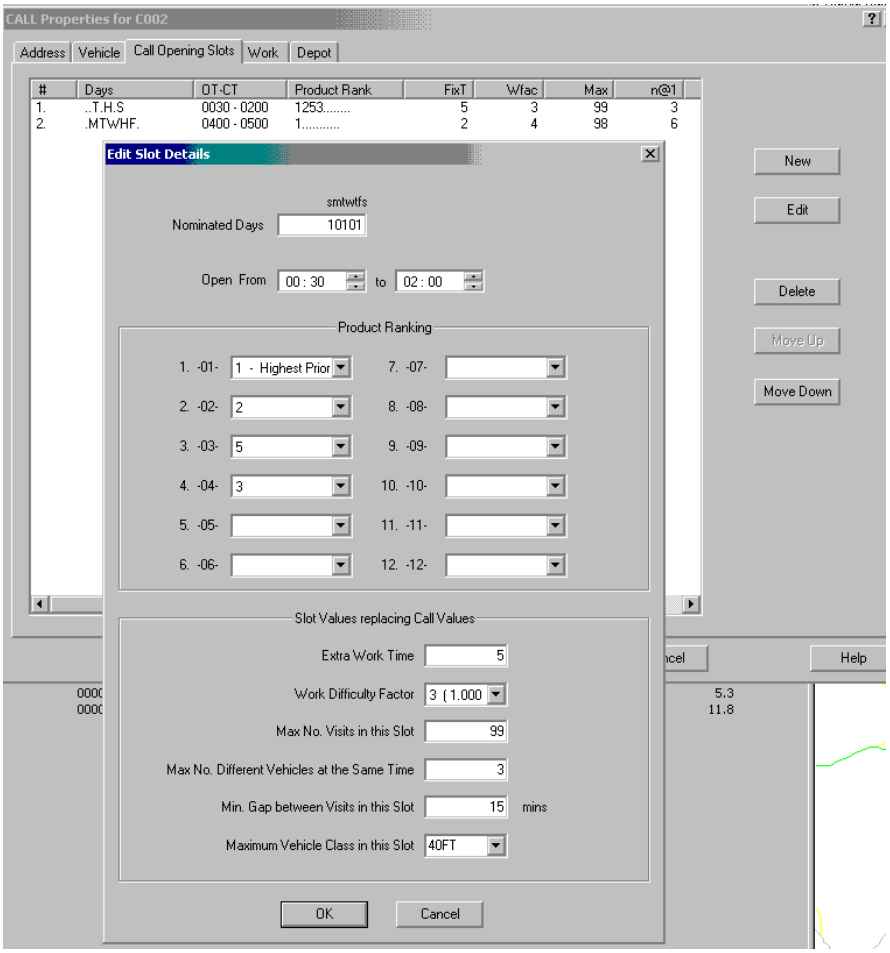
The nominated days field is a seven digit number (similar to day restrictions) designed to control opening days in conjunction with the time bands defined. Each digit represents a day of the week in the sequence :-

SUN - MON - TUE - WED - THU - FRI - SAT

The value of each digit is determined from the following codes -
0 - Not nominated for delivery (no deliveries to be done that day)
1 - Nominated for delivery (deliveries to be done in any opening time band that day)
The main use of the field is to conduct comparative "what - if" scenarios planning deliveries one way with day restrictions in place and another using the nominated days for delivery. To switch nominated day parameters on within a scheduling run, set the Use Nominated Days rather than Day Restrictions field on the VANGUARD ALGORITHM screen to YES. By default call Day Restrictions are used by the scheduling programs.

Use Time Slots - Delivery Slots

Clicking on the Use Time Slots option enables the Delivery Slots logic allowing differing time bands for delivery or collection to be set up for a single call location for different time periods throughout the week. It is used wherever the more simplistic opening restrictions are not sufficient or different products are delivered at different times throughout the day. Slots may be established with product availability, time windows, and opening restrictions for each. This facility is also available for individual orders in daily scheduling operations.



For a delivery slot to be used the Maximum Deliveries per Window field must be set at a value greater than ZERO. It will default to a blank which also be equivalent to a zero value.

Delivery or operating restrictions may be specified in terms of :-

Nominated Days which may be used to indicate acceptable delivery days
Opening Time
Closing Time
Product Ranking
Fixed Work Time
Work Difficulty Factor
Maximum Deliveries per Window
Maximum At Once
Gap to Next
Maximum Vehicle Class

The nominated days field is a seven character field designed to control opening days in conjunction with the slots defined. Each bold letter represents a day of the week in the sequence S**U**N - **M**ON - **T**UE - **W**ED - T**H**U - **F**RI - **S**AT

Opening Time

For opening time the field uses the 24 hour clock notation of HHMM to define the opening time of each delivery slot. This is the earliest time a vehicle may arrive to start unloading. For midnight use 0000 (which will produce a blank field). For call slot opening times always ensure that at least one band of opening lies within the shift opening times of the depot they belong to.

Closing Time

This field uses the 24 hour clock notation of HHMM to define the closing time of the slot. For midnight use 2400. By default the Opening Bands are Arrival Times Only parameter is set to YES, which means that for each slot the closing time band is the latest time a vehicle may arrive, and thus leave after the closing time indicated.

Product Ranking

Any value between 1 and 9 (inclusive) may be used to prioritise the products required for delivery in descending order. A value of 1 will make any product the highest priority with lower priority products being available to fill vehicle capacity if required. Products with a ranking value of more than 1 will **not** be considered for starting routes in a slot, merely as fillers for any routes already created. Only product with a 1 ranking will cause a route to start. A value of 0 will not allow delivery or collection of that product in that time slot. A twelve digit reference is employed so that each product has a relative priority number. In its simplest form the numbers 1 and 0 may be used to allow or disallow product as in the example for slots 1 and 2 below.

	123456789012		
slot 1	100000000000	-	only product 1 may be delivered in slot 1
slot 2	011000000000	-	products 2 and 3 but not product 1 or any others may be delivered in slot 2
slot 3	000123000000	-	for slot 3 product 4 has the highest priority followed by products 5 and 6

Fixed Work Time

This field represents an additional fixed time in minutes to be added to any work time calculated for the visit, allowing for waiting/queuing. This is generally used as a call slot specific value, with normal work values been specified as product or unit data parameters. It may be used to provide time for a trailer swap at a slot if the model is employed for trunking analysis.

Maximum Deliveries per Window

For a delivery slot to be used the Maximum Deliveries per Window field must be set at a value greater than ZERO. A blank value may be used to turn the slot off temporarily if required. This field is otherwise normally only employed when modeling trunking operations, and is used to restrict the number of deliveries or collections that may be made in the slot if multiple visits are necessary.

Maximum At Once

This field is normally only employed when modeling trunking operations, and is used to restrict the number of deliveries or collections that may be allowed to be processed at any one time in the slot if multiple visits are necessary.

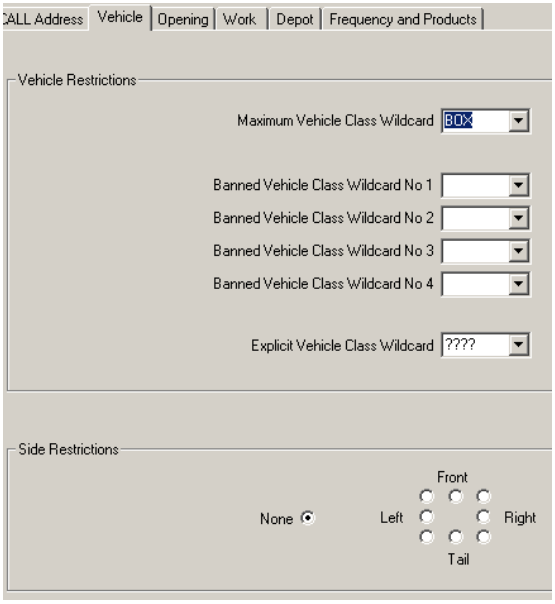
Minimum & Maximum Gap to Next

These fields are employed to provide a fixed time in minutes between vehicles **leaving and arriving** at the location. The minimum value will force a gap to be left between the initial vehicle leaving and the next arriving, whilst the maximum can be used to prevent a long wait time between visits.

Maximum Vehicle Class / Explicit Vehicle Class

The Maximum Vehicle Size field is used to specify the biggest vehicle that may access the delivery point during the specified slot. The system will compare the first unit of capacity of the class in deciding whether it be allowed access. Use any class identifier previously set up using the Vehicle Class option. It is often be used where precinct restrictions prevent delivery on a large vehicle after a certain point in time. If this is the case specify the two delivery slots giving appropriate times with the smaller vehicle size restriction on the second slot. If blank the maximum vehicle size restriction given on the call screen will be employed. The Explicit Vehicle Class Wildcard field represents a method of ensuring particular vehicle classes **only** are planned into a particular slot. The ?? wildcards can be used to include a variety of vehicle types – as an example Vehicle Wildcard = ??FT would include plan vehicle classes of 24FT, 33FT or 40FT. A blank or default value (????) infers no extra restriction for this slot and the call's value will apply.

For the purposes of route print formats, Slot numbers are given to the pre-set slots for each Call. The first established slot will be no.1 and so forth. These are not necessarily allocated in time of day order. The Slot Number column is referred to as **Sl** and appears in the Traffic Sheet , Full Route, and List of Calls prints. It is also maintained in the EGOTRIP program for manipulation if required. On the List of Calls print the appropriate slot times and day restrictions are also shown. Where slots are not in use the column will remain blank.



Vehicle Size Restrictions / Explicit Vehicles

The Maximum Vehicle Size drop down box is used to specify the biggest vehicle that may access the delivery point or depot and displays all current vehicle types for selection using the mouse LHB. The system will compare the first unit of capacity of the class in deciding whether it be allowed access. Use any class identifier previously set up using the Vehicle Class option. Call vehicle size restrictions (Maximum and Banned) can also be manually typed with ??? wildcards to exclude any vehicle type which match the criteria given and can include ? in any of the four available characters. The system will provide a cross-reference to any value to ensure that it matches at least one existing vehicle class. Four wildcards (????) to exclude all vehicles from a call cannot be used. Any attempt to input such values will lead to an error message with the restriction being set to the Default Restrictions maximum specified. Examples of valid fields would be **A???** (excluding classes such as AR22, ARIG, and AB); or **?2??** (excluding classes such as AR22 and ARIG). For route planning purposes a wildcard value in the Call's Maximum Vehicle Size field will set the restriction to the **BIGGEST** vehicle type that matches the criteria. The Explicit Vehicle Class Wildcard field represents a method of ensuring particular vehicle classes **only** are planned into a particular call. The ?? wildcards can be used to include a variety of vehicle types – as an example Vehicle Wildcard = ??FT would include plan vehicle classes of 24FT, 33FT or

40FT. A blank or default value (????) infers no restriction. If using this field please ensure that the Maximum Vehicle class and the explicit class don't conflict.

Banned Vehicle Classes

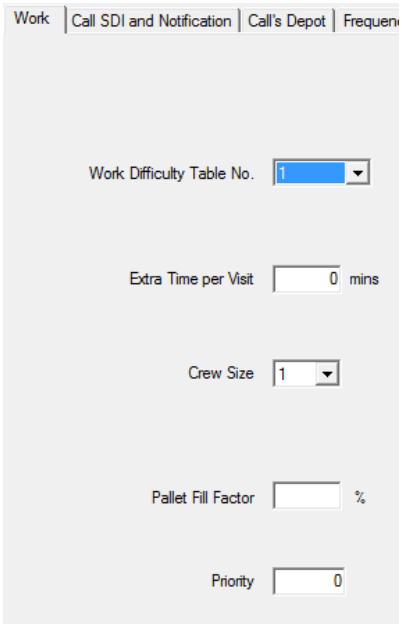
For a call entity it is also possible to specify up to four smaller classes that are not allowed access to the call. The use of the maximum vehicle field already excludes any larger classes.

Side Loading restrictions

A special feature of DiPS is the ability to establish additional loading restrictions for customers dependent upon loading position on the delivery vehicle. Used in conjunction with loading by side of vehicle parameters, the appropriate radio button is clicked

Call Work Parameters

Extra Time



This field has two main meanings in DiPS according to the entity type being updated. For depots, it represents a fixed time in vehicle minutes for turn-round in between trips of the same route, allowing for unloading/re-loading/driver de-brief etc. This may also be used in conjunction with a Depot Rate to allow for variable turn-round time dependent upon product or vehicle unit values. For calls or klusters, the time represents an additional fixed time in minutes to be added to any work time calculated for the visit, allowing for waiting/queuing. This is generally used as a call specific value, with normal work values been specified as product or unit data parameters.

Work Difficulty Factor or Table

This value is used to cross reference one of the Work Difficulty Factors or Tables that may be defined. These values will modify the variable work rate at collection/delivery points and depots. For example if a class of 2 corresponds to a pre-set Work Difficulty Factor of 0.500, the variable work element will be halved accordingly. For a depot this factor will affect the variable turn-round time if set. By default all factors are set to 1.000 (i.e. no modification) and the class is set to 1. For more detailed work time calculations, Work Difficulty Tables can now be established and employed rather than the standard work class values. Work Difficulty Tables allow the entry of individual factors for each of the twelve products by crew size on the vehicle.

Crew Size

This field is only used where particular vehicle classes have been established with either a one or a two man crew size. It may be employed in conjunction with the Mixed Manning Levels field on the VANGUARD ALGORITHM screen to prevent the mixing of calls requiring different crew sizes on any route. The variable work time at a call point is also divided by the crew size to obtain a new value. For example, a delivery with a calculated elapsed time of 20 mins per visit would be re-factored to be 10 mins if it were delivered on a vehicle with a 2 man crew.

Pallet Fill Factor

The Pallet Fill Factor is used to calculate the actual number of pallets to be delivered to certain calls that for any reason cannot accept the normal conversion factor from products to pallets (or whatever VEHICLE UNITS are specified). For example in the case of a palletised operation, a particular call may not be able to accept delivery of the normal pallets because of height restrictions in racking systems. In such a way the Pallet Fill Factor can be set to re-calculate the number of pallets due for delivery taking into account the new required maximum height. A customer has a height restriction of 6ft - normal pallet maximum heights are 9ft i.e. 6/9) in order to produce the actual number necessary. In the case of a delivery of 10 pallets (at normal height of 9ft), the actual number would be 15.

The factor can be used in all types of delivery, not just palletised operations. The factor will increase all calculated vehicle units to be delivered, whether they be pallets, boxes, or cartons.

This field may also be used in conjunction with the Extra Units For Pallets parameter to add additional vehicle units for palletised deliveries. In this case where pallets are not to be factored at all a value of 100 % would not factor the number of pallets but would allow the required additional units to be added to that trip.

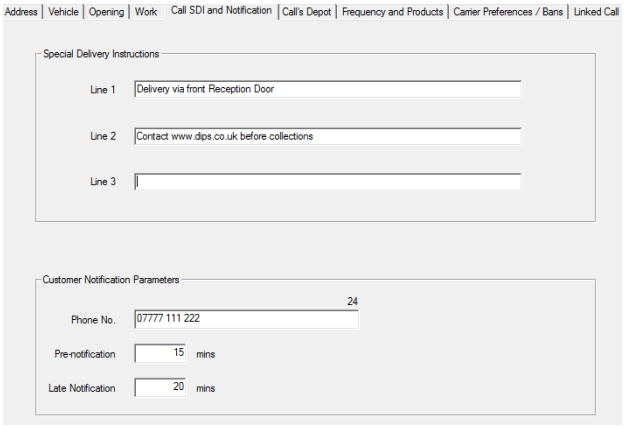
Priority

Priority values from 1 - 96 may be used to promote calls within the routing program. An entity with priority set to 90 is ranked above a value of 34 for instance. By default all values are set to blanks (zero). Certain values have special meanings within the routing programs. 97 will force a call to be the first drop on a route. 98 will force a call to be the last drop on a route. 99 will force a call to be first and last on a route (to simulate a drawbar link)

Values of 200+ (i.e. 2xx) will create a 2-day route for the delivery.
Values of 300+ (i.e. 3xx) will create a 3-day route for the delivery and so on.

Priority values can often be useful in routing troublesome calls that always seem to be deferred in vehicle scheduling runs. A value of 10, for example, would promote the call to the top of the routing list, thus ensuring it be placed on a route if at all possible. They can also be used in conjunction with Route Parameters Algorithm Passes to route certain calls only.

SDI - Special Delivery Instructions



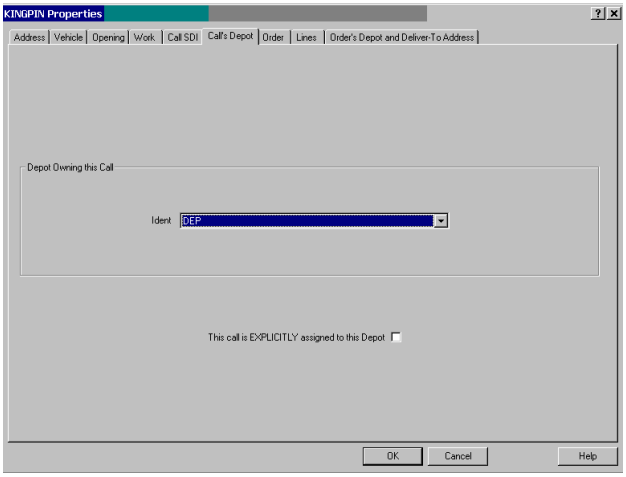
Up to 240 characters (in 3 lines) may be employed as text for any information specific to that delivery location. Since they are printed on traffic sheets and driver documentation, uses made of this facility in the past have included access information (e.g. goto gate 9 at rear exit), phone numbers and contact names.

To input or change information simply type and/or delete the text as required. The information recorded will be saved onto the call record and will not disappear deleted once orders are removed.

A customer Phone No. (or other contact information) and two notification parameters enable any 3rd party software to send arrival time information and further notifications based around two specific before and after times.

Information can be entered manually or imported from spreadsheets and interfaces as required. The three fields can also be exported using the Routes Menu option Export Routes to Access Database or as Text. Relevant columns have also been added to display the information whilst in the DiPS program itself. As the Phone No. is a text field, other information such as email addresses can also be employed if required.

As an example of use, the phone no. may be used to provide a SMS message regarding delivery arrival time in the first instance, with the Pre Notification time being used to send a further message when the vehicle is for example 10 minutes away or the Post Notification tolerance time being employed if the vehicle will arrive say more than 15 minutes late. Depot information could be used to notify depots of any late returning vehicles.



DEPOT

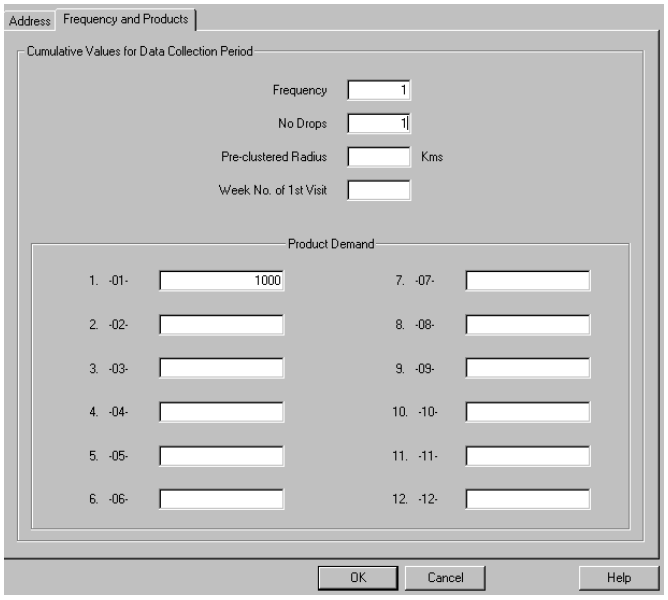
The Depot page can be used to move a call to another depot. Using the drop-down menu select a new depot using the LHB and then click on OK to close the notebook and allocate the call to the new depot.

The Explicit field is used to prevent re-allocation of this call using the Warefrom menu option unless specifically requested when the function is started. In effect the call will always be served by this depot**.**

FREQUENCY and PRODUCTS

<u>Frequency for Strategic Studies</u>

This field provides the call with the required number of visits in the Data Collection Period (DCP). The value will be factored by VANGUARD and WAREFROM runs in the ratio of the run length in days to the DCP. For example if the DCP = 28 days and the specified run length is 7 days, all frequencies will be factored to 25% of the original values (4 would become 1 etc.). If after factoring the frequency equals zero, then it will be set to 1. This factoring is confined to the running of the program and will not affect the value specified on the call screen permanently. For studies where the DCP is 28 days and length of run = 7 days, frequencies of either 1, 2, 3, or 4 will all be factored to a temporary value of 1. This will have the effect of planning all calls in that week irrespective of their overall picture within the 4 week period.



The frequency value is also used by the planning programs to calculate the quantities to be planned on each visit. A total product demand of 20 units with a delivery frequency of 4 will produce a total of 5 units to be delivered on each of the 4 visits in the DCP.

Product Demand

Product demand is used by the strategic planning programs in to calculate the amount to be delivered to that point. The figure must be input as a total and not as a quantity per visit. Positive values denote quantities to be delivered. Negative values represent collections. Deliveries and collections may be planned simultaneously by DiPS.

The call frequency value is used by the planning programs to calculate the quantities to be planned on each visit. A total product demand of 20 units with a delivery frequency of 4 will produce a total of 5 units to be delivered on each of the 4 visits in the DCP. A maximum of 12 different product types can be used at any one time, but it is advisable to keep the study as simple as possible and use a single product where practical.

The quantity of each product determines the Vehicle Units to be delivered at each visit. Using the Product to Vehicle Unit conversion factors set on the Unit Data screen, the totals are calculated for each product with a valid (non-zero) factor.

If call product 1	=	200	100
& product to vehicle unit factor	=	1.000	0.010
& call frequency	=	10	1
then , vehicle unit per visit	=	20	10

No. Drops

This field only need be specified if the call is to represent previously clustered data; that is the call represents an area of demand rather that an individual customer or delivery point. As an example, a call may be created to account for the Birmingham area in a 7 day plan. The number of visits (frequency) may be once a day (= 7), but the total number of drops would be 21 if the vehicle completed on average 3 per visit. The No. drops value is used within the planning programs to allow for extra time / distance to more accurately account for the additional activity.

Pre-clustered Radius

The radius in kilometers is used by the DiPS to allow for additional distance / time considerations for call points. It may be used in conjunction with the No. Drops field. The value is also used by the KLUSTERS program to evaluate the minimum radius of a cluster containing this call.

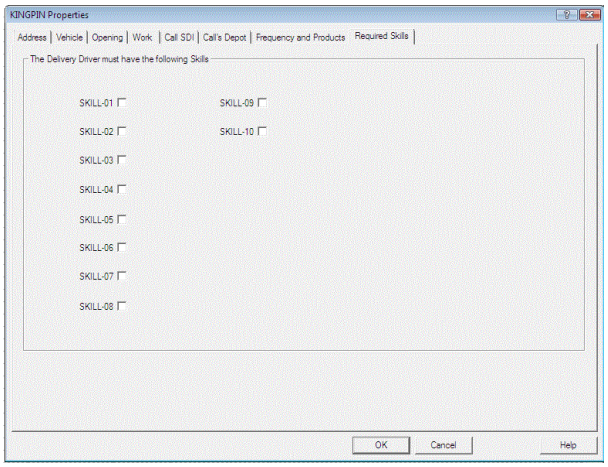
Week Number of 1st Drop

This file is used in conjunction with a study length (Data Collection Period) of 4 weeks (or 28 days), to force the VANGUARD program to route the first visit to that call in a particular week of the plan. In such a way a call with frequency = 2 and Week Number of first drop = 3 ; would receive its 2 deliveries in weeks 3 and 4 of the plan.

Margin per Visit

A monetary figure (up to 2 decimal places) may be input for each call to represent the value of each visit (e.g. profit or revenue). This value can then be used to display the profitability of a route when compared to the appropriate vehicle cost figures.

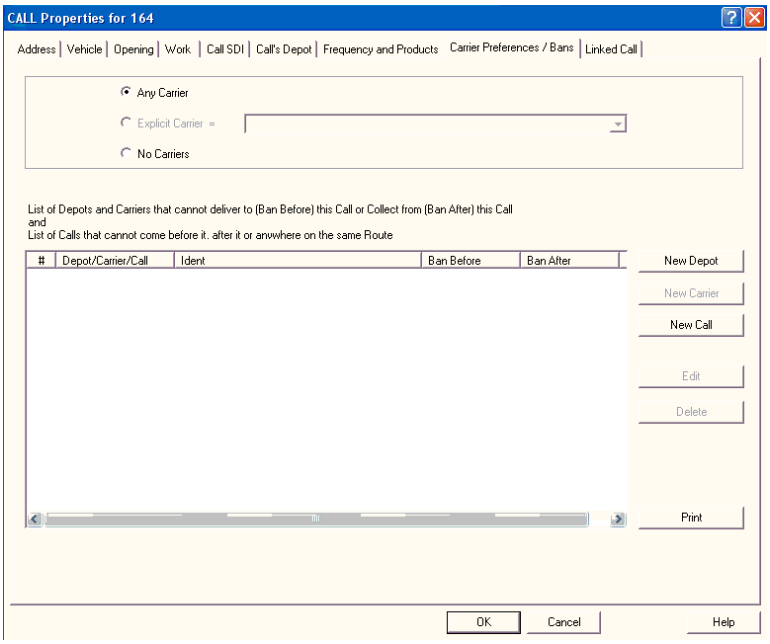
SKILLS REQUIRED



The Skills function allows certain attributes or “Skills” to be associated with drop points and drivers to ensure once the drop is placed on a route, the driver allocated is adequately trained to undertake the activities involved. Examples could be hazardous products, installation work, or specialised delivery equipment. The Skill Labels tab on Edit , Default Restrictions is used to activate and describe the specific skills required by drops. After a label has been entered for at least one skill, the Skills Required pages will appear on the calls, orders or shipments dialogs.

To set required skills for a drop, simply tick the appropriate label and click OK to save. Once skills have been assigned to delivery data, a specific named driver or driver classes must be established for these to be placed on routes. Any "Temp" drivers created automatically by DiPS will not have any skills assigned and will not be able to complete those jobs. The suitability of a driver to complete a job with skills assigned will be governed by his capability to do AT LEAST those skills required (i.e. a driver may be trained with more than the necessary skills for a certain job).

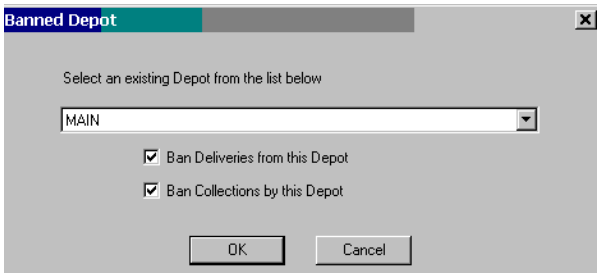
Carrier Preferences & Banned Calls/Depots

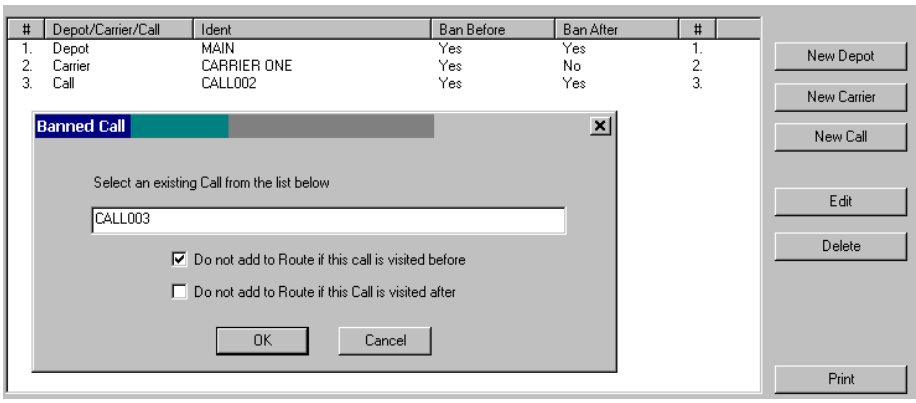


Initially it is possible to ensure that the call can be done by any carrier, a single explicit carrier or never be done by a carrier and must always go on a vehicle route. This can be loaded from spreadsheet using the >C11 field.

To be more specific, a call may have a range of banned carriers, calls or depots to aid in the routing process; input using the appropriate button on the Carrier Preference & Banned screen.

For a Depot or a Carrier, the entry dialog is basically the same – offering a choice of existing carriers and depots, and the option to ban deliveries and/or collections. Banning a Carrier would stop any orders for this call being allocated to that Carrier List in daily scheduling operations. Banning a depot would prevent visits by any vehicle from the depot in question.





For a call, the entry field provides space to add an existing call ident (which is verified on OK), and choose whether this call cannot go on a route before or after the Banned Call. If both are selected, the Call will not be put on the same trip as the Banned Call indicated.

Use the Edit and Delete button to modify existing entries accordingly.

<u>Loading Banned Depots/Carriers/Calls from Spreadsheet</u>

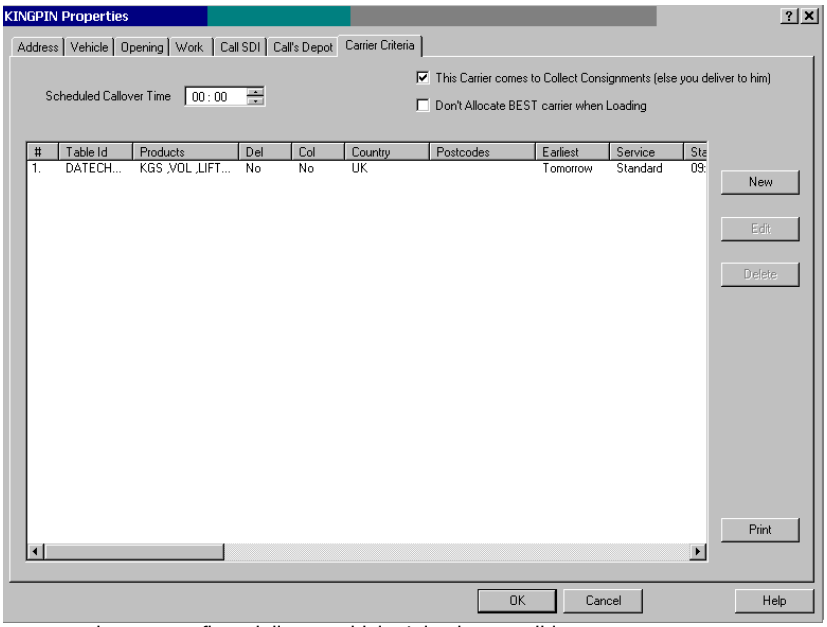
Banned entities for Calls can be loaded using the >J column header. All idents must already exist on the database.
The relevant values are -

>J1 Call Ident (must already exist on MASS file)
>J2 Banned as Previous Call / Depot / Carrier Ident (ident must already exist)
>J3 Banned as Next Call (ident must already exist)
>J4 Banned as Both Next & Previous Call (ident must already exist)

As many >J2, >J3 and >J4 columns as necessary may be entered for each >J1 Call Ident row.
The >J2 column is used for adding individual banned Depots or Banned Carriers that do not for part of the Call chain.

Carrier Calls

For Daily Route Planning the Carrier Call can form the basis of a complex automated decision-making process for cost-effective planning considering dedicated vehicles, parcel carriers, and third-part hauliers. To create a Carrier, use the carriers tab in Kingpin mode. You will need to create a carrier Ident as well as an initial unique Cost Table ident (see next section) at the initial dialog. The same basic call parameters apply in terms of address and restrictions. The additional data available for the call to function as a carrier is comprised of a number of tables. Once set carriers will also enable carrier routes (or lists) to be created either manually by choosing the New Carrier List option or dynamically from the Dayplan program by setting an “Allocate to Carriers” algorithm pass in Routes, parameters dialog.



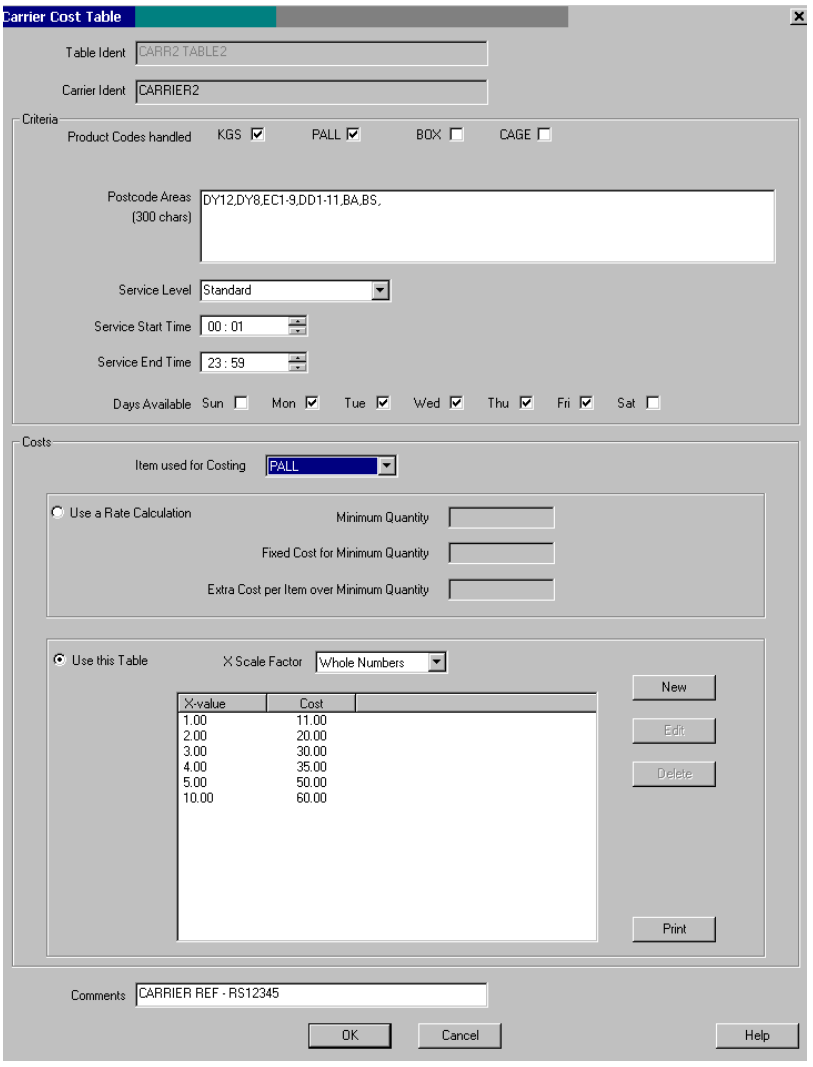
The Carrier Call can be used to identify certain calls and prevent them from entering any of the planning programs. It is particularly useful for nominating isolated call points that would normally not be considered for routing, either due to their location or to the amount of product to be delivered.

Carrier Criteria

Other parameters available for carriers are set to include the ability for the carrier to accept orders with a booked delivery time, and to pick-up goods (or else it will be routed along with all the necessary orders onto a fleet delivery vehicle. It is also possible to set a Scheduled Callover Time for the Carrier to represent a point in time after which no additional orders may be added onto this carrier list. Using the Don’t Allocate Best Carrier on Loading field will remove the carrier from any selection process to choose the best carrier for an order, but still leave it available for other orders to be dragged on manually.

For a more detailed costing and selection process, Carrier Cost Tables may be set up : either from the Carrier Call criteria screen using the New, Edit and Delete buttons, or from the Table section in Kingpin Mode. Once established they will appear in the list-box.

The Print button will list the details of all tables for this Carrier.



Carrier Cost Tables

Using the New button or the Create a New Table menu option will cause the Table dialog to appear as below. This enables the postcodes, products, and costs to be input or amended as required (Edit button). Up to 40 characters may be used for a Table ident and existing carriers will appear if using the Table section. Once a new table has been created, certain information is essential – most notably the Product Codes handled in the Criteria section and Item used for costing in the Costs section.

Criteria

Products Handled

From the 12 product types set, use a tick to indicate that this Cost table may be used to allocate orders with these product types to the carrier call. For example in the picture shown, orders with KGS and PALL may be allocated, but any orders with BOX and CAGE are not included for this Cost Table’s calculation.

Postcode Areas

This field indicates the Postcode area that this table will cover. The default value is ALL, but individual areas may be input as necessary. Postcode districts (eg BA,BS,G etc) can be used, as well as individual areas (eg DY12,DY13) or ranges separated by a – (eg DD1-11). Use a comma to separate different entries. The character ! can also be used to imply all areas apart from those specified (i.e. ALL,!DY,!B,!WS would mean every postcode except DY,B and WS).Even full postcodes may be used if required.

Valid entries would include -

AB,	means all of AB
!AB,	means none of AB
AB1,	means AB1 only
AB1-10,	means all in AB1-10
AB1-10,11-20,	means AB1-10 & AB11-20
AB1 1,	means all in AB1 1 only
AB1 1,6,	means all in AB1 1 and AB1 6
!AB1 1,!AB1 6,	means none of AB1 1 or AB1 6
AB,!AB52-56,	means all of AB except AB52-56
AB,!AB1 1AA	means all of AB except AB1 1AA

Service Level

Service levels of Standard, Booked and Timed are available. Standard will cover all normal orders, Booked will allow orders with a booked time to be included, and Timed will allow orders with a timed delivery window to be included.

Service Start & End Times

The start and end times will govern when this carrier will deliver orders allocated by this table.

Days Available

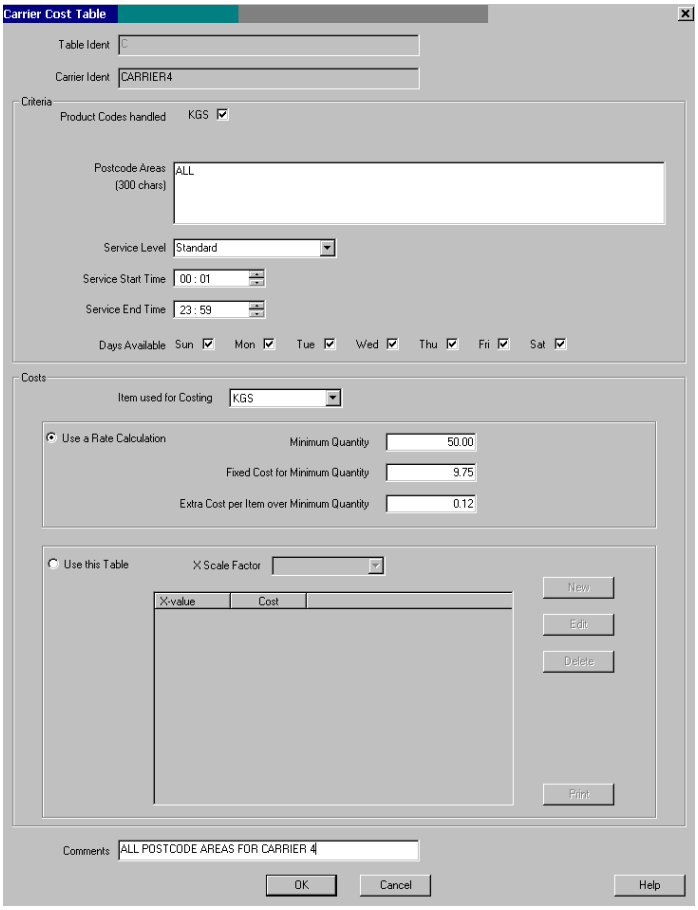
Use a tick to select the days this table will operate.

Use For Deliveries / Use for Collections

Use a tick in these fields to govern whether the table applies to deliveries , collections or both. For collection tables input all values as positive and these will be used to apply to the negative collection product/ or vehicle unit totals on an order.

Costs

For the cost calculations, two distinct types are available. A Rate calculation will allow a Fixed + Variable Cost to be calculated whereas the table represents the total cost of delivery based upon a given number of items. All values are stored to 2 decimal places.



Item / Scale used for Costing

The Item used for costing is selected from the list of 12 products and 2 vehicle units. It is the quantity of this item that will drive the cost calculations.

The X-Scale factor can be used if required to make entry values easier by factoring the Item quantity in the cost calculation. Factor values are – Whole Numbers, Tenths and Hundredths. They may be used as Product quantities can only be entered into the system as whole numbers and not decimals. As an example if it were necessary to use Pallets as our costing item in the carrier table, but the Product was given in “Tenths of a Pallet”, setting the X-Scale factor at Tenths would allow a Table cost value to be input for 0.5 Pallets and this to be used where an Order Product quantity of 5 “Tenths of a Pallet” occurred

Use a Table

Simple Table values (see screenshot above) are input with a quantity of Items and an equivalent total cost (e.g. for a quantity of PALL (described as the X-value) = 5, the total Cost is 50). Use the New, Edit and Delete buttons to add or amend values as required. When calculations are done as part of the carrier selection process, the table is referenced to find the appropriate item quantity and then the cost figure is taken as-is

from here. Any orders with a quantity above the maximum provided (e.g. 10 PAL) in the table are deemed “too large” and are not considered. Orders with a quantity between values on the table will use the larger value’s cost (eg in the table above an order quantity of 7 PALL would be given the next appropriate cost for 10 PALL = 60.00)

Use a Rate Calculation

A rate calculation (see screenshot opposite) will allow entry of a minimum item quantity, a fixed cost for this minimum, and an extra cost per item over and above the minimum set. In the example shown, a cost of 9.75 is payable for any quantity up 50 KGS and then an extra cost per KGS of 0.12 is payable for any KGS over this minimum level, i.e. for any order of 75 KGS the cost would be 9.75 + (25 x 0.12) = 12.75

Comments

A description for the Table of up to 40 characters may be input in to the Comments field.

Carrier Calls with tables using MUSTMATCH_ criteria to match products exactly

In normal circumstances when any of the 12 product types are ticked for a table the program will see consider this table feasible if the products required by the Order can be handled. As an example if the Order had products A, B, C & D and the table had A, B, C, D, E, F & G ticked as appropriate that Order would be available for that Carrier Table as it satisfied those products required and cost calculated accordingly.

Any tables that employ the letters **MUSTMATCH**_ as the first 10 characters must match the products required **exactly** and not just satisfy the products required. For example if the Order required products A, B, C & D and the table had A, B, C, D, E, F & G ticked, this table would NOT be considered. For a “must match” the table is required to have **ONLY** A, B, C, D and E ticked (see below) and no more. The Table Ident is MUSTMATCH_TESTTABLE and so meets the new criteria.

Using Carriers when Routing in Egotrip Mode

In Egotrip mode, costs for all applicable carriers are compared on loading and a lowest cost “Best Carrier” is found. This information may be displayed on screen using the Style headings Best Carrier, Carrier Table and Carrier Cost. If no acceptable carrier s can be found these entries will be blank.To allocate orders to their best carriers, use either the menu option from the popup menu – **Allocate to Best Carrier**, or to do all unrouted orders in one go - the Routes menu option **Auto Add Orders to Carriers**. Orders can also be dragged onto any relevant carrier list (not only the cheapest choice), with any not on their cheapest being flagged as an error. Orders cannot be dragged onto carriers that cannot satisfy their requirements (products, postcodes, service level etc).

Profit & Cost Information for Routes

The cost of each route and carrier list is displayed on the Route Summary Panel as part of the overall total lines. In the Output and Summary panels whilst routing, calculated values for Margin, Cost and Net are updated when changes are made.

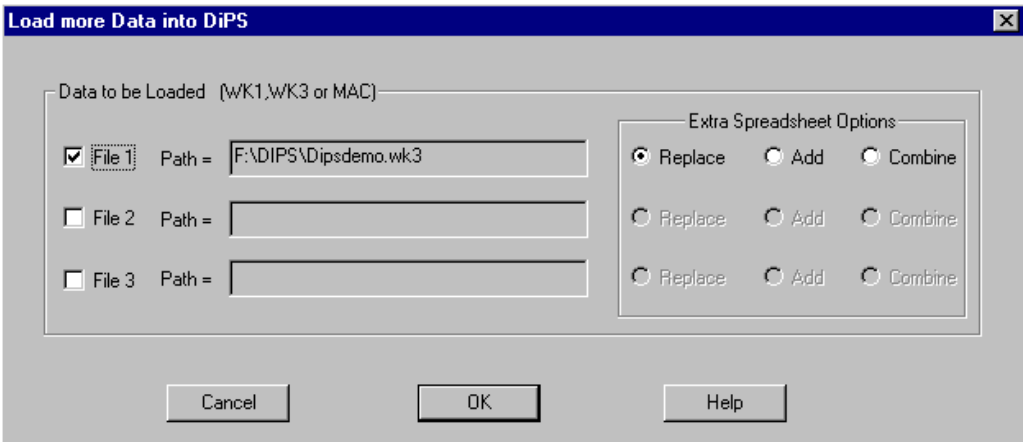
In the Route Summary section (when using Style, Route Summary Headings options), for each route values for Route Cost (sum of all vehicle & driver details), Marginal Cost (total of all orders’ margin values) and Carrier Cost (total of all orders’ carrier costs) can be displayed. A Net Value figure can also be displayed which will provide the difference between the Margin and Cost, and thus provide an indication of the route’s profitability. In addition for all vehicle routes, the Carrier Cost figure in brackets will represent the total carrier cost for all orders on this route if they were sent via their “best carrier”, thus giving an indication if these deliveries may be achieved at a lower cost than the vehicle route (also shows as a purple line in summary panel).

In the overall Output report, values are given for Total Cost, Total Margin & Total Net : being the sum of all the individual route and carrier list totals.

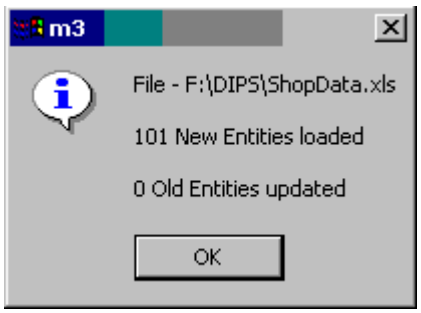
Load Data from Spreadsheet, Database, Mainframe or Macro files

Information may be loaded into a DiPS model using spreadsheet, database, mainframe files and / or macro text files. For Daily Planning operations with Orders and Shipments, specific routines are written in order to download, verify and then load order data. These are often included in a File menu option - **File, Load Orders from……** , which will either load information directly without any further user involvement or may employ a simple dialog box to select the appropriate file. Other external routines may be used from simple menu icons prior to running the New Egotrip program. Please refer to additional specialised instructions to discover which routines apply. Please phone DiPS for any further clarification if necessary. For strategic planning to activate the interface click with the LHB on the **File, Load Spreadsheet data** option . For a quicker option pressing the **F9** key on the function keys will run the option from any screen.

Also File menu option and select Study, followed by the Load Data option can be used. The following dialog box will then appear. Up to 3 files may be loaded into a study at one time. Click in the tick box next to the appropriate file number and select the relevant spreadsheet, database or macro file. For spreadsheets, then select the mode of loading PRODUCT data for CALL entities , i.e. Replace, Add, or Combine. Note that only Replace and Add are available in the MULTIPLE mode. Replace replaces the value in the Call's record with the value in the spreadsheet. Add adds frequency, Product values and number of drops to those values currently stored in the Call's record. Combine is the same as the ADD option except that the Call's frequency is the MAXIMUM value of the spreadsheet value and the existing CALL record. Finally click on the OK button to load the data.



As data is loaded, the program will display a commentary of the process in a View Output dialog window. This will display any errors as data is loaded, such as illegal postcodes or invalid data. These details may be printed if required using the Print option in the window menu. All spreadsheets now loaded into DiPS will produce an information message after successful loading, giving a total for New Entities created (e.g. new calls loaded), and also for updated entities (e.g. existing calls changed in some way). The All Data is loaded message is no longer applicable.
After data has been input and the model re-loaded, the program will enter Highway mode to display any new data without grid references or not currently attached to the matrix.



Sample spreadsheets can be found in the \Help folder on the DiPS CD.

Spreadsheet and Database Layouts for Strategic Data

For Microsoft Excel, files can be saved in any current format (2007 or earlier) and may be loaded from a number of sheets on the same file with the column headers detailed below on each sheet. Any Formulas will be loaded as values. Any values with decimal points will take absolute values on loading (i.e. 0.1 becomes 0), except where indicated.

Databases can be loaded using versions of Microsoft Access. Create a table with the data and amend the column headings of each required with the appropriate indicated below.

The preparation of the data must follow a few simple rules -

1. Each new "entity" (i.e. call or depot) must occupy a separate unique row in the spreadsheet or database.

2. The columns containing data to be loaded must contain a **>**... header label as defined below in more detail. Any column not containing a header label will be ignored (allowing use of certain columns (e.g. A, C, D and F but not B or E). This header must be left justified text format in spreadsheets.

3. The most left-hand **>**... labeled column must be the entity's IDENT column (e.g. the call must be created by a >C1 headed column before any other values such as address or times are loaded)

4. The spreadsheet data rows to be read by DiPS are defined by a pair of >> cells in column A on the first and last rows of data. These labels cannot be placed in another column with other valid DiPS data. These are not used in Access databases as the Table defines the data.

5. The first row of data selected by the >> markers should not contain the **>**…headings as it will be taken as valid call data and produce unwanted information.

In terms of depots and calls the attributes correspond to header labels as follows :-

CALL Entity

>C1 Call Identifier (up to 40 characters possible)
>C2 Frequency (No. visits in Data Collection Period)
>C3 Cumulative Demand for PRODUCT 1 (negative if collections)
>C4 Cumulative Demand for PRODUCT 2 (negative if collections)
>C5 Cumulative Demand for PRODUCT 3 (negative if collections)
>C6 Cumulative Demand for PRODUCT 4 (negative if collections)
>C103 Cumulative Demand for PRODUCT 5 (negative if collections)
>C104 Cumulative Demand for PRODUCT 6 (negative if collections)
>C105 Cumulative Demand for PRODUCT 7 (negative if collections)
>C106 Cumulative Demand for PRODUCT 8 (negative if collections)
>C203 Cumulative Demand for PRODUCT 9 (negative if collections)
>C204 Cumulative Demand for PRODUCT 10 (negative if collections)
>C205 Cumulative Demand for PRODUCT 11 (negative if collections)
>C206 Cumulative Demand for PRODUCT 12 (negative if collections)
>C7 Total No. Drops in D.C.P. (not required if same as >C2).
>C8 Radius in Kms(only required if >C7 is greater than >C2 i.e. pre-clustered)
>C9 Enter **PAID** if Carriage Paid : **NO** to remove or set OFF (or Explicit Carrier Ident)
>C10 Carrier does Collections (use **0**=NO or OFF, **1**=YES or SET ON)
>C11 Call is never delivered by a carrier (use **0**=NO or OFF, **1**=YES or SET ON)
>C12 Call Margin value (up to 2 decimal places)
>C15 Skills Required text field with Y or N for 1-32 skills e.g. YYNNY = skills 1,2,5)
>C16 Next Linked Call Ident or use **NONE** to remove all linked data for this call
>C40 Column header only will remove all MASS file Call Products, Profiles or Multiple Data
>D1 Force CALL to belong to this DEPOT (>D1 must not be the 1st column)
>C0 New Call Ident (changes the existing ident to this new one, must follow in next column to the right of >C1)

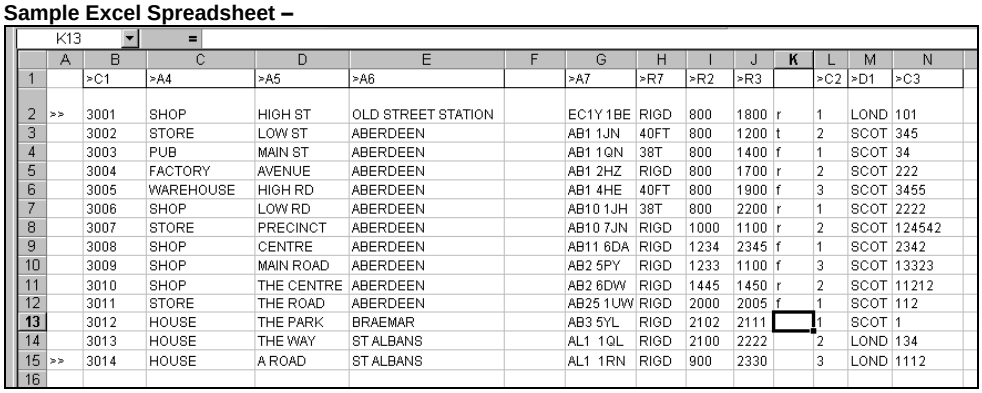
ADDRESS Data for Calls and Depots

>A2 Grid Reference - either a Numeric EASTING (in which case >A3 is also required)
or an Alphanumeric six digit (1km accuracy) SU1234
or an Aplhanumeric eight digit (100m accuracy) SU120340
>A3 Numeric NORTHING (if >A2 is a numeric EASTING).
>A102 Numeric LONGITUDE (50.5 = 50 degrees 30 minutes)
>A103 Numeric LATITUDE
>A4 Name or Address Line 1
>A5 Address Line 2
>A6 Address Line 3
>A7 Postcode (automatically converts to Grid Reference)
>A8 Address Line 4
>A9 Address Line 5
>A11 Tag Field (up to 40 characters may be used)
>A12 Country (if used must be in a column to the left of any postcode >A7 column to set the relevant country)
>A13 Special Delivery Instructions Line 1 (80 characters text or up to 240 or all 3 lines)
>A14 Special Delivery Instructions SDI Line 2 (up to 80 characters text for line 2 only)
>A15 Special Delivery Instructions SDI Line 3 (up to 80 characters text for line 3 only)
>A99 Pass Through Data for display in user-defined columns
>A17 Phone No. (or contact details) – up to 24 characters of text may be entered.
>A117 Pre Notification – value in minutes
>A217 Late or Post Notification – value in minutes

RESTRICTIONS Data for Calls and Depots

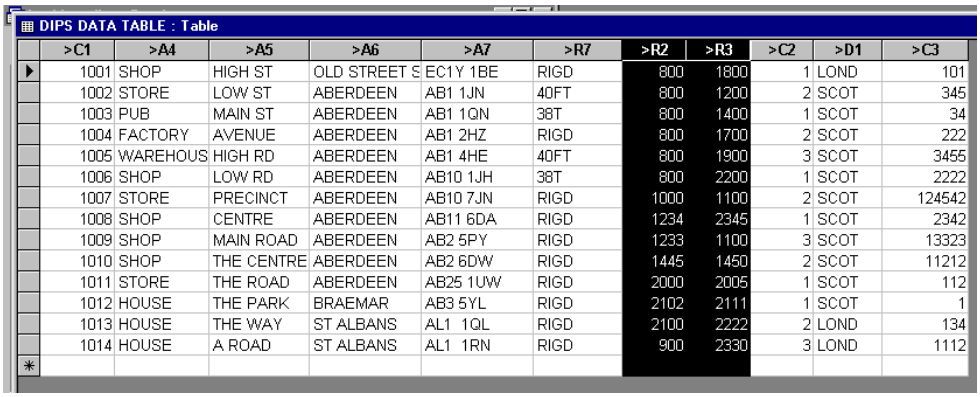
>R2 Opening Time - 1st Band (**use numeric values e.g. 600 for 0600, 1200,**
>R3 Closing Time - 1st Band **2400 or time formats 09:00 ..NB text will NOT load)**
>R4 Opening Time - 2nd Band
>R5 Closing Time - 2nd Band
>R6 Day Restrictions
>R8 Extra Time per Visit
>R9 Call Work Difficulty Factor (individual factors can be loaded using >R12 for Product 1, >R13=P2, >R14=P3, >R15=P4, >R16=P5, >R17=P6,
>R10 Pallet Fill Factor >R18=P7, >R19=P8, >R20=P9, >R21=P10, >R22=P11 and >R23 for Product 12)
>R102 Booked Delivery Time in hhmm format
>R302 Booked Delivery Time Code in text format (AM,PM etc)
>R106 Nominated Days
>R107 Crew Size Required
>R108 Delivery Priority
>R203 Week No. of first Delivery
>R7 Maximum Vehicle Class (MUST BE LEFT JUSTIFIED TEXT)
>R47 Banned Vehicle Class 1 (doesn't remove other banned classes)
>R57 Banned Vehicle Class 2 (doesn't remove other banned classes)
>R67 Banned Vehicle Class 3 (doesn't remove other banned classes)
>R77 Banned Vehicle Class 4 (doesn't remove other banned classes)
>R11 Explicit Vehicle Class
>R37 Side Loading Restrictions (L = left, R = right, F = front, T = tail or appropriate combinations , e.g. L ,RT,LF)

Sample Excel Spreadsheet –



		>C1	>A4	>A5	>A6		>A7	>R7	>R2	>R3		>C2	>D1	>C3
2	>>	3001	SHOP	HIGH ST	OLD STREET STATION		EC1Y 1BE	RIGD	800	1800	r	1	LOND	101
3		3002	STORE	LOW ST	ABERDEEN		AB1 1JN	40FT	800	1200	t	2	SCOT	345
4		3003	PUB	MAIN ST	ABERDEEN		AB1 1QN	38T	800	1400	f	1	SCOT	34
5		3004	FACTORY	AVENUE	ABERDEEN		AB1 2HZ	RIGD	800	1700	r	2	SCOT	222
6		3005	WAREHOUSE	HIGH RD	ABERDEEN		AB1 4HE	40FT	800	1900	f	3	SCOT	3455
7		3006	SHOP	LOW RD	ABERDEEN		AB10 1JH	38T	800	2200	r	1	SCOT	2222
8		3007	STORE	PRECINCT	ABERDEEN		AB10 7JN	RIGD	1000	1100	r	2	SCOT	124542
9		3008	SHOP	CENTRE	ABERDEEN		AB11 6DA	RIGD	1234	2345	f	1	SCOT	2342
10		3009	SHOP	MAIN ROAD	ABERDEEN		AB2 5PY	RIGD	1233	1100	f	3	SCOT	13323
11		3010	SHOP	THE CENTRE	ABERDEEN		AB2 6DW	RIGD	1445	1450	r	2	SCOT	11212
12		3011	STORE	THE ROAD	ABERDEEN		AB25 1UW	RIGD	2000	2005	f	1	SCOT	112
13		3012	HOUSE	THE PARK	BRAEMAR		AB3 5YL	RIGD	2102	2111		1	SCOT	1
14		3013	HOUSE	THE WAY	ST ALBANS		AL1 1QL	RIGD	2100	2222		2	LOND	134
15	>>	3014	HOUSE	A ROAD	ST ALBANS		AL1 1RN	RIGD	900	2330		3	LOND	1112

Sample Access Database Table -



DIPS DATA TABLE : Table

>C1	>A4	>A5	>A6	>A7	>R7	>R2	>R3	>C2	>D1	>C3
1001	SHOP	HIGH ST	OLD STREET S	EC1Y 1BE	RIGD	800	1800	1	LOND	101
1002	STORE	LOW ST	ABERDEEN	AB1 1JN	40FT	800	1200	2	SCOT	345
1003	PUB	MAIN ST	ABERDEEN	AB1 1QN	38T	800	1400	1	SCOT	34
1004	FACTORY	AVENUE	ABERDEEN	AB1 2HZ	RIGD	800	1700	2	SCOT	222
1005	WAREHOUS	HIGH RD	ABERDEEN	AB1 4HE	40FT	800	1900	3	SCOT	3455
1006	SHOP	LOW RD	ABERDEEN	AB10 1JH	38T	800	2200	1	SCOT	2222
1007	STORE	PRECINCT	ABERDEEN	AB10 7JN	RIGD	1000	1100	2	SCOT	124542
1008	SHOP	CENTRE	ABERDEEN	AB11 6DA	RIGD	1234	2345	1	SCOT	2342
1009	SHOP	MAIN ROAD	ABERDEEN	AB2 5PY	RIGD	1233	1100	3	SCOT	13323
1010	SHOP	THE CENTRE	ABERDEEN	AB2 6DW	RIGD	1445	1450	2	SCOT	11212
1011	STORE	THE ROAD	ABERDEEN	AB25 1UW	RIGD	2000	2005	1	SCOT	112
1012	HOUSE	THE PARK	BRAEMAR	AB3 5YL	RIGD	2102	2111	1	SCOT	1
1013	HOUSE	THE WAY	ST ALBANS	AL1 1QL	RIGD	2100	2222	2	LOND	134
1014	HOUSE	A ROAD	ST ALBANS	AL1 1RN	RIGD	900	2330	3	LOND	1112

DEPOT Entity

Listed below are the special DEPOT attributes available together with the DiPS >... code.

>D1 Identifier (up to 10 characters of text or numerics may be used)
>A11 Tag Field
>D3 Maximum Daily Throughput of PRODUCT 1
>D4 Maximum Daily Throughput of PRODUCT 2
>D5 Maximum Daily Throughput of PRODUCT 3
>D6 Maximum Daily Throughput of PRODUCT 4
>D103 Maximum Daily Throughput of PRODUCT 5
>D104 Maximum Daily Throughput of PRODUCT 6
>D105 Maximum Daily Throughput of PRODUCT 7
>D106 Maximum Daily Throughput of PRODUCT 8
>D203 Maximum Daily Throughput of PRODUCT 9
>D204 Maximum Daily Throughput of PRODUCT 10
>D205 Maximum Daily Throughput of PRODUCT 11
>D206 Maximum Daily Throughput of PRODUCT 12

(use the keyword INF to set any of these numbers to an infinite unlimited value)

>D0 New Depot Ident (changes the existing ident to this new one, must follow in next column to the right of >D1)

Handling Costs & Product Costs (available to 5 decimal places)

>D3H Handling Cost for PRODUCT 1	>D3P Product Cost of PRODUCT 1
>D4H Handling Cost for PRODUCT 2	>D4P Product Cost of PRODUCT 2
>D5H Handling Cost for PRODUCT 3	>D5P Product Cost of PRODUCT 3
>D6H Handling Cost for PRODUCT 4	>D6P Product Cost of PRODUCT 4
>D103H Handling Cost for PRODUCT 5	>D103P Product Cost of PRODUCT 5
>D104H Handling Cost for PRODUCT 6	>D104P Product Cost of PRODUCT 6
>D105H Handling Cost for PRODUCT 7	>D105P Product Cost of PRODUCT 7
>D106H Handling Cost for PRODUCT 8	>D106P Product Cost of PRODUCT 8
>D203H Handling Cost for PRODUCT 9	>D203P Product Cost of PRODUCT 9
>D204H Handling Cost for PRODUCT 10	>D204P Product Cost of PRODUCT 10
>D205H Handling Cost for PRODUCT 11	>D205P Product Cost of PRODUCT 11
>D206H Handling Cost for PRODUCT 12	>D206P Product Cost of PRODUCT 12

WAREFROM Parameters

>S2 Maximum Stem Time from DEPOT

Route Attributes

>Y1 DEPOT's Stem Ra
>L4 DEPOT's Maximum Route Length

Loading Vehicles from Spreadsheet

New field types have been introduce to allow either vehicle class totals or individual vehicle names (fleet nos. , registration nos. etc) to be loaded directly from an excel spreadsheet. Use the **>D1** depot identifier as the first defined column and followed by the vehicle class name preceded by **^>** characters (e.g. ^>ARTC , ^>40FT or ^>R1). On each depot row individual names may be entered by typing the required text (e.g. VU05 XXX or TR0050), whilst class totals can be entered by using the required number preceded by a **#** sign (e.g. #20 for twenty, and #0 to set at zero or delete all vehicles of this class at this depot).

	>D1	^>ARTC	^>40FT	^>7.5T	^>7.5T
>>	DEP	ARTC1	40FT1		
	DEP	ARTC2	40FT2		
	DEP				#20
	SAT	#0	40FTG2	7.5TG2	7.5TG21
>>	SAT		40FTG3	7.5TG3	7.5TG22

In the example, DEP will have 2 vehicles of class ARTC (called ARTC1 and ARTC2); 2 trailers of class type 40FT (called 40FT1 and 40FT2) and a total of 20 7.5T vehicles (using the normal DiPS sequencing of 7.5T0001, 7.5T0002, 7.5T0003 etc). The SAT depot will have all of its ARTC vehicles removed by the #0 total and then 2 x 40FT vehicles added and 4 x 7.5T vehicles added using individual names.

Loading Drivers from Spreadsheet

New field types have been introduced to allow either driver classes or individual driver names to be loaded directly from an excel spreadsheet. Use the **>D1** depot identifier as the first defined column and followed immediately by the individual driver or class name using the **>M1** column header. The full list of available driver column headers is listed below.

>D1	Depot Name (must be the first column defined)	
>M1	Driver Identifier (Name) or Class Name (must be the second column defined)	
>M2	No. Required (use 1 for an individual driver name)	
>M3	Can Drive up to Vehicle Category	(1-9 or 99) 99 = Mate (can't drive a vehicle)
>M4	Pay Scheme	(1-6)
>M5	Start Depot Ident	(must already exist)
>M105	Start Time	(default value applies to all days)
>M205	Latest Start Time	(default value applies to all days)
>M6	Finish Depot Ident	(must already exist)
>M106	Finish Time	(default value applies to all days)
>M7	Explicit Vehicle Id	(for individual drivers only)
>M8	Explicit Trailer Id	(for individual drivers only)
>M9	Explicit vehicle Class Wildcard	
>M10	Day Restrictions	(use 7 digit values with 0 and 3 for Sun-Sat)
>M110	Night Out Banned	(Y for Yes or N for No)
>M11	Driver Group	(1-4)
>M12	Daily Limits – Maximum Shift Time	
>M13	Daily Limits – Maximum Overtime	
>M14	Daily Limits – Maximum Driving Time	
>M15	Daily Limits – Maximum Driving Distance	
>M16	Working Time Directive – Maximum No. of Days in DCP	
>M17	Working Time Directive – Maximum Shift Time in DCP	
>M18	Working Time Directive – Minimum Shift Time remaining in DCP to start another day	
>M19	Working Time Directive – Maximum Cumulative Shift over a number of Consecutive Days (see M20)	
>M20	Working Time Directive – No. of Consecutive Days for Shift (see M19)	
>M118	Working Time Directive – Maximum Driving Time in DCP	
>M119	Working Time Directive – Maximum Cumulative Driving Time over a number of Consecutive Days (see M120)	
>M120	Working Time Directive – No. of Consecutive Days for Driving (see M119)	
>M21	Driver Can Handle Products	(12 characters of text to represent the 12 products with Y or N ; e.g. YNYNYYYYYYYY)
>M22	Driver Has Skills	(32 characters of text to represent the 32 possible skills with Y or N)
>M116	Shift Pattern No.	
>M23	Explicit Mate No.1	(20 characters maximum)(drivers only)
>M24	Explicit Mate No.2	(20 characters maximum)(drivers only)
>M117	No of Lines in Shift Pattern	
>M216	Shift Pattern – Rota No.	

In addition to the default depots and times defined by >M5, >M105, >M106, >M6 and >M106, different values for days of the week may be input by adding an @"DAY" on the end of the column header. Valid entries are @MON, @TUE, @WED, @THU, @FRI and @SAT. Examples would include >M5@MON to change the Start Depot on a Monday only, and >M106@WED to have a different Finish Time on Wednesday.

Loading Product Availability Values from Spreadsheet

The >P2 and >P3 values must be defined followed be either P4-P7 hour definitions or >P8->P14 daily plan values. The depot defined in >P2 must already exist and have the appropriate Product Availability type (either hourly or daily) set on the depot dialog before the spreadsheet is loaded.

>P2 Depot Ident
>P3 Product Code

Hourly Plan

>P4 Weekday
>P5 Start Time (hh:00 – with hourly values in the time format e.g. 10:00)
>P6 End Time (hh:00 – with hourly values in the time format e.g. 23:00)
>P7 Production Rate (numeric value for quantity produced per hour)

Daily Plan

>P8 Maximum Available on SUNDAY (numeric value)
>P9 Maximum Available on MONDAY (numeric value)
>P10 Maximum Available on TUESDAY (numeric value)
>P11 Maximum Available on WEDNESDAY (numeric value)
>P12 Maximum Available on THURSDAY (numeric value)
>P13 Maximum Available on FRIDAY (numeric value)
>P14 Maximum Available on SATURDAY (numeric value)

Postcode to Depot/Product/Day Restriction

Postcode table for use with products, depots, carriers and so forth can be loaded using the >@ column header. These tables can be found in the Route Parameters section. The relevant values are -

>@1 Postcode Wildcard
>@4 Day Restrictions
>@5 Zone

>@6 Product Group (use numeric values 1-12 for products -01- to -12-)
>@7 Value to be added to product group
>@8 1st Trip Only (use numeric values - 1 for YES or 0 for NO)
>@9 Depot Ident (for postcode to depot table)
>@11 Time Band code (booked code)
>@12 Maximum Vehicle wildcard

Loading Call Delivery Slots from Spreadsheet

The Delivery Slots logic allows differing time bands for delivery or collection to be set up for a single call location for different time periods throughout the week. It is used wherever the more simplistic opening restrictions are not sufficient or different products are delivered at different times throughout the day. Up to 10 slots may be established for each call with product availability, time windows, and opening restrictions. All relevant parameters may be loaded from a spreadsheet using the following $ (dollar sign) column headers **in this specific order** :-

>C1 - Call Identifier for this slot.
>$0 - when a cell in this column has a non-zero numeric or non-blank text value, it is used to delete ALL slots for a call before loading in new data. This must appear before (that is to the left of) all other $ columns.
>$2 - Nominated Days (using a 7 digit numeric smtwtfs value 1 for open, 0 for shut).
>$3 - Opening Time (use an hhmm NUMERIC value with 0700 appearing as 700).
>$4 - Closing Time (use an hhmm NUMERIC value with 0700 appearing as 700).
>$5 - Product Ranking. This is a 12 digit left justified TEXT field containing values between 0 and 9 to show rank of the products 1 to 12 (1=highest rank, 0=not to be delivered in this slot).
>$6 - Fixed Work Time (replaces the fixed work time on the call screen if defined).
>$7 - Work Difficult Factor (replaces the work factor on the call screen if defined).
>$8 - Maximum Number of Visits in Window (numeric value).
>$108 - Maximum Number of Vehicles at once (numeric value).
>$11 – Minimum Gap between Visits to this Call (numeric value in minutes).
>$111 – Maximum Gap between Visits to this Call (numeric value in minutes).
>$9 - Maximum Vehicle Class for this slot (replaces the vehicle restriction on the call screen if defined).
>$10 - Explicit Vehicle Class for this slot

An example of a typical spreadsheet layout might be -

>C1	>$0	>$2	>$3	>$4	>$5	>$6	>$7	>$8	>$18	>$28	>$9
C001	1	1111111	200	400	100000000000	12	1	9	3	25	40FT
C001		1010101	600	1200	123400000000			1			
C001		100000	1500	1800	001000000000	20					RIGD
C002		1111111	700	2300	100000000000						

A brief explanation of each line is as follows -

Line 1 - for call C001, remove all existing slots (>$0 non-zero), add a slot for all days of the week from 0200 to 0400 delivering only product 1, with a call fixed time of 12 minutes, and allowing 9 vehicles in, 3 at once if necessary with a 25 minute gap to the next. The biggest vehicle for access purposes is the 40FT. All other parameters are as on the call screen.

Line 2 - for call C001, (blank >$0 for no slot removal else line 1 slot is deleted as well!), add a slot for Sun,Tue,Thu,Sat from 0600 to 1200 delivering product 1 as the highest ranking followed by 2,3,4 but not 5,6,7,8,9,10,11,or 12, and allowing only 1 vehicle in. All other parameters are as on the call screen.

Line 3 - for call C001, add a slot for Monday only from 1500 to 1800 delivering only product 3, with a call fixed time of 20 minutes. The default number of vehicles in this slot of 1 will apply. The biggest vehicle for access purposes is the RIGD. All other parameters are as on the call screen.

Line 4 - for call C002, do not remove any existing slots (blank >$0 field), add a slot for all days of the week from 0700 to 2300 delivering only product 1. All other parameters are as on the call screen. The default number of vehicles in this slot of 1 will apply.

Loading Banned Depots/Carriers/Calls from Spreadsheet

Banned entities for Calls can be loaded using the >J column header. All idents must already exist on the database.
The relevant values are -

>J1	Call Ident	(must already exist on MASS file)
>J2	Banned as Previous Call / Depot / Carrier Ident	(ident must already exist)
>J3	Banned as Next Call	(ident must already exist)
>J4	Banned as Both Next & Previous Call	(ident must already exist)

As many >J2, >J3 and >J4 columns as necessary may be entered for each >J1 Call Ident row.
The >J2 column is used for adding individual banned Depots or Banned Carriers that do not for part of the Call chain.

Loading Carrier Cost Tables from Spreadsheet

Carrier Cost Tables for use with Carrier Calls in Daily Planning modes can be loaded using the > column header. This data can be found in the Tables section in Kingpin Mode.

Essential fields are Table Identifier, Product Groups Handled, Service Level, Item used for Costing, and Costing Type. Cost values of ZERO are ignored, and if using Table costing both the item quantity (x-value) and total cost values must be ascending (i.e. a lower value for a higher item quantity will be considered an error). **Due to the sensitive nature of this information and possible repercussions of incorrect entries, no table will be loaded from a spreadsheet until its errors have been corrected.**

The relevant values are -

>[1 Table Identifier (up to 40 characters)
>[2 Carrier Ident (must already exist on the MASS file)
>[3 Product Groups Handled (use comma separated text with Product Labels)
>[4 Country (use UK, NI ,etc or OS for overseas)
>[5 Postcode Areas (use comma separated text with Postcodes or 'ALL')
>[6 Service Level (Service levels of Standard, Booked and Timed are available)
>[7 Service Start Time (use hhmm)
>[8 Service End Time (use hhmm)
>[9 Days Available (use seven digit nominated days field Sun-Sat , 1=ON, 0=NOT)
>[18 Comments (up to 40 characters)
>[10 Product (Item) used for Costing (use appropriate Product Label)
>[11 Vehicle Unit (Item) used for Costing (use appropriate vehicle unit label)
>[103 Deliveries Allowed (use 1 for YES, 0 for NO)
>[203 Collections Allowed (use 1 for YES, 0 for NO)
>[12 Costing Type (RATE or TABLE)

For Costing type = RATE
>[13 Minimum Item Quantity (to 2 decimal places for costing item)
>[14 Fixed Cost for Minimum Quantity (to 2 decimal places)
>[15 Extra Cost per Item over Minimum (to 2 decimal places)

For Costing type = TABLE
>[16 X Scale factor (either 1= WHOLE, 10= TENTHS or 100= HUNDREDTHS)
>[X= n] X value for costing Item Quantity of 'n' (to 2 decimal places)
Total Cost is input as the cell value (to 2 decimal places)

e.g. for an item quantity of 20 and a total cost of 80.00 -

>[x=20]	>[x=30]	>[x=40]	>[x=50]	>[x=51]	>[x=100]
80.00	90.00	97.50	100.00	105.00	200.00

To create Carrier Idents using a spreadsheet use at least the following 2 columns :-

>C1 Enter the Call Ident for the Carrier
>C9 Enter the Explicit Carrier Ident again

Other address and postcode information may be added in additional columns as required.

Loading Routes from Spreadsheet

New column header fields have been added to the spreadsheet loading routines for loading routes from spreadsheet. When loading information it is assumed that all data (such as depot, calls, orders, vehicles etc) exists on the MASS file before the routes are created. he Relative Route Number column must be the first column of data on the spreadsheet when loading routes (similar to the >C1 column when loading calls). **>W1 Relative Route Number**

Without a defined driver (i.e. a column >W10) , the routes are created using the Depot's Route Sequence number as the starting point and adding routes in ascending order from this point. As an example, if the relative route number is 1 , for a Sunday, and the depot 's sequence number is 500, this route will be created within the program as R500D001 (the route number is not an absolute value). "Temp" drivers are then added to the routes as necessary.

With defined driver's names for each route under >W10, , the routes are created using the Route No. **exactly** as defined by the **>W1** column. There is no re-sequencing or moving of route numbers. The route no. used in this case must be the SAME as the depot's route sequence number as defined on the depot parameters. The driver must also exist at the depot. When using driver classes it is worth noting that DiPS creates individual driver using the Class Name and a sequence number from 001-999. For example if Class NIGHTS is defined with a total required of 10, they will be named NIGHTS001, NIGHTS002, NIGHTS003 and so on.

The following headers are used for Working Routes – (bold type indicates minimum required fields)

>W1	**Relative Route Number**
>W2	**Day Name (Sun,Mon,Tue,Wed,Thu,Fri,Sat)**
>W12	**Week Number of Route (only if planning period is more than 7days)**
>W3	**Route Date (only if Daily Scheduling with Orders)**
>W4	Route Length in days
>W14	Earliest Route Departure Time (in hhmm)
>W24	Explicit Gate Departure Time for a Trip (in hhmm)
>W5	**Ident of Depot or Call**
>W15	Order or Shipment Ident (if Daily Scheduling)
>W25	Quantity in Vehicle Unit1 (if Strategic)
>D1	**Owning Depot of Route**
>W6	Vehicle Ident
>W7	Trailer Ident
>W10	Driver's Name
>W19	Fleet No.
>W20	Trip Label for Trip 1
>W21	Trip Tag for Trip 1
>W8	Slot or Window Number for Call
>W9	Product Group (1-12) in this slot (only required if split by product or multiple)
>W18	Call's Profile Day No. (1-7 Sun-Sat, e.g. 2=Mon) or start day for a depot's trip if defined on a depot line
>W35	Call's Profile Day Name (SUN, MON etc) or start day for a depot's trip if defined on a depot line

The following headers are used for Fixed Routes – (bold type indicates minimum required fields)

>F1	**Relative Route Number**
>F2	**Day Name (Sun,Mon,Tue,Wed,Thu,Fri,Sat)**
>F22	**Nominated Days (using 7digit 0111110 format)**
>F4	Route Length in days
>F14	Departure Time (in hhmm)
>F5	**Ident of Depot or Call**
>F15	Dummy Shipment Ident (if Daily Scheduling)
>D1	**Owning Depot of Route**
>F6	Vehicle Ident
>F7	Trailer Ident
>F10	Driver's Name
>F8	Slot or Window Number for Call
>F9	Product Group (1-12) in this slot (only required if split by product or multiple)
>F18	Call's Profile Day No. (1-7 Sun-Sat, e.g. 2=Mon) or start day for a depot's trip if defined on a depot line
>F19	Fleet No.
>F20	Trip Label for Trip 1
>F21	Trip Tag for Trip 1

Example of spreadsheet data -

	>W1	>W2	>W4	>W5	>W25	>D1	>W7	
>>	1	MON	2	C1001	5	MAIN	RIGD0001	
	1	MON	2	C1003	6	MAIN		
	1	MON	2	C1004	4	MAIN		
	1	MON	2	C1007	3	MAIN		
	2	WED	1	C1005	2	MAIN	RIGD0001	
	2	WED	1	C1009	1	MAIN		
	1	THU	1	C2001	3	OUTBASE	VAN 0001	
	1	THU	1	C2003	4	OUTBASE		
>>	1	THU	1	C2004	4	OUTBASE		

For shipments please note that two rows are required. One will have the collection Call ID under >W5 and the shipment ID under >W15 and then a subsequent row later in the route entry with the delivery Call ID under >W5 and the shipment ID under >W15. This then defines when the correct sequence for collect and deliver for all the shipments on that route.

Multiple Data

When DiPS operates in multiple mode, all the calls belong to a single depot called MULTIPLE. Each Commodity Range for a CALL can be sourced from a different DEPOT. In this mode the >D1 label is illegal. DiPS recognises a Commodity Range header label because it must be centrally justified using the carat symbol ^ . The next character must be the greater than sign > . The third character is sometimes used to distinguish between the three types of entry in a Commodity Range field as follows -

(a) Depot Allocation - follow the > symbol with the underscore symbol _ .
(b) Profile Number - follow the > symbol with the percent symbol % .
(c) Demand Quantity - no extra character required.

Finally the label contains the Commodity Range's name.

As an example, for the commodity range called FROZEN, the Depot allocation header would be ^_FROZEN, the Profile Number ^>%FROZEN , and its demand quantity header would be ^>FROZEN.

It is usual to define all three columns of data for each Commodity Range used, the content of each column type will be as follows -

Depot Allocation

This column can contain text or numeric data depicting the DEPOT Ident as created by KINGPIN. If a text field is used it can be given two meanings according to its justification
a) left justified - (default prefix of a single quote ') allows WAREFROM to alter this DEPOT for another if the logic requires it.
b) right justified - (prefix of a double quote symbol ") explicitly allocates this demand to the defined DEPOT and will not be changed by WAREFROM.

If however a numeric ident is used then it will always default to a non-explicit allocation.

Profile Number
Only positive NUMERIC fields are valid here and each must correspond to a previously defined PROFILE entered into KINGPIN.

Demand Quantities
Use positive numbers to represent quantities delivered to a CALL and negative numbers to represent collections. Note that only one value (either +ve or -ve) can be stored for each CALL. example :-

>C1	>A4	^>_FROZEN	^>%FROZEN	^>FROZEN
'C001	KIDDERMINSTER	'DEPOT1	11	6125
22	BIRMINGHAM	"DEPOT1	17	900
C002	COVENTRY	162	2	-722
'C002			9	368

Line 1 - CALL C001 gets 6125 FROZEN items from DEPOT1 with profile no. 11
Line 2 - CALL 22 is explicitly defined to DEPOT1.
Line 3 - CALL C002 supplies 722 to depot 162 with profile no. 2
Line 4 - changes CALL C002 to a demand of 368 with profile no. 9 (i.e. only one value is stored for FROZEN).

Delivery Windows at CALLs for each Group

Delivery windows can be coded using a decimal number in the form hhmm.hhmm where the first part of the number represents the opening time and the element after the point represents the closing time. Examples include -

opening time	closing time	value used
1130	1245	1130.1245
1045	1730	1045.173
0900	1200	900.12
0700	0900	700.09
0030	0045	30.0045

Use fields C3 - C6, C13 - C16, and C23 - C26 to correspond to the product types in normal usage of DiPS. A spreadsheet example might include -

>C1	>C3	>C4	>C5
C001	1230.1300	800.09	700.093

this would represent for product group 1 a window of 1230 to 1300, for group 2 a window of 0800 to 0900, and for group 3 - 0700 to 0930.

Loading Profiled Data from spreadsheet

When using the Profiled Data Facility in strategic studies, two options are available for loading data.

Using existing Profiles

To employ existing profiles already input manually into DiPS, the identifiers opposite are used in addition to the normal CALL address/restriction flags to define product totals and their appropriate profile reference number: Product demand figures for week's demand are input using the normal column markers, but with corresponding Profile Numbers input using these values -

>C40 will delete the profile table.

Product	Demand Reference	Profile Reference
-01-	>C3	>C43
-02-	>C4	>C44
-03-	>C5	>C45
-04-	>C6	>C46
-05-	>C103	>C53
-06-	>C014	>C54
-07-	>C105	>C55
-08-	>C106	>C56
-09-	>C203	>C63
-10-	>C204	>C64
-11-	>C205	>C65
-12-	>C206	>C66

A spreadsheet example might include - (with >C1 for CALL ident as usual)

>C1	>C3	>C43		>C4	>C44
C001	1000	1		2000	3
C002	9087	2		400	44

Call C001 has a week's total demand of 1000 Product 1 subject to profile no. 1; and 2000 product 2 subject to profile no. 3
Call C002 has a week's demand of 9087 Product 1 subject to profile no. 2; and 400 product 2 subject to profile no. 44.
The >C2 column input for frequency in normal strategic studies is not used, as frequencies are governed by the profiles already set in DPS.

Creating New Profiles and Demand Data for Calls

To create new data and over-write all previous profiles and data, each day of the week is prefixed by a demand reference and this data is used to define the delivery volumes and profiles. A profile is created for every product for each call and added to the Profile Table. The weekly total would normally be the sum of the figures given, although a >C3 column may be added to the right of the individual values giving a specific total, which would lead to the individual values given being used as a % of this total on each day.

Product	Sunday demand	Monday Demand	Tuesday demand	Wednesday demand	Thursday demand	Friday demand	Saturday demand
-01-	>C3Sun	>C3Mon	>C3Tue	>C3Wed	>C3Thu	>C3Fri	>C3Sat

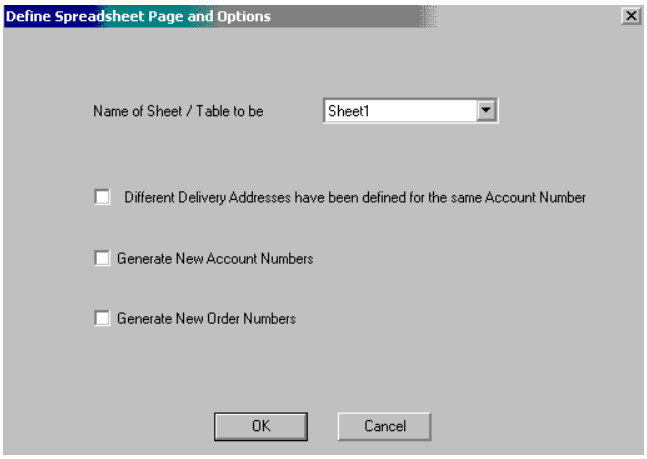
For products 2 - 12, simply add the day to the appropriate product demand reference. For example product 3 would have >C5Mon, product 6 would include >C14Wed, and so on.

A spreadsheet example might include -

>C1	>C3Sun	>C3Mon	>C3Tue	>C3Wed	>C3Thu	>C3Fri	>C3Sat
C001	10		15		30		
C002		3				4	6

Call C001 has a 10 product 1 on Sunday, 15 on Tuesday and 30 on Thursday. C002 receives 3 product 1 on Monday, 4 on Friday and 6 on Saturday. The >C2 column input for frequency in normal strategic studies is not used, as frequencies are governed by the profiles already set in DPS.

Loading Order Data from Spreadsheet



The File menu option Load Orders from Excel Spreadsheet will process and input order information directly from an Excel spreadsheet. This option is only available for specific report styles defined in the File, Study, Settings dialog. The style ORDERXL can be used if necessary as a short term measure. On running the option an initial dialog will appear to select the spreadsheet to be loaded, followed by the page and options dialog. Select the sheet or table to be used (default is always Sheet1) and then tick the required options if necessary. Choose different delivery addresses if orders have been defined that are to be delivered to another location rather than that defined by the Call. Selecting rather of the Generate New options will create system defined Order or Call numbers, meaning that the >*1 or >*2 columns need not be defined or are ignored. Once data is loaded, click Apply to re-load the model and. The preparation of the data must follow a few simple rules

1. Each new ORDER must occupy a unique LINE in the spreadsheet.
2. The columns containing data to be loaded must contain the correct labels as defined below in more detail. Any column not containing this label will be ignored. In this way a selection of columns may be used (e.g. columns A, C, D and F but not B or E).
3. The most left-hand '>... labeled column must be the order ident. (NB This does not necessarily have to be column 'A').
4. The data rows read from by DiPS are defined by a pair of >> labels to the left of the first and last rows of data. These labels cannot be placed in a column with other valid DiPS data. The selected datarows should begin on line 2 – with the headers being on line 1 of the spreadsheet.

>*1	Order Identifier	(may be left justified text or a numeric value)
>*2	Call Identifier	(may be left justified text or a numeric value)
>*911	Order Tag Field	(up to 4 characters may be used)
>*9	Opening /Booked Time	may be numeric or time value (see below)
>*10	Closing Time	may be numeric or time value (see below)
>*11	Order Margin	(value may be defined 2 to decimal places)
>*12	Order Linked Job	(text field with the ident of an existing order to be routed next)
>*13	Skills Required	(text field with Y or N flags for 1-32 skills e.g. YYYNNNY is skills 1,2,3,7 required)
>*912	Order Country	
>*913	Special Delivery Instructions SDI Line 1 (80 characters text or up to 240 for all 3 lines)	
>*914	Special Delivery Instructions SDI Line 2 (up to 80 characters text for line 2 only)	
>*915	Special Delivery Instructions SDI Line 3 (up to 80 characters text for line 3 only)	
>*109	Due On Date (in format ddmmyyyy).	
>*209	Due by Date (in format ddmmyyyy).	
>*99	Order's Pass Through Data for display in user-defined columns	
>D1	Force CALL to belong to the DEPOT named in this column	

RESTRICTIONS DATA

>R2	Call Opening Time 1 may be numeric or time format (hh:mm:ss)
>R3	Call Closing Time 1 may be numeric or time format (hh:mm:ss)
>R4	Call Opening Time 2 may be numeric or time format (hh:mm:ss)
>R5	Call Closing Time 2 may be numeric or time format (hh:mm:ss)
>R6	Day Restrictions
>R8	Extra Time per Visit
>R9	Work Difficulty Factor
>R10	Pallet Fill Factor
>R106	Nominated Days
>R107	Crew Size Required
>R108	Delivery Priority
>R7	Maximum Vehicle Class (MUST BE LEFT JUSTIFIED TEXT)
>R27	Maximum Vehicle Class (
>R37	Side Loading Restrictions (L = left, R = right, F = front, T = tail or appropriate combinations , e.g. L ,RT,LF)
>R47	Banned Vehicle Class 1 (doesn't remove other banned classes)
>R57	Banned Vehicle Class 2 (doesn't remove other banned classes)
>R67	Banned Vehicle Class 3 (doesn't remove other banned classes)
>R77	Banned Vehicle Class 4 (doesn't remove other banned classes)
>R11	Explicit Vehicle Class

ADDRESS Data

>A2 Grid Reference -
either a Numeric EASTING (in which case >A3 is also required)
or an Alphanumeric six digit (1km accuracy) SU1234
or an Aplhanumeric eight digit (100m accuracy) SU120340

>A3	Numeric NORTHING (if >A2 is a numeric EASTING).
>A29	Numeric Easting for Ireland in UK projection
>A39	Numeric Northing for Ireland in UK projection

>A4 Name or Address Line 1
>A5 Address Line 2
>A6 Address Line 3
>A7 Postcode (automatically converts to Grid Reference)
>A8 Address Line 4
>A9 Address Line 5
>A11 Call Tag Field (up to 40 characters may be used)
>A12 Call Country (must be in a column before[i.e. to the left of] any postcode entry)
>A13 Special Delivery Instructions Line 1 (80 characters text or up to 240 for all 3 lines)
>A14 Special Delivery Instructions SDI Line 2 (up to 80 characters text for line 2 only)
>A15 Special Delivery Instructions SDI Line 3 (up to 80 characters text for line 3 only)
>A17 Customer Phone No.
>A77 Call's Postcode (only when used with Order Deliver-To Addresses option)
>A99 Call's Pass Through Data for display in user-defined columns

Totals for Product Data or Commodity Range

^>AAA order quantity for product or commodity range

DiPS recognises a Commodity Range header label because it must be centrally justified using the carat symbol ^ . The next character must be the greater than sign >. Finally the label contains the Commodity Range's name. As an example, for the commodity range called FROZEN the demand quantity header would be ^>FROZEN. These commodity ranges or products must exist on the MASS file prior to running the program.

Individual Values for Commodity Range Data

Using the **>#** label on the top of a column allows multiple lines of quantity data to be loaded for each order. A commodity range code is created using >#1 and then details for this commodity loaded using subsequent ># columns. These commodity ranges do not have to exist on the MASS file prior to running the program to load the orders. The last row found for each commodity will be the quantity and conversions used. Rows will not add together to produce a cumulative value for a single commodity.

>#1	Commodity Range Label	(up to 20 characters text).
>#2	Commodity Description	(up to 40 characters text)
>#3	Primary Product Group No.	(use numeric values of 1-12 to represent products 1 to 12)
>#4	Primary Conversion factor	(use numeric values up to 21,000 to convert quantity into primary product)
>#5	Secondary Product Group No.	(use numeric values of 1-12 to represent products 1 to 12)
>#6	Secondary Conversion factor	(use numeric values up to 21,000 to convert quantity into second product)
>#7	Third Product Group No.	(use numeric values of 1-12 to represent products 1 to 12)
>#8	Third Conversion factor	(use numeric values up to 21,000 to convert quantity third product)
>#9	Quantity of this commodity	(use numeric values to add a quantity of this commodity)

Booked Times and Time Windows for Orders and Calls

The >*9 flag may be used simply to define a single Booked Time for an Order using a Numeric Value in 24hr format, such as 1000 for 10:00 hrs or 800 for 8:00 hrs. For a Time Window, an 8 digit numeric value may be used giving from and to times, i.e. 10001700 would give 10:00 to 17:00 hrs; or 8000900 for 08:00 to 09:00. The >*39 field can also be used to specify the Order Closing Time window. Alternatively use the >R2 , >R3, >R4 and >R5 columns to define opening and closing for the Call in separate columns

Loading Shipment Data from Spreadsheet

The File menu option Load Shipments from Excel Spreadsheet will also process and input shipment information directly from an Excel spreadsheet. The preparation of the data must follow a few simple rules

1. Each new ORDER must occupy a unique LINE in the spreadsheet.
2. The columns containing data to be loaded must contain the correct labels as defined below in more detail. Any column not containing this label will be ignored. In this way a selection of columns may be used (e.g. columns A, C, D and F but not B or E).
3. The most left-hand '>... labeled column must be the order ident. (NB This does not necessarily have to be column 'A').
4. The data rows read from by DiPS are defined by a pair of >> labels to the left of the first and last rows of data. These labels cannot be placed in a column with other valid DiPS data. The selected datarows should begin on line 2 – with the headers being on line 1 of the spreadsheet.

>S1	Shipment Id	(may be left justified text or a numeric value)
>S2	Origin Call Id	(may be left justified text or a numeric value).
>S3	Destination Call Id	(may be left justified text or a numeric value)
>S4	3rd Call Id	(may be left justified text or a numeric value)
>S19	Shipment Tag Field	(Up to 40 characters text)
>S104	Shipment Priority	(values from 0-9, higher value is higher priority)
>S23	Skills Required	(text field with Y or N flags for 1-32 skills e.g. YYYNNNY is skills 1,2,3,7 required)
>S20	Total Cost of Movement	(£££.pp – needs to be a whole no. e.g. 12350 for £123.50)

>S5	Earliest Time Available for collection	(may be numeric or time format (hh:mm:ss))
>S105	Earliest Date Available for collection	(in format ddmmyyyy)
>S205	Booked Time Flag for collection	(**1**=booked time, **O or not used** = not booked))

(Please note that only 1 part of any shipment can be booked)

>S21	Extra Time at collection	(value in minutes)
>S22	Shipment Linked Job	(text field with the ident of an existing shipment to be routed next)
>S6	Latest Time Due for delivery	(may be numeric or time format (hh:mm:ss))
>S106	Latest Date Due for delivery	(in format ddmmyyyy)
>S206	Booked Time Flag for delivery	(**1**=booked time, **O or not used** = not booked))
>S121	Extra Time at delivery (value in minutes)	
>S7	Latest Time Due at 3rd call	(may be numeric or time format (hh:mm:ss))
>S107	Latest Date Due for 3rd call	(in format ddmmyyyy)
>S207	Latest Booked Time Flag for 3rd call	(**1**=booked time, **O or not used** = not booked))
>S221	Extra Time at 3rd call	(value in minutes)
>S8	Collection SDI (delivery instructions)	(left justified text).
>S9	Delivery SDI	(left justified text).
>S10	3rd Call SDI	(left justified text).
>S208	Latest Time Available for collection	(may be numeric or time format (hh:mm:ss))
>S108	Latest Date Available for collection	(in format ddmmyyyy)
>S209	Earliest Time Due for delivery	(may be numeric or time format (hh:mm:ss))
>S109	Earliest Date Due for delivery	(in format ddmmyyyy)
>S210	Earliest Time Due at 3rd call	(may be numeric or time format (hh:mm:ss))
>S110	Earliest Date Due for 3rd call	(in format ddmmyyyy)
>S201	Entry Date	
>S220	Split Shipment Into 2 Parts for planning	(**1**=YES, **O or not used** = NO))
>S101	Shipment Type	use **0** for Daily Planning, **1** for a Dummy for Fixed Routes or **2** for Strategic shipments
>S102	Nominated Days	use 7digit numeric value with 1 or 0 to signify due days for dummy
>S199	1st Call's Pass Through Data for display in user-defined columns	
>S299	2nd Call's Pass Through Data for display in user-defined columns.	
>S399	3rd Call's Pass Through Data for display in user-defined columns	

Product Data or Commodity Range

^>AAA order quantity for product or commodity range AAA

DiPS recognises a Commodity Range header label because it must be centrally justified using the carat symbol ^ . The next character must be the greater than sign >. Finally the label contains the Commodity Range's name. As an example, for the commodity range called FROZEN the demand quantity header would be ^>FROZEN. These commodity ranges or products must exist on the MASS file prior to running the program.

Other Data for Origin and Destination Calls (if required)

For Origin call -

>A23	Grid Reference – either a Numeric EASTING (in which case >A3 is also required) or an Alphanumeric six digit (1km accuracy) SU1234 or an Aplhanumeric eight digit (100m accuracy) SU120340
>A33	Numeric NORTHING (if >A2 is a numeric EASTING).
>A43	Name or Address Line 1
>A53	Address Line 2
>A63	Address Line 3
>A73	Postcode (automatically converts to Grid Reference)
>A83	Address Line 4
>A93	Address Line 5
>R23	Call Opening Time 1 may be numeric or time format (hh:mm:ss)
>R33	Call Closing Time 1 may be numeric or time format (hh:mm:ss)
>R43	Call Opening Time 2 may be numeric or time format (hh:mm:ss)
>R53	Call Closing Time 2 may be numeric or time format (hh:mm:ss)
>R63	Call Day Restrictions
>R73	Call Maximum Vehicle Size
>R83	Call Extra Time (in minutes)
>R93	Call Work Difficulty Class

For Destination Call -

>A2	Grid Reference (see >A23 above for more information)	
>A3	Numeric NORTHING (if >A2 is a numeric EASTING).	
>A102	Longitude	
>A103	Latitude	
>A4	Name or Address Line 1	
>A5	Address Line 2	
>A6	Address Line 3	
>A7	Postcode (automatically converts to Grid Reference)	
>A8	Address Line 4	
>A9	Address Line 5	
>R2	Call Opening Time 1	may be numeric or time format (hh:mm:ss)
>R3	Call Closing Time 1	may be numeric or time format (hh:mm:ss)

>R4	Call Opening Time 2	may be numeric or time format (hh:mm:ss)
>R5	Call Closing Time 2	may be numeric or time format (hh:mm:ss)
>R6	Day Restrictions	
>R8	Extra Time per Visit	
>R9	Work Difficulty Factor	
>R10	Pallet Fill Factor	
>R106	Nominated Days	
>R107	Crew Size Required	
>R108	Delivery Priority	
>R23	Week No. of first Delivery	
>R37	Side Loading Restrictions	(L = left, R = right, F = front, T = tail or appropriate combinations , e.g. L ,RT,LF)
>R47	Banned Vehicle Class 1	(doesn't remove other banned classes)
>R57	Banned Vehicle Class 2	(doesn't remove other banned classes)
>R67	Banned Vehicle Class 3	(doesn't remove other banned classes)
>R77	Banned Vehicle Class 4	(doesn't remove other banned classes)
>R7	Maximum Vehicle Class	
>R11	Explicit Vehicle Class	

3rd Call -

>A24	Grid Reference	(see >A23 above for more information)
>A34	Numeric NORTHING	(if >A2 is a numeric EASTING).
>A44	Name or Address Line 1	
>A54	Address Line 2	
>A64	Address Line 3	
>A74	Postcode	(automatically converts to Grid Reference)
>A84	Address Line 4	
>A94	Address Line 5	
>R24	Call Opening Time 1	may be numeric or time format (hh:mm:ss)
>R34	Call Closing Time 1	may be numeric or time format (hh:mm:ss)
>R44	Call Opening Time 2	may be numeric or time format (hh:mm:ss)
>R54	Call Closing Time 2	may be numeric or time format (hh:mm:ss)
>R64	Call Day Restrictions	
>R74	Call Maximum Vehicle Size	
>R84	Call Extra Time (in minutes)	
>R94	Call Work Difficulty Class	

Loading Strategic or Dummy Shipment Data from Spreadsheet

The File menu option Load Shipments from Excel Spreadsheet will also process and input shipment information directly from an Excel spreadsheet. The preparation of the data must follow a few simple rules

1. Each new SHIPMENT must occupy a unique LINE in the spreadsheet.

2. The columns containing data to be loaded must contain the correct labels as defined below in more detail. Any column not containing this label will be ignored. In this way a selection of columns may be used (e.g. columns A, C, D and F but not B or E).

3. The most left-hand '>... labelled column must be the shipment ident. (NB This does not necessarily have to be column 'A').

4. The data rows read from by DiPS are defined by a pair of >> labels to the left of the first and last rows of data. These labels cannot be placed in a column with other valid DiPS data. The selected data rows should begin on line 2 – with the headers being on line 1 of the spreadsheet.

Shipment Fields

>S1	Shipment Id	(may be left justified text or a numeric value)
>S2	Origin Call Id	(may be left justified text or a numeric value).
>S3	Destination Call Id	(may be left justified text or a numeric value)
>S4	3rd Call Id	(may be left justified text or a numeric value)
>S101	Shipment Type	use **0** for Daily Planning, **1** for a Dummy for Fixed Routes or **2** for Strategic shipments
>S102	Nominated Days	use 7digit numeric value with 1 or 0 to signify due days for dummy
>S19	Shipment Tag Field	(Up to 40 characters text)
>S5	Earliest Time Available for collection	(may be numeric or time format (hh:mm:ss))
>S208	Latest Time Available for collection	(may be numeric or time format (hh:mm:ss))
>S205	Booked Time Flag for collection	(**1**=booked time, **O or not used** = not booked))
(Please note that only 1 part of any shipment can be booked)		
>S21	Extra Time at collection	(value in minutes)
>S209	Earliest Time Due for delivery	(may be numeric or time format (hh:mm:ss))
>S109	Earliest Day Due for delivery	(in numeric format where 0=Same Day, 1 = +1day, 2 = +2days etc)
>S6	Latest Time Due for delivery	(may be numeric or time format (hh:mm:ss))
>S106	Latest Day Due for delivery	(in numeric format where 0=Same Day, 1 = +1day, 2 = +2days etc)
>S206	Booked Time Flag for delivery	(**1**=booked time, **O or not used** = not booked))
>S121	Extra Time at delivery (value in minutes)	
>S210	Earliest Time Due at 3rd call	(may be numeric or time format (hh:mm:ss))
>S110	Earliest Day Due for 3rd call	(in numeric format where 0=Same Day, 1 = +1day, 2 = +2days etc)
>S7	Latest Time Due at 3rd call	(may be numeric or time format (hh:mm:ss))
>S107	Latest Day Due for 3rd call	(in numeric format where 0=Same Day, 1 = +1day, 2 = +2days etc)
>S207	Booked Time Flag for 3rd call	(**1**=booked time, **O or not used** = not booked))
>S221	Extra Time at 3rd call	(value in minutes)
>S220	Split Shipment into 2 Parts for planning	(**1**=YES, **O or not used** = NO))
>S8	Collection SDI (delivery instructions)	(left justified text).
>S9	Delivery SDI	(left justified text).
>S10	3rd Call SDI	(left justified text).
>S23	Skills Required	(Y or N flags for 1-32 skills e.g. YYYNNNY is skills 1,2,3,7 required)
>S22	Shipment Linked Job	(text field with the ident of an existing shipment to be routed next)
>S99	Shipment Pass Through Data for display in user-defined columns	
>S199	1st Call's Pass Through Data for display in user-defined columns	
>S299	2nd Call's Pass Through Data for display in user-defined columns.	
>S399	3rd Call's Pass Through Data for display in user-defined columns	
>S24	Collect Trailer at 1st Call	(**1**=YES, **O or not used** = NO))
>S124	Leave Trailer at 2nd Call	(**1**=YES, **O or not used** = NO))
>S224	Leave Trailer at 3rd Call	(**1**=YES, **O or not used** = NO))

Shipment Frequency & Product Data for Strategic

>S25	Frequency	(total frequency for DCP) **REQUIRED FIELD**
>S125	Week No of 1st Visit	(numeric week no if multi-week DCP)
>S20	Total Cost of Movement	(£££.pp – needs to be a whole no. e.g. 12350 for £123.50)
>S26	Product 1 Delivered at 2nd Call	(total quantity for all visits)
>S126	Product 1 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S27	Product 2 Delivered at 2nd Call	(total quantity for all visits)
>S127	Product 2 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S28	Product 3 Delivered at 2nd Call	(total quantity for all visits)
>S128	Product 3 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S29	Product 4 Delivered at 2nd Call	(total quantity for all visits)
>S129	Product 4 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S30	Product 5 Delivered at 2nd Call	(total quantity for all visits)
>S130	Product 5 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S31	Product 6 Delivered at 2nd Call	(total quantity for all visits)
>S131	Product 6 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S32	Product 7 Delivered at 2nd Call	(total quantity for all visits)
>S132	Product 7 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S33	Product 8 Delivered at 2nd Call	(total quantity for all visits)
>S133	Product 8 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S34	Product 9 Delivered at 2nd Call	(total quantity for all visits)
>S134	Product 9 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S35	Product 10 Delivered at 2nd Call	(total quantity for all visits)
>S135	Product 10 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S36	Product 11 Delivered at 2nd Call	(total quantity for all visits)
>S136	Product 11 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)
>S37	Product 12 Delivered at 2nd Call	(total quantity for all visits)
>S137	Product 12 Collected at 2nd Call	(total quantity for all visits – product then taken onto 3rd call if applicable)

For Profiled Data Studies

>S226	Product 1 Delivery Profile
>S326	Product 1 Collection Profile No.
>S227	Product 2 Delivery Profile No.
>S327	Product 2 Collection Profile No.
>S228	Product 3 Delivery Profile No.
>S328	Product 3 Collection Profile No.
>S229	Product 4 Delivery Profile No.
>S329	Product 4 Collection Profile No.
>S230	Product 5 Delivery Profile No.
>S330	Product 5 Collection Profile No.
>S231	Product 6 Delivery Profile No.
>S331	Product 6 Collection Profile No.
>S232	Product 7 Delivery Profile No.
>S332	Product 7 Collection Profile No.
>S233	Product 8 Delivery Profile No.
>S333	Product 8 Collection Profile No.
>S234	Product 9 Delivery Profile No.
>S334	Product 9 Collection Profile No.
>S235	Product 10 Delivery Profile No.
>S335	Product 10 Collection Profile No.
>S236	Product 11 Delivery Profile No.
>S336	Product 11 Collection Profile No.
>S237	Product 12 Delivery Profile No.
>S337	Product 12 Collection Profile No.

For Dummy Shipments - Product Data or Commodity Range

^>AAA order quantity for product or commodity range AAA

DiPS recognises a Commodity Range header label because it must be centrally justified using the carat symbol ^ . The next character must be the greater than sign >. Finally the label contains the Commodity Range's name. As an example, for the commodity range called FROZEN the demand quantity header would be ^>FROZEN. These commodity ranges or products must exist on the MASS file prior to running the program.

Other Data for Origin and Destination Calls
(if required or call data may be loaded using normal strategic spreadsheet prior to shipment loading)

For Origin call -

>A23 Grid Reference –
either a Numeric EASTING (in which case >A3 is also required)
or an Alphanumeric six digit (1km accuracy) SU1234
or an Aplhanumeric eight digit (100m accuracy) SU120340
>A33 Numeric NORTHING (if >A2 is a numeric EASTING).
>A43 Name or Address Line 1
>A53 Address Line 2
>A63 Address Line 3
>A73 Postcode (automatically converts to Grid Reference)
>A83 Address Line 4
>A93 Address Line 5
>R23 Call Opening Time 1 may be numeric or time format (hh:mm:ss)
>R33 Call Closing Time 1 may be numeric or time format (hh:mm:ss)
>R43 Call Opening Time 2 may be numeric or time format (hh:mm:ss)
>R53 Call Closing Time 2 may be numeric or time format (hh:mm:ss)
>R63 Call Day Restrictions
>R73 Call Maximum Vehicle Size
>R83 Call Extra Time (in minutes)
>R93 Call Work Difficulty Class

For Destination Call -

>A2 Grid Reference (see >A23 above for more information)
>A3 Numeric NORTHING (if >A2 is a numeric EASTING).
>A4 Name or Address Line 1
>A5 Address Line 2
>A6 Address Line 3
>A7 Postcode (automatically converts to Grid Reference)
>A8 Address Line 4
>A9 Address Line 5
>R2 Call Opening Time 1 may be numeric or time format (hh:mm:ss)
>R3 Call Closing Time 1 may be numeric or time format (hh:mm:ss)
>R4 Call Opening Time 2 may be numeric or time format (hh:mm:ss)
>R5 Call Closing Time 2 may be numeric or time format (hh:mm:ss)
>R6 Day Restrictions
>R8 Extra Time per Visit
>R9 Work Difficulty Factor
>R10 Pallet Fill Factor
>R106 Nominated Days
>R107 Crew Size Required
>R108 Delivery Priority
>R23 Week No. of first Delivery
>R37 Side Loading Restrictions (L = left, R = right, F = front, T = tail or appropriate combinations , e.g. L ,RT,LF)
>R47 Banned Vehicle Class 1 (doesn't remove other banned classes)
>R57 Banned Vehicle Class 2 (doesn't remove other banned classes)
>R67 Banned Vehicle Class 3 (doesn't remove other banned classes)
>R77 Banned Vehicle Class 4 (doesn't remove other banned classes)
>R7 Maximum Vehicle Class
>R11 Explicit Vehicle Class

3rd Call -

>A24 Grid Reference (see >A23 above for more information)
>A34 Numeric NORTHING (if >A2 is a numeric EASTING).
>A44 Name or Address Line 1
>A54 Address Line 2
>A64 Address Line 3
>A74 Postcode (automatically converts to Grid Reference)
>A84 Address Line 4
>A94 Address Line 5
>R24 Call Opening Time 1 may be numeric or time format (hh:mm:ss)
>R34 Call Closing Time 1 may be numeric or time format (hh:mm:ss)
>R44 Call Opening Time 2 may be numeric or time format (hh:mm:ss)
>R54 Call Closing Time 2 may be numeric or time format (hh:mm:ss)
>R64 Call Day Restrictions
>R74 Call Maximum Vehicle Size
>R84 Call Extra Time (in minutes)
>R94 Call Work Difficulty Class

Loading Order & Shipment Data from CSV Files

To complement the existing DiPS option to load Order data for daily planning using Microsoft Excel spreadsheets a new routine has been developed to allow Orders and also Shipments to be loaded directly from a CSV (comma separated) file.

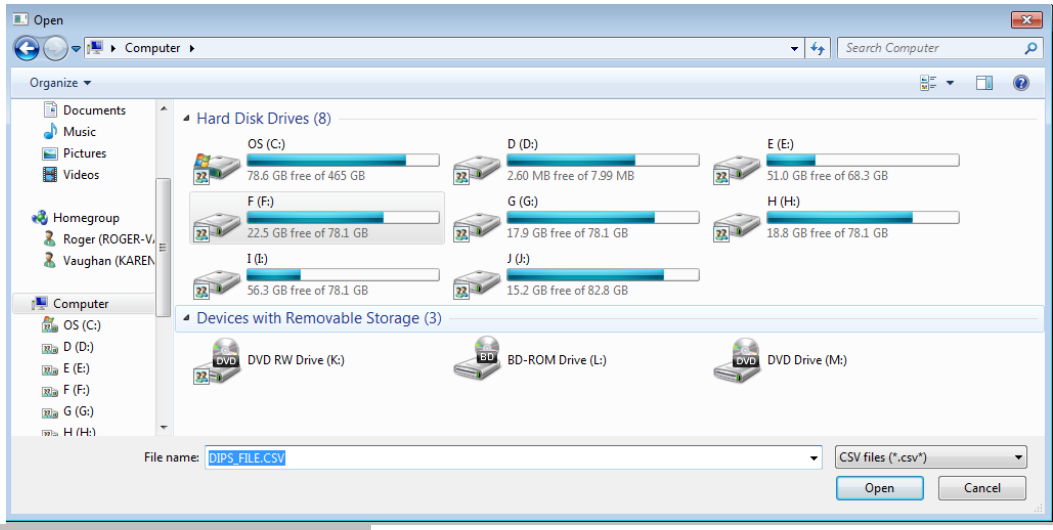
This option avoids any specific formatting of columns to add additional columns and rows or having to put column headers on the data.

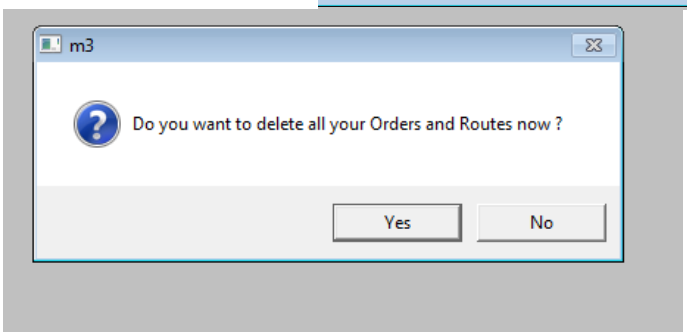
The File menu option Load Orders from CSV will process and input order information directly from the chosen file.

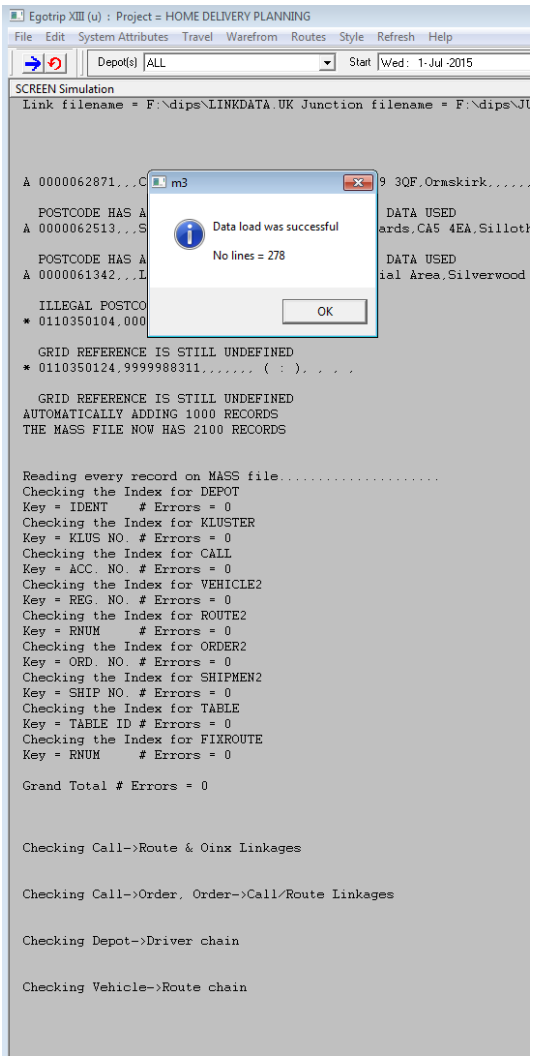
This option is only available for specific report styles defined in the File, Study, Settings dialog. The style ORDERCSV can be used if necessary to enable the option.

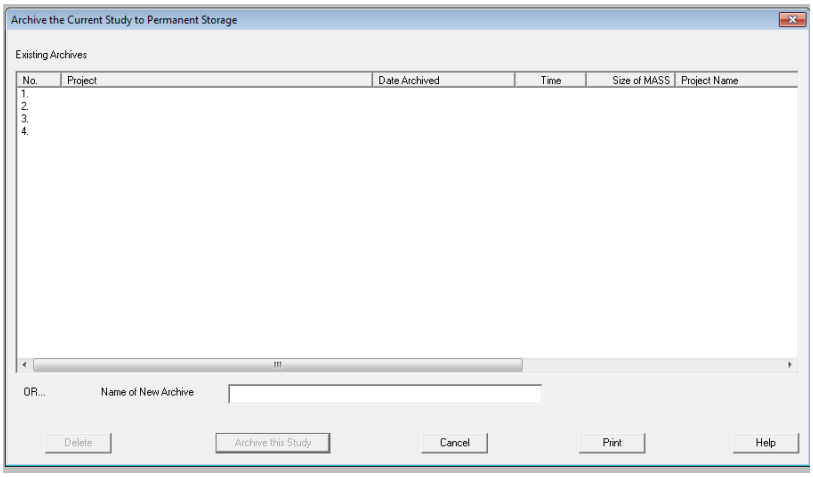
On running the menu an initial dialog will appear to select the CSV file to be loaded, followed by the Delete option and Archive Existing Study dialogs (see below)

Pick the options as required.







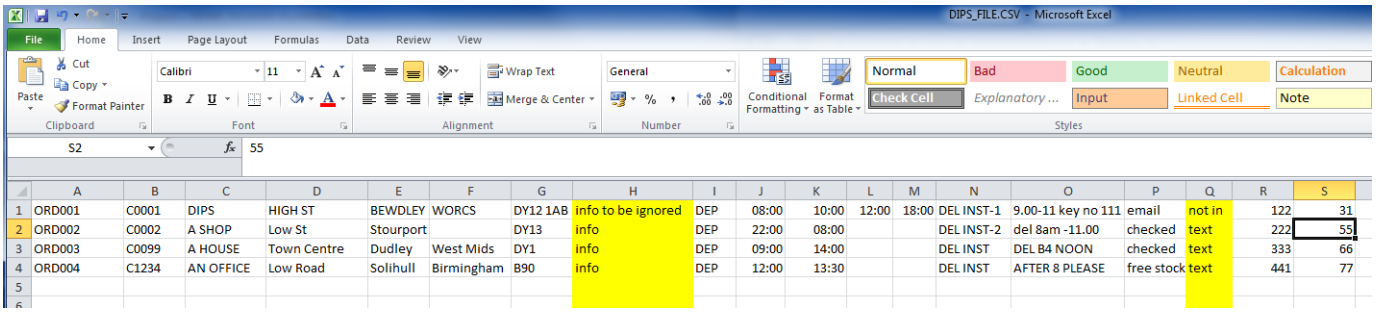


Once loaded, a Dialog will appear in front of the progress screen with a total of the number of Order lines loaded.

Data Files and Configuration

The program accepts CSV files like those in the examples below. They can be produced by export or report routines or even within Excel spreadsheets if necessary. They can contain columns in any sequence and even columns of data to be ignored for planning in DiPS.

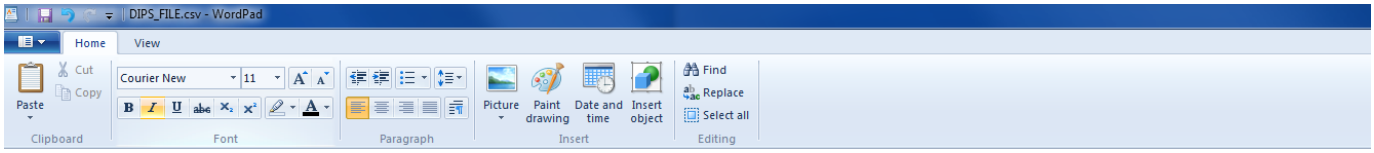
Sample File Viewed in Excel



DIPS_FILE.CSV - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	ORD001	C0001	DIPS	HIGH ST	BEWDLEY	WORCS	DY12 1AB	info to be ignored	DEP	08:00	10:00	12:00	18:00	DEL INST-1	9.00-11 key no 111	email	not in	122	31
2	ORD002	C0002	A SHOP	Low St	Stourport		DY13	info	DEP	22:00	08:00			DEL INST-2	del 8am -11.00	checked	text	222	55
3	ORD003	C0099	A HOUSE	Town Centre	Dudley	West Mids	DY1	info	DEP	09:00	14:00			DEL INST	DEL B4 NOON	checked	text	333	66
4	ORD004	C1234	AN OFFICE	Low Road	Solihull	Birmingham	B90	info	DEP	12:00	13:30			DEL INST	AFTER 8 PLEASE	free stock	text	441	77
5																			

Sample File as seen in WordPad



DIPS_FILE.csv - WordPad

```
ORD001,C0001,DIPS,HIGH ST,BEWDLEY,WORCS,DY12 1AB,info to be ignored,DEP,08:00,10:00,12:00,18:00,DEL INST-1,9.00-11 key no 111,email,not in,122,31
ORD002,C0002,A SHOP,Low St,Stourport,,DY13,info,DEP,22:00,08:00,,,DEL INST-2,del 8am -11.00,checked,text,222,55
ORD003,C0099,A HOUSE,Town Centre,Dudley,West Mids,DY1,info,DEP,09:00,14:00,,,DEL INST,DEL B4 NOON,checked,text,333,66
ORD004,C1234,AN OFFICE,Low Road,Solihull,Birmingham,B90,info,DEP,12:00,13:30,,,DEL INST,AFTER 8 PLEASE,free stock,text,441,77
```

The required columns are defined by using a configuration file found in the DIPS folder – CSV2DIPS.DAT.
This is a text file that can be edited by WordPad or Notepad for example and defines the required columns and what they represent in DiPS.

The Spreadsheet loading headers (see previous sections for available list) are employed followed by the relevant column number.

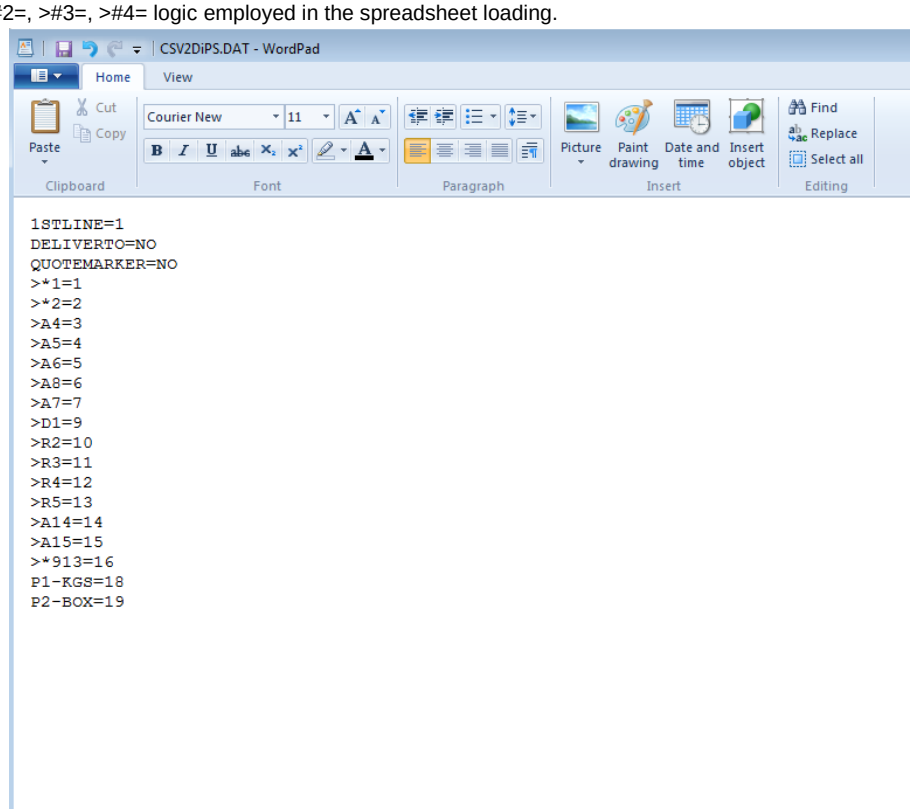
In the example below the Order No >*1 is in the first field, the Call ID >*2 is in the second field, address lines >A4,>A5,>A6,>A7 are next and so on. The last two configuration lines define the Products allowing quantities to be loaded: KGS is product 1 and BOX is product 2 (can be repeated up to P12-xxxx). Individual Order commodity lines can also be defined from fields using the >#1=, >#2=, >#3=, >#4= logic employed in the spreadsheet loading.

By not defining any fields in the file, it is possible to ignore any data not required (data shown in yellow above in H and Q fields 8 and 17 in the sample)

The first 3 lines in the example above demonstrate the available options for loading data from the file.

1STLINE defaults =1 so that data is read from the first line of the file. This can be set to 2, 3 etc. so that any fields headers or unnecessary data rows are ignored.

DELIVERTO defaults to NO so that the address lines on the file are added to the DiPS CALL as normal. Set this to YES to add the address lines for each order to the Order Deliver To tab (used in cases where the delivery addresses are



CSV2DiPS.DAT - WordPad

```
1STLINE=1
DELIVERTO=NO
QUOTEMARKER=NO
>*1=1
>*2=2
>A4=3
>A5=4
>A6=5
>A8=6
>A7=7
>D1=9
>R2=10
>R3=11
>R4=12
>R5=13
>A14=14
>A15=15
>*913=16
P1-KGS=18
P2-BOX=19
```

not unique and each call point can have multiple addresses for the same ID)

QUOTEMARKER default is YES – the program expects “” markers around any text fields such as address lines, delivery instructions and so forth.
SHIPMENT default is NO – if set to YES the routine will look to create Shipment s (collect&deliver movements) as well as normal Orders. To create a shipment there must be a >S2 field defined to look in a particular column and there must be some text in that column (if it is blank a normal order is created).

ACCUMORDERQTY default=NO – if set to YES this will sum up all of the order product quantity figures on each line and import an overall total for the defined Order No.

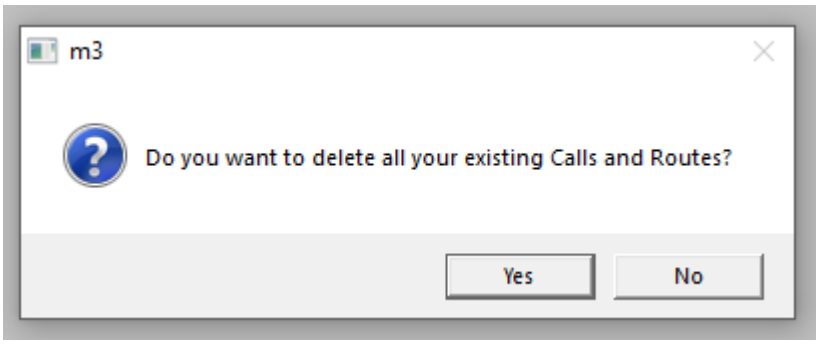
It is possible to add multiple data columns together to merge into one entry for a DiPS field (such as Address or Delivery Instructions etc). Using the **&** character between two or more data columns will combine them together.
As an example using the >*2 Call ID indicator combine columns 13 and 5 together to form the required unique text.

Loading Strategic Data from CSV File

To complement the existing DiPS options that employ Microsoft Office & Microsoft Excel spreadsheets, a new routine has been developed to allow load strategic data directly from .CSV commas separated file formats (thus negating the necessity to have a version of Excel available). This option avoids any specific formatting of columns to add additional columns and rows or having to put column headers on the data.

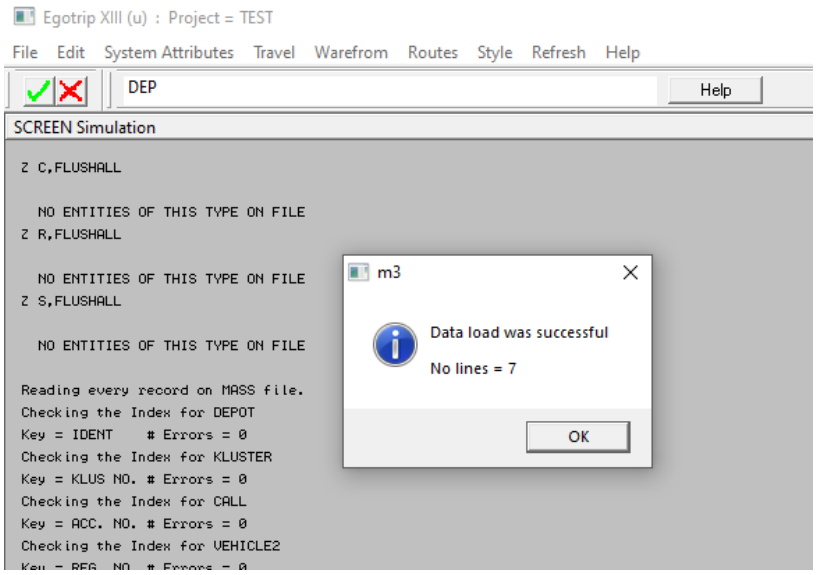
The File menu option Load Data from CSV will process and input Call / Shipment information directly from the chosen file.

On running the menu option, an initial dialog will appear to select the CSV file to be loaded, followed by the Delete option and Archive Existing Study dialogs (see below). This provides options to remove existing study data whilst keeping depots and parameters and ensuring that the current existing study files are archived



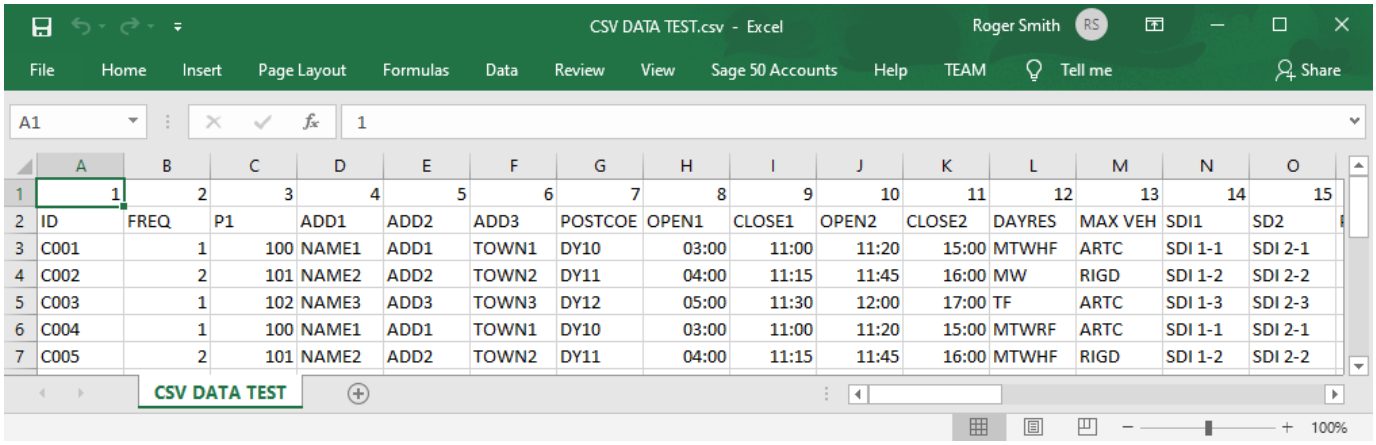
Pick the options as required.

Once loaded, a Dialog will appear in front of the progress screen with a total of the number of lines loaded.



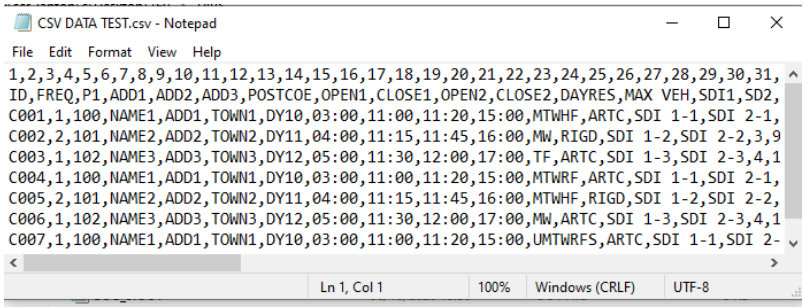
Data Files and Configuration

The program accepts CSV files like those in the examples below. They can be produced by export or report routines or even within Excel spreadsheets if necessary. They can contain columns in any sequence and even columns of data to be ignored for planning in DiPS. Sample File Viewed in Excel :-



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	ID	FREQ	P1	ADD1	ADD2	ADD3	POSTCOE	OPEN1	CLOSE1	OPEN2	CLOSE2	DAYRES	MAX VEH	SDI1	SD2
3	C001	1	100	NAME1	ADD1	TOWN1	DY10	03:00	11:00	11:20	15:00	MTWHF	ARTC	SDI 1-1	SDI 2-1
4	C002	2	101	NAME2	ADD2	TOWN2	DY11	04:00	11:15	11:45	16:00	MW	RIGD	SDI 1-2	SDI 2-2
5	C003	1	102	NAME3	ADD3	TOWN3	DY12	05:00	11:30	12:00	17:00	TF	ARTC	SDI 1-3	SDI 2-3
6	C004	1	100	NAME1	ADD1	TOWN1	DY10	03:00	11:00	11:20	15:00	MTWRF	ARTC	SDI 1-1	SDI 2-1
7	C005	2	101	NAME2	ADD2	TOWN2	DY11	04:00	11:15	11:45	16:00	MTWHF	RIGD	SDI 1-2	SDI 2-2

Sample File as seen in WordPad



The required columns are defined by using a configuration file found in the DIPS folder – DATA2DIPS.DAT.
This is a text file that can be edited by WordPad or Notepad for example and defines the required columns and what they represent in DiPS.

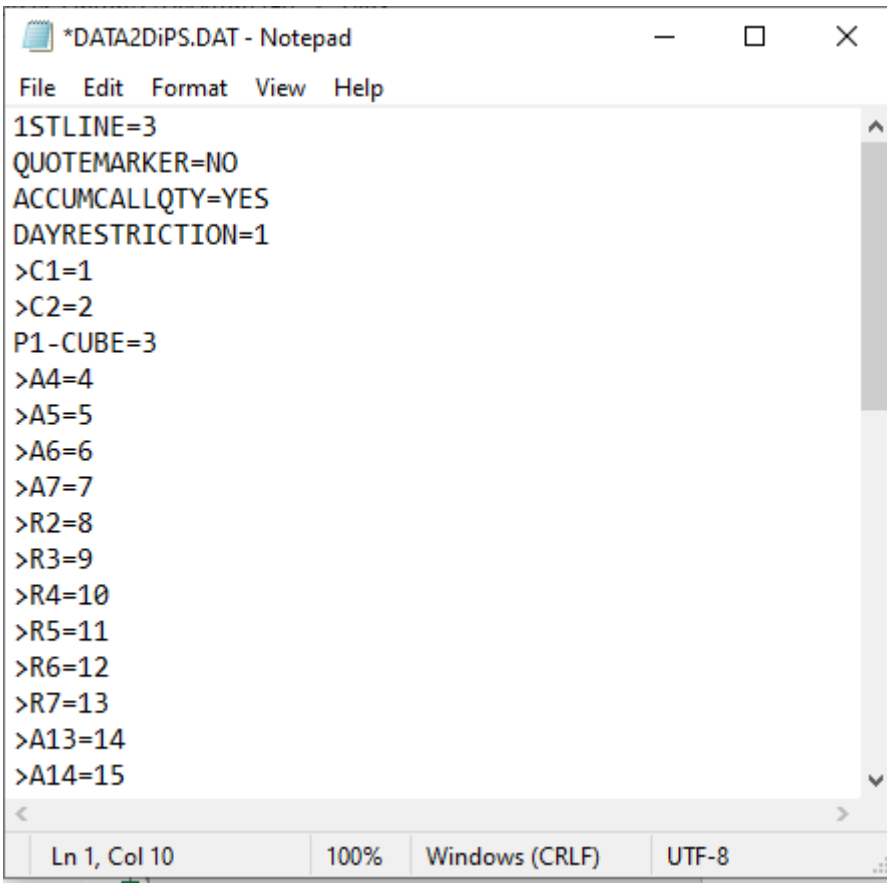
The existing Spreadsheet loading headers are employed followed by the relevant column number.

In the example shown the Call ID >C1 is created from the 1st column of data (C001, C002, C003 etc).
The Call ID frequency >C2 is in the second field, address lines >A4,>A5,>A6,>A7 are also loaded using columns 4-7 and so on.

To set the product label and load quantity, use definitions such as P1-CUBE=3 to set the label and load in the required quantity from column 3.
As usual it is possible to define up to 12 Products with different lines in the config (can be repeated up to P12-xxxx).

By not defining any fields to reference a particular column of information in the file, it is possible to ignore any data not required.

The first 4 lines in the example above demonstrate the available options for loading data from the file.



1STLINE=3 so that data is created using row 3 for the first line of the file. This can be set to 1 or left out if there are no header rows or 2, 3 etc. so that any unnecessary data rows are ignored.

QUOTEMARKER default is NO – it can be set to YES if the program expects “” markers around any text fields such as address lines, delivery instructions and so forth.

ACCUMORDERQTY=YES – if set to YES this will sum up all of the product quantity figures on each line and import an overall total for the defined Call ID (this is similar to the spreadsheet loading options to “Combine”). If excluded from the file or set to NO, the loading process will Replace any existing quantities as is the default on a spreadsheet load.

DAYRESTRICTIONS = 1 – there are different options for loading Call open/close days. In the example setting the value to 1 will decode a text string such as MTWHF to set the Call to be OPEN on Mon, Tue, Wed, Thu & Fri and closed on Sat & Sun. For Sunday please use U and Saturday please use S.
DAYRESTRICTION = 0 (zero) will decode the usual DiPS values of 0 for open, 1 for closed band1, 2 for closed band2 and 3 for closed both bands and produce a weekly day restriction from that.

It is possible to add multiple data columns together to merge into one entry for a DiPS field (such as Address or Delivery Instructions etc). Using the **&** character between two or more data columns will combine them together. As an example using the >A13 Call Delivery Instructions indicator set to 13&5 would combine columns 13 and 5 together to form the required unique text (i.e. >A13=13&5)

Sample files for loading Call data can be found in the DiPS folder following installation of the software.

CALL-DATA2DiPS.DAT and CSV CALL TEST.CSV

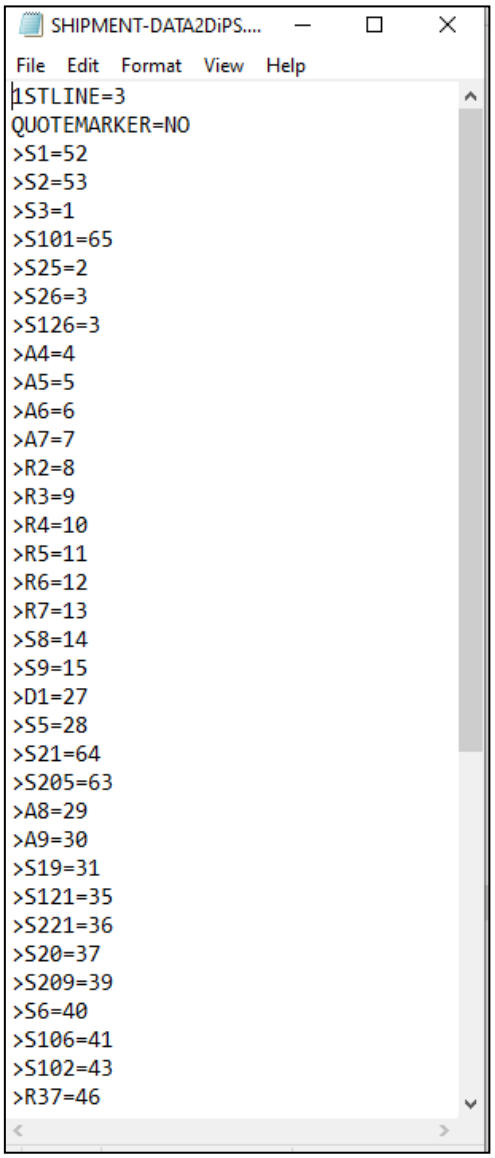
Please refer to the normal Help or User Manual sections for available >C , >A or >R headers or contact DiPS for more advice if necessary.

Loading Shipment Data from CSV Files

This routine will look to create strategic Shipments (collect & deliver movements) as well as normal Calls if required. To create a shipment there must be >S1 and >S2 fields defined as well as the other shipments headers using >S terminology. Please refer to the normal Help or User Manual sections for available headers or contact DiPS for more advice if necessary.

Sample files for loading Shipments data can be found in the DiPS folder following installation of the software :-

SHIPMENT-DATA2DiPS.DAT
and
CSV SHIPMENT TEST.CSV



Loading data from DiPS Macro Files

The DiPS Macro language was established in the earliest days of system development. Each line of data input must be formatted correctly to include pre-defined comma separated values with an initial key letter to define the type of data - for example D for a depot, C for a call, or R to change times or other restrictions. The input of data into Kingpin has largely been superseded by the use of spreadsheet interfaces, but still remains a useful method of amending existing values, or transferring new data especially when concerned with data files extracted from other systems (such as mainframes).

Contact DiPS for more information is available on each macro currently available. Lines of macro data may be created in text files using a text editor program or saved from other studies using the File, Study, Save as macros option.

The appropriate tick boxes may be employed to create data files for Depot or Call data using the CALL, DEPOT, ADDRESS and RESTRICTIONS macros.

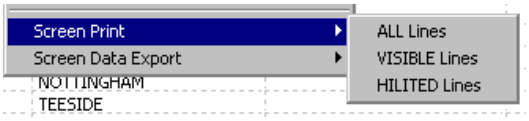
To transfer basic study setup data (System Attributes tick-box) other parameters (such as loading/unloading rates) may be input or changed using the following macros :-

HOURS	for driving hours, breaks etc.
LIMITS	for max no routes, max length in days etc.
QUEUE	for setting route planning algorithm keys
SCALES	for setting scales parameters such as detours etc.
VEHICLE	for adding vehicle fleets and creating new classes
QUEUE	for setting costing factors to be included in warefrom
SCALES	for setting depot maximum stem time
YPARAM	for setting depot stem ratio figures for warefrom
RESTRICTIONS	for changing opening times, vehicle access etc.
XFER	for transferring calls from depot to depot
ZERO	for deleting call, routes, depots, vehicles etc.
NETWORK	for changing road speeds parameters
UNIT	for changing vehicle capacities
WORK	for changing unloading / loading rates and fixed times
PRODUCT	for changing product labels and mixing capability

Printing Screens and Exporting Data

Printing Screens

From Text Panels in all modes there are a number of print options for printing the screen as displayed (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB.

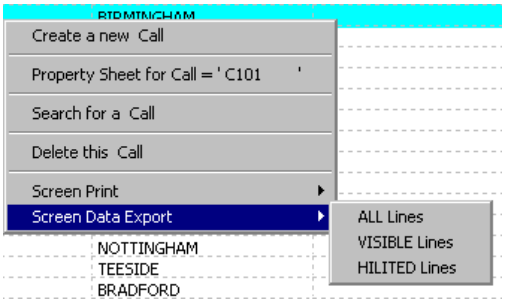


ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB.

Any information hidden on either the left or right hand sides due to the position of the window borders will be printed.

Exporting Data

This facility is available from using the Screen Data Export menu choices available after clicking the mouse RHB; enabling selected information to be exported in three ways using the "file save as type" in the dialog box – launching Excel and exporting data directly, as a normal text file, and directly into an Access database. Options for exporting the screen as displayed (i.e. with all the columns currently selected in the Style options).include exporting a single page or the entire list of data and are selected using the menu choices available after clicking the mouse RHB.

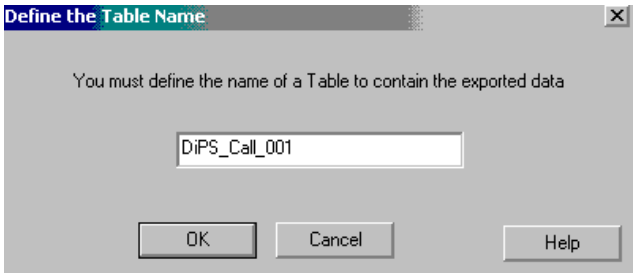


ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be exported.

By default the output file is called DIPSDATA and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

The initial type selected is an Excel spreadsheet. Selecting this option will launch Excel in a window and export the indicated data into a sheet called DiPS_Call or DiPS_Depot depending upon the type of data exported. The appropriate DiPS headers for each column are also transferred onto the sheet to ease re-loading any amended data from this file. A progress indicator will run if necessary. This feature is only available in later versions of Microsoft products.

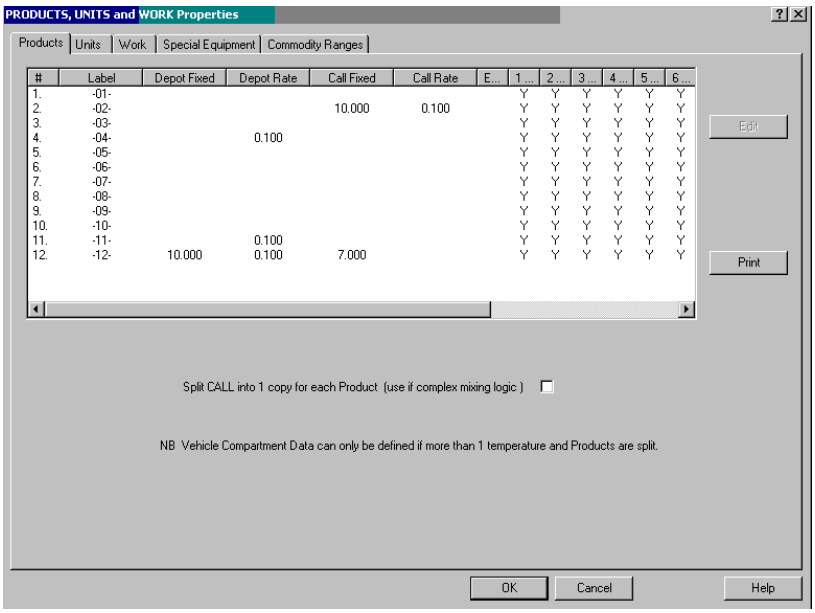
For an Access database the information is exported as tables. Only those fields in use in the headers option will be added to the database. When a database table is created a dialog will appear asking for a Table Name. The default name will have a sequence number on the end to ensure that all the existing tables will remain intact. Select a new name each time if the existing information is required for future reference.



For a text file each of the columns of data is separated by a comma and can be loaded using any File, Open routines (for Excel use *delimited* and *comma* at the Import Wizard prompts). The file extension is .csv.

Products, Units and Work

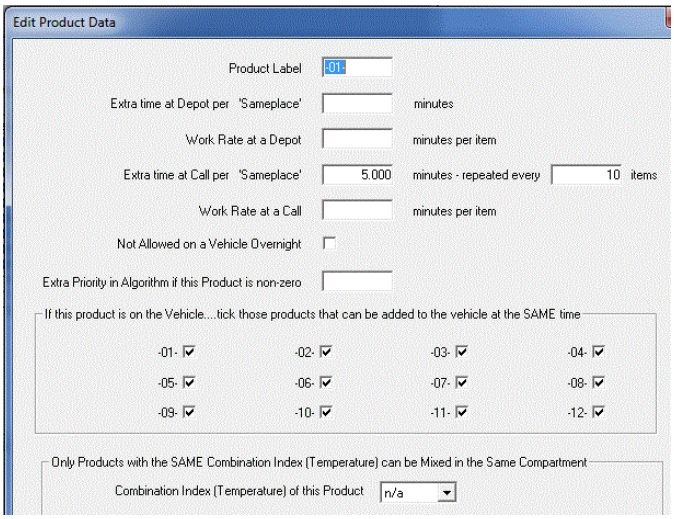
Products



Product groups are used in order to provide a delivery demand factor for calls. Up to 12 different products may be specified to allow discrimination between types of delivered or collected goods in terms of their loading/unloading rates, space required in a vehicle load, and ability to mix together on the same trip. The following parameters are available.

Product Labels - sets a name for each product type
Depot Rate - sets a depot loading or unloading rate for each product type
Call Fixed Time - sets a fixed time to be spent at each delivery for each product type
Call Rate - sets a delivery point loading or unloading rate for each product type
Extra Priority - sets up priority values for each product type
Product Combination Index (Temp) - designed for use with fixed/moveable compartment logic to define which products can be mixed within the same compartment on a vehicle
Product Mixing - sets up product mixing capabilities for each product type

Product values also convert into vehicle Unit information so that the planning programs can relate demand to vehicle class capacities.
To change any product's details select it by clicking on the required No. from 1 to 12 in # column and modify the values before clicking on the OK button. To send a copy of the settings to the default printer use the Print button.



Product Labels

By default product labels are named **-01-** to **-12-** . However, up to four characters may be used to identify product types if required. Simply delete the default label and replace with the required name. Any mixture of text and numerics can be used - with the exception of punctuation marks such as colons commas , and brackets ( ) . If certain products are not used within a study delete the default label to leave it blank. These products will now not appear in any output information produced.

Depot Fixed Time (Extra Time at Depot per Sameplace)

The depot fixed time value is specified in whole minutes and is added once into the work time at a every visit to a depot for each call on that trip (eg 3 calls with a fixed time of 5 would add 15 minutes). The value can be used for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery. By default every call ident is unique. However the Sameplace logic in Route Parameters may be used to will define what represents a call, whether it is an individual call ident or a number of calls with matching criteria such as postcodes.

Depot Work Rate

The Depot Rate value may be specified in up to 3 decimal places and represents the time required in minutes to load/unload one item of the product or unit at the DEPOT. The Depot Loading Formats set in the work page are used for specifying at what stage depot rates are considered (i.e. before first trip / between trips etc.). Values can be set for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery.

If product 1 to be loaded is 10 and has a rate of 1.000

and product 2 to be loaded is 10 and has a rate of 2.000

then the depot total variable time = 30 minutes

If product 1 to be unloaded is 100 and has a rate of 0.100

and unit 1 unloaded is 10 and has a rate of 2.000

then the depot total variable time = 30 minutes (i.e. 100 x 0.1 + 10 x 2)

The time spent at the depot is equal to the sum of the Depot Extra Time Per Visit and variable time elements.

If the Depot has an Extra Time per Visit = 10

and a vehicle trip has Unit1 required = 100

and the variable rate per Unit1 = 1

then the total DEPOT time will be 10 + (100 x 1) = 110 minutes

This variable work element may be factored for different classes of depot by use of the Work Difficulty Factors to multiply calculated values.

Call Fixed Time (Extra Time at Call per Sameplace)

The fixed time value is specified in whole minutes and is added into the work time at a Call. The value can be used for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery. By default every call ident is unique. However the Sameplace logic in Route Parameters may be used to will define what represents a call, whether it is an individual call ident or a number of calls with matching criteria such as postcodes.

If Unit1 has a call fixed time	=	10
and a call has product 1 fixed time	=	8
and also a product 2 fixed time	=	5
then the call's total fixed delivery time	=	23 minutes

It is possible to set threshold values. If required, a quantity value can be entered at which point the fixed time for the product is repeated. For example, using a value of 10 items with an Extra Time in minutes figure of 5.000 would give and single value of 5 minutes for values of 1-10, 10 minutes would be used for 11-20 items as the value would repeat once, with 15 minutes for 21-30 items using another repeat and so on. The functionality is designed to replicate situations where repeat times are necessary since the driver has to return to the vehicle to pick up another batch of items to deliver.

Call Work Rate

The Call rate value may be specified in up to 3 decimal places and represents the time required in minutes to load/unload one item of the product or unit at a CALL or KLUSTER point. The value can be used for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery.

All Work Times are calculated to an accuracy of 1 decimal place (or tenths of a minute). This applies to all programs and associated output reports have been changed accordingly. This will provide far greater flexibility in the calculation of exact loading or unloading times, especially for small multiple times. Prints will appear as a decimal figure (i.e. 10.5 minutes = 10 minutes 30 seconds). With this facility fixed times for Products or Units can now be specified **and used** in terms of decimal places -

If product 1 required is 100 and has a rate of 1.000

and product 2 required is 100 and has a rate of 2.000

then the call's total variable delivery time = 300 minutes

If product 1 required is 100 and has a rate of 0.100

and unit 1 required is 10 and has a rate of 2.000

then the call's total variable delivery time = 30 minutes (i.e. 100 x 0.1 + 10 x 2)

The time spent at a delivery or collection point is equal to the sum of the Fixed Time and variable time elements.

If Unit1 has a call fixed time = 10

and a call has Unit1 required = 100

and the variable rate per Unit1 = 1

then the call's total delivery time will be 10 + (100 x 1) = 110 minutes

This variable work element may be factored for different classes of delivery point by use of the Work Difficulty Factors to multiply calculated values.

Product not allowed on Vehicle Overnight

The parameter setting available on each product dialog will, if ticked, prevent multi-day routes having the product on the vehicle overnight. This will work both for deliveries or any collections made from calls.

Extra Priority

Extra priority values can be input with regard to any of the twelve product types. Any value input will ensure that calls requiring a delivery or collection of this product type are considered to be of a higher priority in the vehicle scheduling programs, and will thus be more likely to be placed on a route. Use any value between 1 and 96 for this purpose. The higher the value input the more likely the product type is to be routed.

Product Mixing

If certain product types cannot be mixed with others on any trip the product mixing logic may be used to prevent such occurrences. It has been useful in areas such as FRESH, AMBIENT and FROZEN goods for instance. By default there will be a tick for every Product. To prevent a product being mixed with this product on the same vehicle trip, click on the field to amend the setting. It is important to remember that at all the products must mix if they are required on a call screen or else the call will be deferred in the scheduling process. For incompatible product types on certain vehicle classes, the Vehicle Product Carrying capability may be used in conjunction with mixing if required.

Product's Combination Index (Temperature)

The product combination index values are designed for use with compartment logic to define which products can be mixed within the same compartment on a vehicle. *To mix products the index values must be exactly the same as each other*. Any different values will lead to the product being placed in different compartments. For example product index values of 5 for groups -01- and -02- would mean that they could both be delivered from the same compartment, but values of 5 for -01- and 4 for -02- would mean that they would be placed in different compartments. The product temperature parameters are designed for use with moveable bulkhead logic to define which products can be mixed within the same compartment on a vehicle. *To mix products the Temp values must be exactly the same as each other*. Any different values will lead to the product being placed in different compartments. For example product temp values of -5 for groups -01- and -02- would mean that they could both be delivered from the same compartment, but values of -5 for -01- and -4 for -02- (although quite similar) would mean that they would be placed in different compartments separated by a bulkhead.

The normal product mixing parameters are used to define which products may mix together on the same trip whilst the vehicle product parameters are still employed to check whether certain vehicle classes have the ability to carry a certain product group at all.

Split Call into 1 Copy for each Product

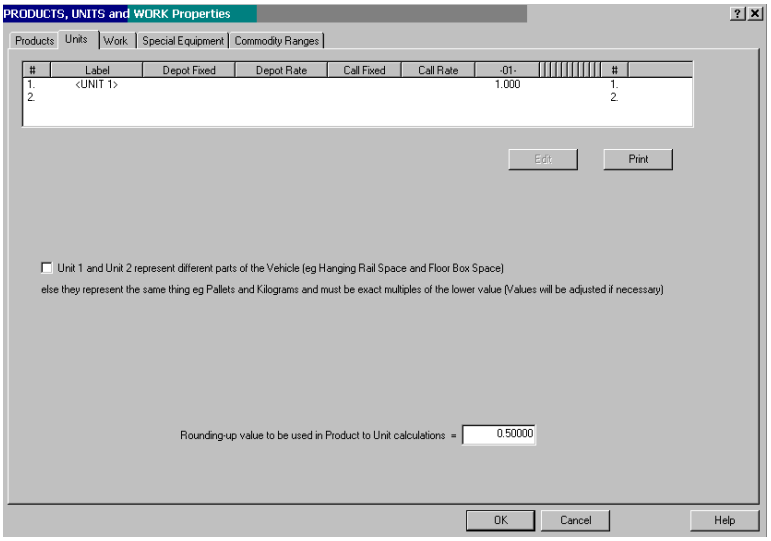
This parameter is designed for use with the DiPS Profiled Model to enable each product type for each CALL to be considered in isolation in the planning programs. It may however be used with ordinary studies to allow each product defined on a single call screen to be planned in the routed algorithm separately if required. This is particularly useful for planning incompatible products such as FROZEN and AMBIENT goods for example.

Please note that in using this facility the same call may receive products from two vehicles even if the products can be carried on the same vehicle type! With a delivery of frozen, chill, and ambient 3 different decisions will be made even though frozen and chill may go on the same vehicle type. By default value is set to OFF. click it to set to ON in order to use the facility.

Units

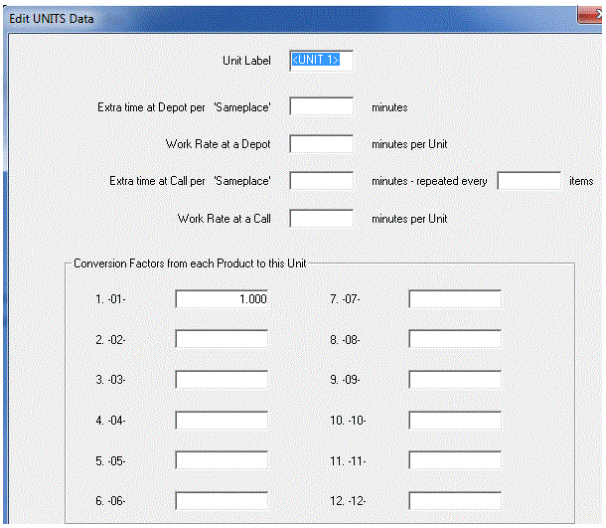
Units are used in conjunction with Products and Vehicle Class names to govern the amounts to be delivered or collected and the rates at which vehicles are loaded and unloaded.

Unit Labels - names the vehicle capacity label to be used (e.g. pallets, KGS etc.)
Unit Conversions - sets the product to unit conversion ratios for each product
Depot Fixed Time - sets a fixed time to be spent at the depot for each call on a trip



Depot Rate - sets a depot loading or unloading rate for each product type
Call Fixed Time - sets a fixed time to be spent at each delivery for each product type
Call Rate - sets a delivery point loading or unloading rate for each product type

To change any Units' details select it by clicking on the required No. from 1 or 2 in # column and modify the values before clicking on the OK button. To send a copy of the settings to the default printer use the Print button.



Unit Labels

Unit labels are used to identify the vehicle capacity types to be used in a study. Any labels input in this field will apply wherever Unit labels appear throughout DiPS. By default unit labels are named **<UNIT 1>** and **<UNIT 2>** . However, up to eight characters may be used to identify vehicle unit classifications if required. Simply delete the default label and replace with the required name. Any mixture of text and numerics can be used - with the exception of punctuation marks such as colons commas , and brackets ( ) . If <UNIT 2> is not used within a study (i.e. the product to unit conversion is blank) DiPS programs will detect this and any output information produced is changed accordingly.

Unit Conversions

Unit conversions define the conversion factor from call's Products into vehicle Units; that is how much each product type will occupy in terms of the maximum capacity set. Calls have delivery requirements in terms of products, whilst vehicle capacities are set in terms of units. The unit values are arrived at by converting the product totals using the appropriate factor set for that product.

If Unit1 / Product1 conversion factor = 0.01
and a call has product 1 per visit = 200
then the call's unit 1 delivered per visit = 2

By default, Product 1 specified on a Call screen converts into UNIT 1 using a factor of 1.000. This default may suffice for most studies undertaken. Where a conversion factor produces a number other than an integer (i.e. not a whole number), the units calculated will be rounded up to the next whole number if the decimal involved is 0.5 or more. When calculating the total units to be delivered or collected, the system will sum all of the individual factored product totals to arrive at an overall figure. It is useful to remember that vehicle capacities are measured in terms of units and not products so that the units for each drop, not product values, will determine when the vehicle is fully loaded.

For Depot Fixed Time, Depot Work Rate, Call Fixed Time & Call Work Rate See previous sections on Products

Unit1 and Unit2 represent…..
The parameter **Unit1 and Unit2 represent different parts of the vehicle** is used to control the calculation of remainders for calls with frequencies greater than 1. By default with the parameter not ticked, if used both vehicle units represent the same product on a vehicle with different conversion rates (eg for the same product, unit 1 is set to be pallet spaces and unit2 is set to be kilograms). In this case when routing, the vehicle units are adjusted to be an exact multiple of the smallest unit so that any remainders are eliminated. For example, if a call has a frequency=5 and a number of Pallets = 29, the routed quantity would be set to freq=5, pallets per visit = 6. If the parameter is ticked and set, unit1 and unit2 represent different parts of a vehicle. For example product1 would convert into a unit1 representing hanging rail space or volume on a vehicle, whilst product2 may convert into unit2 representing floor box space or area. In this case, the units would not be adjusted.

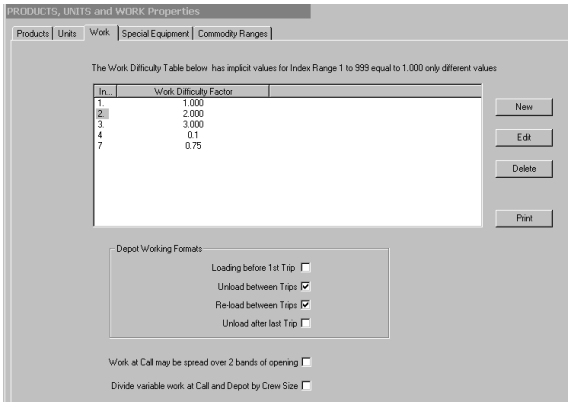
Set Product Rounding
This parameter allows the definition of Rounding-up value to be used in the calculation of vehicle units from Products. As an example if a call requires 3 visits per week with a total product of 10, a rounding value of 0.30000 would calculate 4 units per visit (rounding up 3.33333). The default value is 0.50000, but any value between 0.0001 and 0.99999 may be input.

Displaying Pallet Quantities on Route Panels

If Vehicle Unit labels are set to either "PALL-10" or "PALL-100", it is possible to calculate pallet quantities at a more detailed level and then display a modified whole pallets figure on a route panel to make the values easier to read. As DiPS units are calculated in whole numbers it is possible work in factors of 100ths of a Pallet where small product quantities may make up a pallet space and then display the value as whole pallets (in essence divided by 100). Multiple drops may be placed on a single pallet in this case.

On Edit, Products Units and Work set either Vehicle Unit1 or Unit2 to have this specific text and all product-to-unit conversion factors accordingly. For example using PALL-100 the program will add vehicle quantities to sum say 656 units on a vehicle capacity of 800 units. The display will show PALLETS = 6.5 (80.6%) rather than 656. All totals and the %Fill figure are proportioned accordingly.

Work



Work values are used to identify which parameters affect vehicle load processing time at depot and delivery point, and how much time is spent on these activities. Work parameters may be specified in terms of -

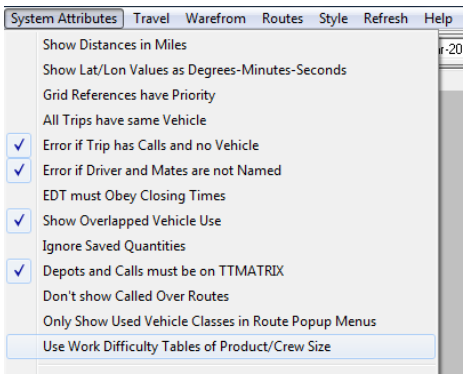
Depot Loading Formats - specify at what stage depot rates are considered
Work Difficulty Factors - sets a factor for delivery point loading or unloading rate
Work Spread over Two Bands of Opening - allow work at a delivery point to be split
Divide Variable Work by Crew Size – allow work times to be split between crew

Work Difficulty Factors

This value is used to apply a factor to one of the 999 possible types that may be specified on any Call or Depot screen as Work Difficulty Classes. These values will modify the variable work rate at collection/delivery points and depots. For example if a class of 2 has a Work Difficulty Factor value set to 0.500, the variable work element will be halved for any Call or Depot with a Work Class set to 2. Up to 3 decimal places may be used when defining the appropriate multiplier. Any class number may be used to define a factor greater or less than 1. For instance class 2 may have a factor of 0.1, whereas class 3 may have a value of 10.000 . By default class 1 is set to 1.000 (i.e. no modification) and it cannot be changed. It is usual for class 1 to represent the base position of 1.000 and for other factors to be used as required since class 1 will be the normal default value given to all depots and calls on creation.

To change any details select by clicking on the required No. using the # column and then edit to modify the value before clicking on the OK button. To remove a class click Delete. To create a new class click on the New button and set the class no. (from 2-999) and relevant factor. To send a copy of the settings to the default printer use the Print button. For depot properties this factor will affect the variable turn-round time if set using the Depot Working Formats and Depot Rate.

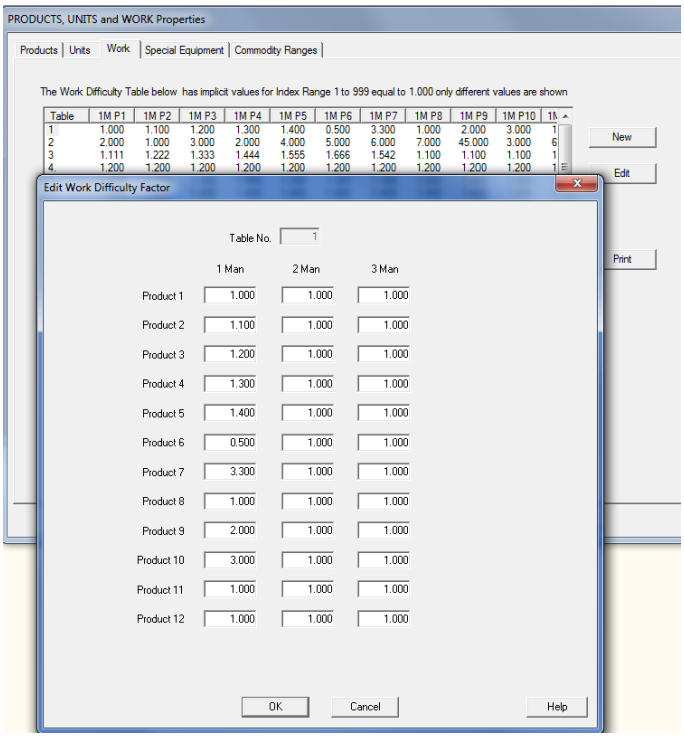
For more detailed work time calculations, Work Difficulty Tables can now be established and employed rather than the standard work class values. Work Difficulty Tables allow the entry of individual factors for each of the twelve products by crew size on the vehicle.



The normal Default Work Difficulty Factor still applies for non-daily studies and wherever individual values are not set.

To set Work Tables for the study, tick the “Use Work Difficulty Tables” on the System Attributes menu and confirm when applicable.

Work tables will then be created for any Work Classes that currently exist on the file using the same values for all entries.



Up to 999 tables may be established using values to 3 decimal places for each of the 12 products and the three different crew sizes. Click New to create an extra entry or Edit to modify existing values using the dialog shown below.

As an example of the new feature, for “1 Man” if the value of 3.000 is entered for all products but an individual factor of 5.000 has been set for product 2, the work time for orders at this call are calculated at 5x the rate for product 2 plus 3x the rate for all other products if the vehicle allocated to the route for that call has a Crew Size = 1. These calculations are done for both for rates set on the Products, Units & Work dialog and on individual vehicle types.

The factors can be loaded from spreadsheet using individual columns for each value. The appropriate headers are >]1 for the Table No. and then for the twelve products for 1 Man : >]101, >]102, >]103, >]104, >]105, >]106, >]107, >]108, >]109, >]110, >]111 and >]112. For 2 Man use >]201, >]202, >]203, >]204, >]205, >]206, >]207, >]208, >]209, >]210, >]211 and >]212. For 3 man use >]301, >]302, >]303, >]304, >]305, >]306, >]307, >]308, >]309, >]310, >]311 and >]312.

Depot Loading Formats

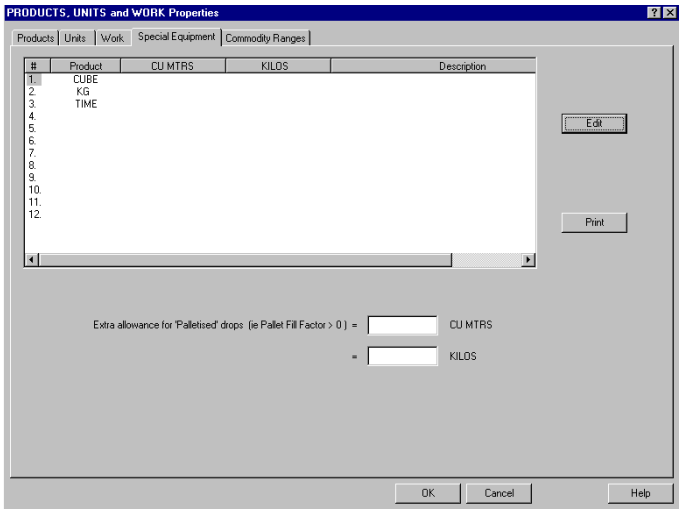
Depot Loading Formats are used for specifying at what stage Depot Rates are considered (i.e. before first trip / between trips etc.). Tick the box to enable calculations of variable work time at that point. The default settings are to consider depot rates between trips only.

Loading before 1st Trip - this will allow for pre-loading of the delivery quantities (either products or units) to be considered as part of the driver's shift time.
Unload between Trips - this will allow for the unloading of any collected quantity (negative vehicle units) made on the trip just completed.
Re-load between trips - this will allow for the loading of any delivery quantity (vehicle units) made on the to be made on the subsequent trip.
Unload after last Trips - this will allow for the unloading of any collected quantity (negative vehicle units) made on the last trip of the day.

Work at Call may be spread over 2 Bands of Opening
This parameter will govern the ability to spread work time at a Call point over two shifts. By default it is set OFF which forces all work at a single delivery point to be completed in the shift it arrives in.

Divide Variable Work by Crew Size
This parameter is used to control the variable work time at a call where vehicles have a crew size of 2 or more. If set the variable work element (i.e. call rate) is totaled and then divided by the number of crew on the vehicle, for example half the time will be used if the crew size is 2. If not set, the entire work time will be allocated.

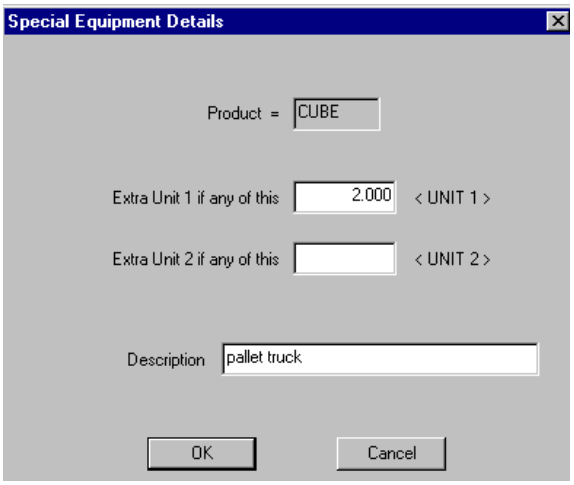
Special Equipment



To change any details select by clicking on the required No. from 1 or 10 in # column and modify the value before clicking on the OK button. To send a copy of the settings to the default printer use the Print button.

This facility is designed to add a fixed extra unit or units to any vehicle load calculated if any of the specified product group is found on a trip. For instance, a value of 1000 in the product 1 / unit 1 field would have the effect of adding an additional 1000 unit 1 to the vehicle load calculated if that trip included any amount of product 1.

Values can be used for any combination of products and vehicle units with multiple options possible. The additional units are added during the route construction phase and thus form an integral part of the maximum vehicle load possible. Up to 3 decimal places can be used to specify the additional extra units, but totals will be rounded when vehicle units are calculated. A text description of a maximum of 24 characters can also be used to apply to the equipment in question. This text will be printed on route output.

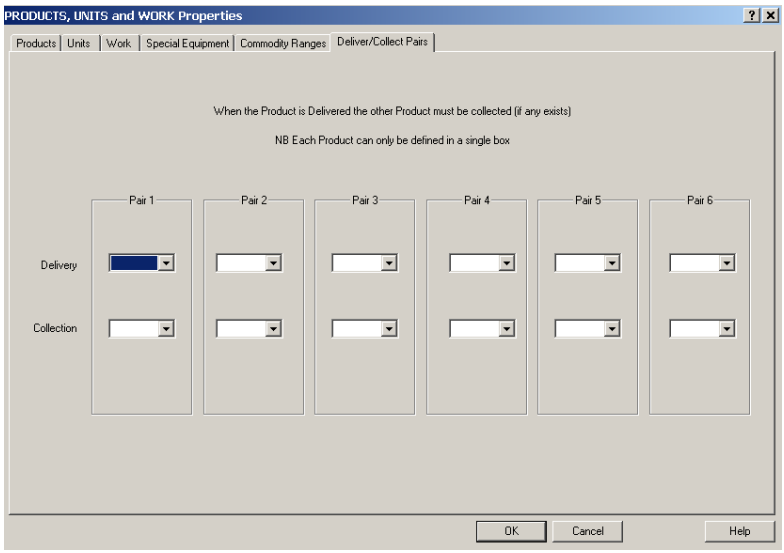


Although the term "special equipment weight" is used, the facility can apply to any units specified whether they relate to a weight or not. For example if the units specified were pallets, the additional value to be added would appear in terms of pallets. As an example if product 1 required a pallet truck for unloading and the equipment took up space equivalent
to one pallet, a value of 1.000 in the appropriate field would cause the pallet space to be added to those already assigned to that trip.

Extra Units for Pallets

This facility is designed to add a fixed extra unit or units to any vehicle load calculated if any calls on that trip have a Pallet Fill Factor that is non-zero. For instance, a value of 1000 in the unit 1 field would have the effect of adding an additional 1000 unit 1 to the vehicle load calculated if that trip included calls with a valid pallet fill factor. Up to 3 decimal places can be used to specify the additional extra units, but totals will be rounded when vehicle units are calculated. Both vehicle unit 1 and unit 2 considerations may be used.

Units are added for each unit 1 delivered to that call, i.e. the value is considered to be a cumulative value and not a "one-off" fixed extra unit. For fixed additional units the Special Equipment Weight may be used.

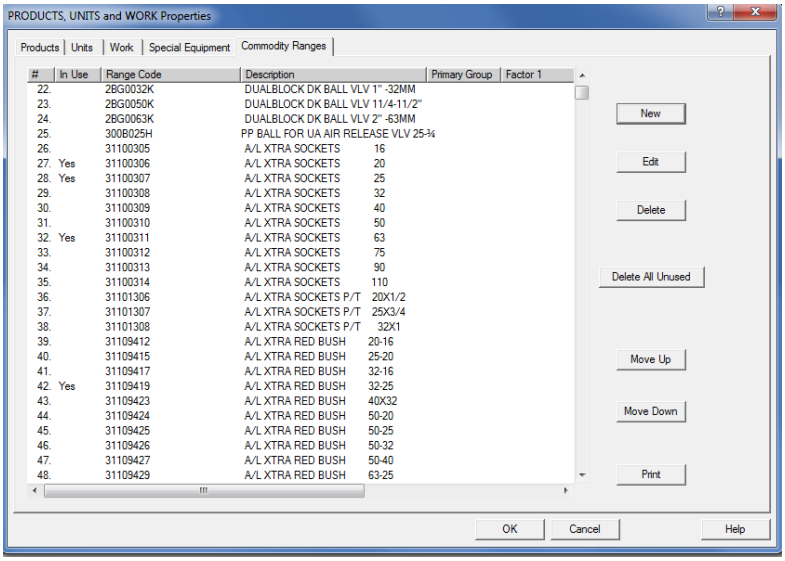


Collect / Deliver Pairs

Only available in *Multiple Models* or where *Split Call into 1 Copy for each Product* is set, this screen forces two different products at the same call to be delivered and then collected AT THE SAME TIME. Use the dialogs to select a delivery product from the 12 possible options already set on the Products tab and an appropriate collection product that, where any exists, must be collected immediately after the delivery at the same place. Up to 6 matching pairs may be set for Vanguard runs.

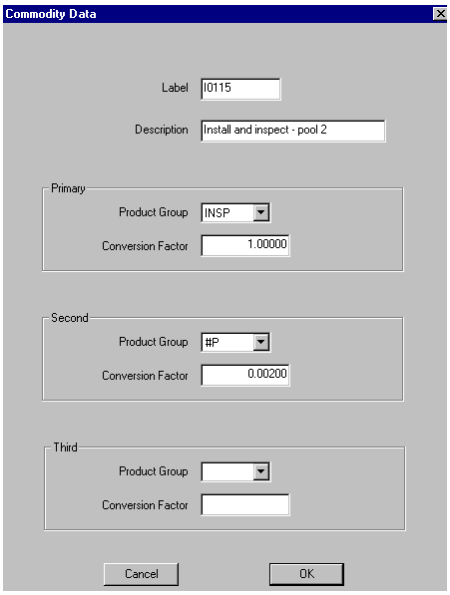
Set fields to –delete- to remove pairing.

Commodity Ranges



To create a new Commodity, click on the New button to display the input screen for a box, type the appropriate values into the fields provided and then click on the OK button. To change an existing Commodity select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Commodity in the list, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button. To remove a Commodity click on the relevant # no. and click on Delete.

An item reference code or range code may consist of between 1 and 20 characters (both numeric and alphabetic), with a description text of up to 28 characters. It is the range code that is used on the order entry and call screens to signify that this particular product range is required. In order to calculate the quantity information for scheduling (that is the vehicle units) up to 3 conversion groups and factors may be used. At least one must be specified for the order to be processed correctly. Each conversion group corresponds to one of the 12 Product Labels pre-defined. Use the drop-down box to choose from the current selection of product group labels, and then specify a conversion factor for this commodity item.



As an example if the commodity range is a "type 1234 case" which weighs 100 kilograms and the product group in use is KGS, the conversion factor for this product label would be 100. Up to 3 different product labels may be employed for conversion purposes and these are termed primary, second and third.

Daily Routing New Product Data

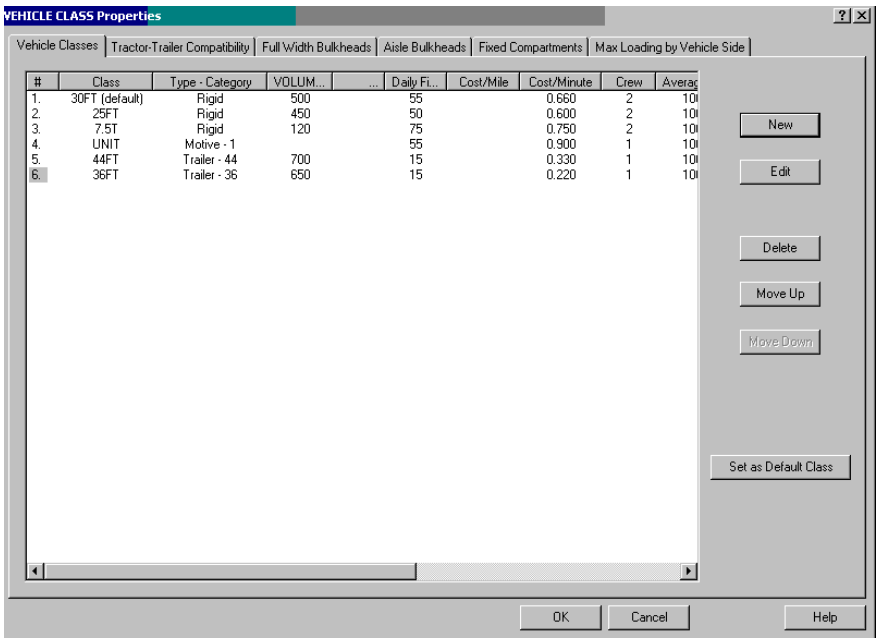
There may be occasions when a new product code is transmitted on an order. If this is the case the system will automatically create the code during the order entry process and display a warning message accordingly. The code will then be highlighted in red in the list. This message will be repeated until the correct information regarding product description (replacing the ?????????? label) and conversions is input.

Deleting Unused Commodity Items

If Individual products (or commodity codes) are downloaded for each order, the system may eventually hold a large number of these entries and take longer to load and process data. When the limit is near an appropriate error message will appear warning of this. In the Edit, Products Units & Work dialog, the Commodity Range tab will display all the current entries with an “In Use” column to show those currently required. To remove the Unused entries, click on the button Delete All Unused and they will be deleted enabling the system to respond more quickly.

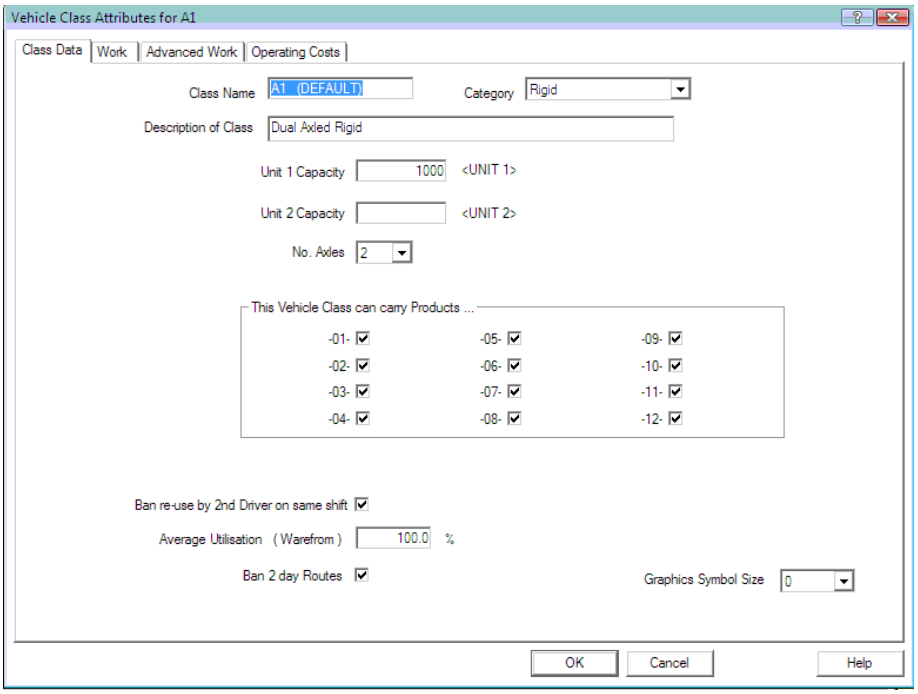
Vehicle Classes

A basic vehicle class is a fundamental requirement of any planning process to be undertaken using DiPS. In such a way the vehicle class screen appears as part of the initial set up phase. Every call and depot is given a maximum vehicle class by default (usually the biggest) to govern vehicle access restrictions. This vehicle may be defined as either a trailer or a rigid classification. The route planning packages can use rigid vehicle types, fixed tractor-trailer fleets; or for a more mixed environment tractor unit and trailer combinations if necessary. Use of the latter facility will allow tractor units to interchange user-defined compatible trailer types; with tractor and trailer classes set up in conjunction with a table of valid appropriate combinations. Driver Classes may also be added for each depot to complete the vehicle facility.
Vehicle Class - sets attributes for a vehicle type
Moveable Bulkhead definitions - sets attributes for variable sized compartments on vehicles.
Fixed Compartments- sets attributes for fixed sized compartments on vehicles.
Tractor/Trailer Compatibility - defines a table for vehicle and trailer combinations.
A Vehicle fleet must be established for any route planning module to operate (else all calls will be deferred with reason = -19 or -18). However the Warefrom module will globally estimate the numbers of vehicles required if none are allocated to the depot in question. If vehicles have been set at any depot within the run, they will become a limiting factor on that depots' capabilities. Hence avoid setting vehicles at one depot and not at another for calls to be allocated correctly.



Vehicle and Crew Operating Costs

Vehicle costings are a critical part of both Warefrom and the vehicle scheduling process (in Dayplan or Vanguard). In Warefrom they can play an important role in deciding the allocation of calls to depots as the cost for each call from each depot are compared before selecting a depot.



Vehicle Class

Vehicle types are designated in the DiPS system by the use of the Vehicle Class notation. Up to 4 characters may be used to name a particular class. Examples would include : 40FT , ART , A , RIGD , 16T , etc. A class must be given to any individual vehicle OR trailer type. This is especially important if the trailers are used in conjunction with the Tractor-Trailer compatibility function to enable the tractor unit to be allowed to change trailer type on different trips of the same route. There are a number of attributes available for use with each class, the most important of which is the CAPACITY which will define vehicle types to be allowed into a delivery point and utilisation in the routing schedules.

If a vehicle or trailer class has a larger capacity than that of the Maximum Class defined for a call, then it will not be used to deliver to that point. If the values are identical either may be used. When the system prompts for data including the vehicle class notation, please ensure that all 4 characters are input including any blank spaces used.

To create a new Class, click on the New button to display the input screen for a box, type the appropriate values into the fields provided and then click on the OK button. To change an existing Class select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Class in the list, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button.
To remove a Class click on the relevant # no. and click on Delete. Ensure that there are no references to a deleted vehicle class anywhere within routes or depots before attempting to delete it. Failure to do this will produce error messages.

Please note that a vehicle must be allocated to a route for driving and working performances to be used – if a route has no vehicle it will have the standard values as set in road speeds and will have NO variable work times at calls or at depots.

Category

To allow for the greatest possible flexibility in route planning, DiPS vehicle classes may be set up to either represent fixed vehicle types, such as rigids; or fleets where tractor units are allowed to employ either a single particular trailer type or a range of available trailer types. A mixture of both class types is acceptable.

To establish a rigid vehicle, set the Category drop-down box to be Rigid, and fill in the appropriate capacity values. To create a trailer type set Category to any value in the range Trailer – 10 to Trailer - 99, and fill in the appropriate capacity values. To establish a tractor unit, set the appropriate Category from the range motive –1 to motive – 9, whilst leaving the capacity values set to ZERO. Thus a tractor unit is a in essence a rigid vehicle with NO carrying capacity capability that can be used to pull trailers that have capacity.

A table of trailer types that can be pulled by tractor unit type must then be set up to identify the possible vehicle combinations that the planning programs can use. The table is defined using the category numbers given to each class. Drawbar vehicle combinations may be created by use of a category number given to a rigid vehicle type with an appropriate trailer defined. This is done from the Motive Unit / Trailer Compatibility page.

The Vehicle Class Category Number has two basic uses within the system. Given to each class type created, it can be used in conjunction with the Compatibility Table to define tractor-trailer or drawbar (rigid-trailer) combinations; and also in conjunction with the Drivers for the Implied Depot function (where this is in use) to prevent certain drivers from being allocated to the wrong rigid or tractor unit type. The same category number may be used to define a number of classes if required. For example to use a fleet with tractor units that are able to pull any of the defined trailer types, it is necessary only to create two category numbers – motive - 1 for the tractor units and trailer - 10 for the trailer types. On the Compatibility Table Motive Category 1 would be set to pull Trailer Category 10.

Description of Class & no. of Axles

These fields are used for add some text information about the type of vehicle represented.

Vehicle Capacity

Vehicle capacities are set in terms of the UNITS that have been chosen for use within the study. For example if the units were deemed to be pallets the capacity for an articulated 40FT trailer class could be 22 pallets. Capacities may be defined for both UNIT 1 and UNIT 2 if it is considered that two measures of capacity are important in construction of routes. For instance if the product to be delivered sometimes caused a vehicle to reach full utilisation in terms of weight but on other occasions reached full utilisation in terms of area space on the vehicle, both units could be set as maximums. Whichever

limit was reached first in the route planning process would be critical. In many instances just one capacity measure will suffice. In this case it is advisable to use the Capacity limit for UNIT 1 rather than for UNIT 2. By default, Product 1 specified on a Call screen converts into UNIT 1 using a factor of 1.000. The capacity of a class will define vehicle types to be allowed into a delivery point. If a vehicle class has a larger capacity than that of the Maximum Class defined for a call, then it will not be used to deliver to that point. If the values are identical either may be used.

Product Carrying Capability

The Product Carrying Capability enables certain rigid vehicle or trailer classes to be used only to deliver certain products. By default there will be a tick for every Product 1-12. To prevent one or a group of products being carried on a class, click on the field to amend the setting. It is important to remember that at least one vehicle or trailer type MUST be able to carry all the products required on a call screen or else the call will be deferred in the scheduling process.

Average Utilisation

This field is used in conjunction with vehicle mode supply chain links in Warefrom mode to calculate the number of trunking journeys required for the movement of product from source to destination depot. The Average Utilisation will factor the number of journeys required based upon the capacity limits set for this class of vehicle and product required. For example if the number of journeys required equals 5, a factor of 50% utilisation will increase it to 10.

Graphics Symbol Size

The Symbol set options may be employed to change the appearance of calls on the graphic - modifying the size of the symbols using the pixel radius if the call has a Maximum Vehicle Size value set to this class (the larger the value the larger each symbol will appear). Such values are employed if the Symbol set on Style, Graphics options is changed to Freq+OT+MaxV (for example).

Ban 2 Day Routes

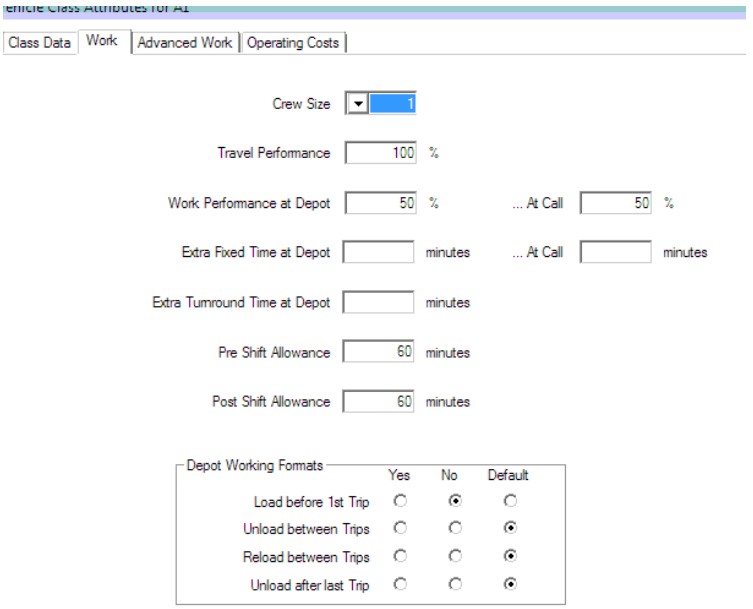
This tick-box if set will prevent this particular vehicle class from having any night-outs on multi-day routes (2,3,4 days etc). All routes created by the routing programs for this class of vehicle will only be single day runs.

Ban re-use by 2nd Driver on same Shift

This tick-box if set will prevent any routing program from re-using this particular vehicle class by a 2nd driver on the same day. This ensures that vehicles of this class are only used by one route on any day.

On the Vehicle Work Tab, the following parameters are available :-

Crew Size



This field is used to specify the crew size on a particular vehicle type (rigid, tractor unit, or trailer). Type in the relevant number to establish a crew size other than 1 (which is the default figure). This parameter may then be used in conjunction with the Crew Size field on a Call screen and Crew Size parameters in the Route Planning Algorithms It is also useful to note that the variable work time at a call point is also divided by the crew size. For example, a delivery with a calculated elapsed time of 20 mins per visit would be re-factored to be 10 mins if it were delivered on a vehicle with a 2 man crew. These may be re-set if required in the Work section.

Fixed Time at Depot

For depots fixed work time represents an extra fixed time in vehicle minutes for turn-round in between trips of the same route, allowing for unloading/re-loading/driver de-brief etc. This may also be used in conjunction with a Depot Rate to allow for variable turn-round time dependent upon product or vehicle unit values. Set the Depot Working Format parameters table (here or in Edit, Products Units & Work menu) to identify when the work time is employed, i.e. before first trip or between trips and so on. **This value will be also added to any Fixed Turn-round time set at a depot**. These values are added as required by Depot Working Format but will be applied for each visit to a depot by a vehicle, i.e. for loading and un-loading at both ends of a trip.

Extra Fixed Time at Depot and at Call

These parameters add extra fixed time in minutes to the depot turn-round time **between trips only** or at a call point when delivering or collecting. The depot time is not added to any pre- or post-shift time on a route. This may also be used in

conjunction with a Depot Rate to allow for variable turn-round time dependent upon product or vehicle unit values. Set the Depot Working Format parameters table (here or in Edit, Products Units & Work menu) to allow for work time for unloading/loading between trips. This value will be also added to any Fixed Turn-round time set on a depot and to any Fixed Time at Depot set for this vehicle class.

Working & Driving Performance

Both work rates (at a depot or at a call) and driving performance may be altered by vehicle type using the percentage factors provided. In the case of working performance the unloading or loading times calculated at drop locations using Product or Unit considerations may be factored to imply either a faster or slower working rate. Fixed work times are not affected. All the pre-calculated working times are reduced in the ratio :-

$$\frac{100}{\text{PERFORMANCE \%}}$$

By default values are set to 100% which does not change any values. As can be seen factors of 100% or more would have the effect of decreasing the times and by inference increasing relative unloading rates; whereas factors of less than 100% would have a negating effect. In the case of driving performance, the times between locations calculated and stored on the TTMATRIX may be factored to imply either a faster or slower driving time. **These values will replace any defaults previously set in the Routes Parameters section (Old default values will be transferred into new format files, with values added to all existing vehicle classes as necessary).** All the pre-calculated travel times are modified in the ratio but the travel distances are unchanged. There is no need to re-run the MATRIX to use this function. **A vehicle must be allocated to a route for driving and working performances to be active – if a route has no vehicle it will have the standard values as set in road speeds and will have NO variable work times.**

Pre-Shift and Post-Shift Allowances - The Pre-Shift Allowance time which is specified in minutes provides for the time between a driver starting his working day and actually leaving the depot. The value may be used to reflect time taken to check the vehicle is in order mechanically, to collect delivery documentation from offices, or to re-fuel for example. The time appears on route output prints as depot time before the first trip. It will be added to any additional depot working time that has been set. The Post-Shift Allowance time which is specified in minutes provides for the time between a driver finishing his working day and actually leaving the depot. The value may be used to reflect time taken to check the vehicle is in order for the following day (to re-fuel), to de-brief, or to return delivery documentation to offices for example. The time appears on route output prints as depot time after the last trip. **Both values will be added to any default settings in the Route Parameters, Drivers Hours dialog and additional depot working time that has been set.** Note: Allowance times are taken off the maximum shift time available for a route. It is not an extra time for addition onto the working day.

Depot Working Formats

Depot Loading Formats are used for specifying at what stage Depot Rates are considered (i.e. before first trip / between trips etc.). Tick the box to enable calculations of variable work time at that point for this type of vehicle. Using the default button would refer to the standard settings on the Products, Units and Work parameters.

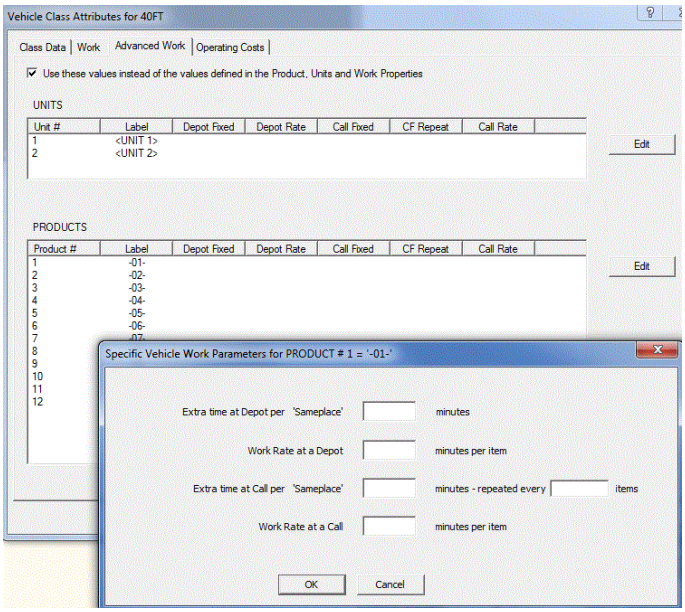
Loading before 1st Trip - this will allow for pre-loading of the delivery quantities (either products or units) to be considered as part of the driver's shift time.
Unload between Trips - this will allow for the unloading of any collected quantity (negative vehicle units) made on the trip just completed.
Re-load between trips - this will allow for the loading of any delivery quantity (vehicle units) made on the to be made on the subsequent trip.
Unload after last Trips - this will allow for the unloading of any collected quantity (negative vehicle units) made on the last trip of the day.

On the Vehicle Advanced Work Tab, specific work parameters for each product and vehicle unit may be set :-

Each or the 12 different products may be specified to allow discrimination between types of delivered or collected goods in terms of their loading/unloading rates.

Depot / Call Fixed Time - sets a fixed time to be spent at each location for each product type
Depot / Call Rate - sets a depot / delivery point loading or unloading rate for each product type

To change any product's details select it by clicking on the required No. from 1 to 12 in # column and modify the values before clicking on the OK button. To send a copy of the settings to the default printer use the Print button.



Depot Fixed Time (Extra Time at Depot)

The depot fixed time value is specified in whole minutes and is added once into the work time at a every visit to a depot for each call on that trip (eg 3 calls with a fixed time of 5 would add 15 minutes). The value can be used for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery.

Depot Work Rate

The Depot Rate value may be specified in up to 3 decimal places and represents the time required in minutes to load/unload one item of the product or unit at the DEPOT. The Depot Loading Formats set in the work page are used for specifying at what stage depot rates are considered (i.e. before first trip / between trips etc.). Values can be set for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery. This variable work element may be factored for different classes of depot by use of the Work Difficulty Factors to multiply calculated values.

Call Fixed Time (Extra Time at Call per Sameplace)

The fixed time value is specified in whole minutes and is added into the work time at a Call. It is possible to set threshold values. If required, a quantity value can be entered at which point the fixed time for the product is repeated. For example, using a value of 10 items with an Extra Time in minutes figure of 5.000 would give and single value of 5 minutes for values of 1-10, 10 minutes would be used for 11-20 items as the value would repeat once, with 15 minutes for 21-30 items using another repeat and so on. The functionality is designed to replicate situations where repeat times are necessary since the driver has to return to the vehicle to pick up another batch of items to deliver.The value can be used for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery. By default every call ident is unique. However the Sameplace logic in Route Parameters may be used to will define what represents a call, whether it is an individual call ident or a number of calls with matching criteria such as postcodes.

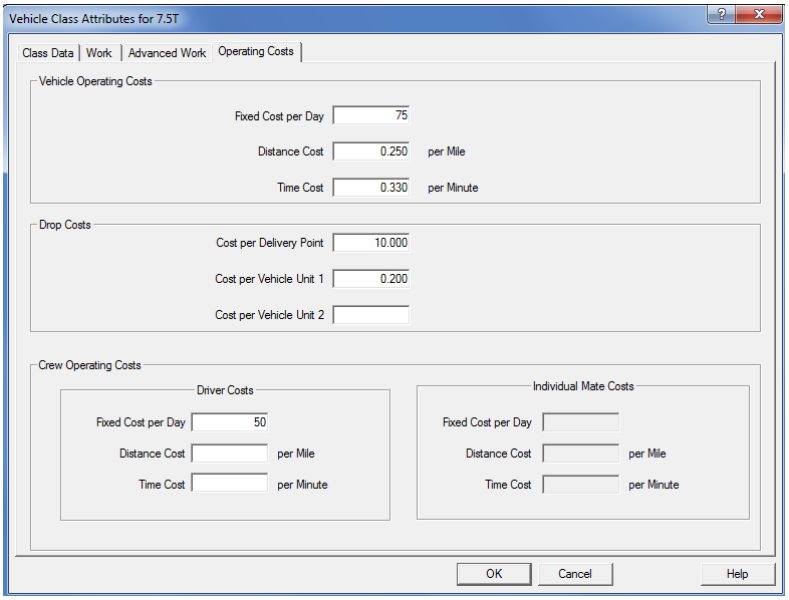
Call Work Rate

The Call rate value may be specified in up to 3 decimal places and represents the time required in minutes to load/unload one item of the product or unit at a CALL or KLUSTER point. The value can be used for either units and products or both. If used in more than one instance the total value will be the cumulative of all the individual times for any product or vehicle unit required for delivery. All Work Times are calculated to an accuracy of 1 decimal place (or tenths of a minute). This variable work element may be factored for different classes of delivery point by use of the Work Difficulty Factors to multiply calculated values.

For more information on setting these values and example calculations please refer to the section on Products, Units & Work.

On the Vehicle Operating Costs Tab, the following parameters are available :-

<u>Vehicle, Crew Operating Costs and Drop Costs</u>



Vehicle costings are used both in Warefrom and scheduling. In Warefrom they can play an important role in deciding the allocation of calls to depots, whilst in scheduling the values are used to choose the best vehicle and in an output phase to produce a costing report for the routes constructed.

There are three basic cost factors that may be input.
Fixed Cost per DAY - Represents the accumulated fixed costs for a class over a day's operation, including factors such as depreciation, tax, overheads etc. Values may be input only as whole numbers, and so it is normal to use figures specified in pounds.
Variable Cost per Mile or Km - Represents a distance cost for operating the vehicle to introduce costs such as fuel and maintenance. This cost is taken into account in Warefrom and scheduling. Values may be input as a rate (###.ppp) per mile.
Variable Cost per Minute - Represents a time cost for operating the vehicle to reflect driver's wages on a simplified level. This cost is also taken into account in WAREFROM and VANGUARD. Values may be input as a rate (###.ppp) per minute.

Each separate cost value can be input into three possible sections if required – for the vehicle itself, for the driver, and for each mate (if the crew size is set to 2 or more). All costs will be accumulated to produce the overall figure for the warefrom analysis and routes.

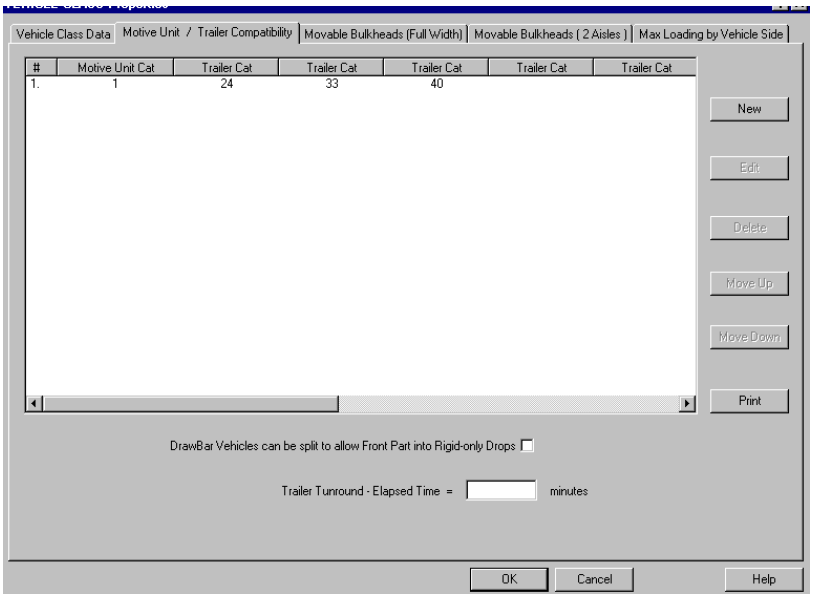
Where individual tractor and trailer types are in use cost output is broken down accordingly into tractor unit costs and costs involved with trailer operation.

Additional cost values for vehicle classes can now be entered to reflect delivery or drop criteria. On the Operating Costs tab, the Drop Costs section has the following values:

Cost per Delivery Point – which will add the value for each individual stop (i.e. multiple deliveries at one point only incur one cost)
Cost per Vehicle Unit – which will multiple specified values by each unit defined and add the total cost to the route.

The overall drop cost figures will be added to any other costs defined for this class and summed into the route cost total. They are also available per route from the Export Routes option in a new field at the end of the export called ROUTE DROP COST. The Drop cost totals will also be displayed by depot in the Cost Report tab for each day.

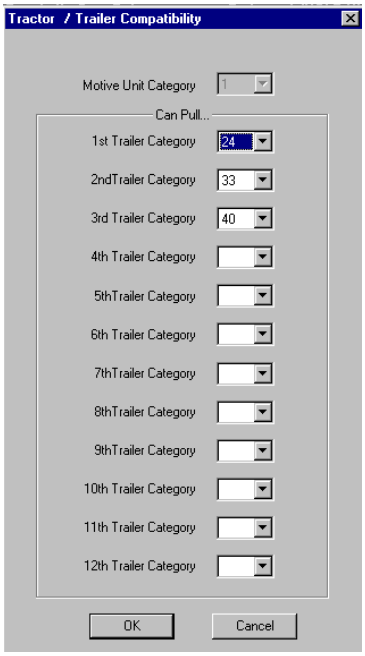
Motive Unit / Trailer and Drawbar Compatibility



This table is employed to denote whether a trailer class may be pulled by a tractor unit (a typical articulated vehicle combination) or a motive unit with capacity (a drawbar combination).
It relies upon the categories for both motive units and trailers to define valid tractor-trailer combinations for the route planning programs to use. To establish compatibility between a unit and trailer type simply list the Trailer Category under the appropriate Vehicle (Motive Unit) Category Number.

To create a new relationship, click on the New button to display the input screen for a box, set the appropriate values into the fields provided and then click on the OK button. To change existing select by clicking on the required No. in # column and modify the values before clicking on the OK button. To move in the list, simply select and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button. To remove a relationship click on the relevant # no. and click on Delete.

Drawbar Vehicle Restrictions



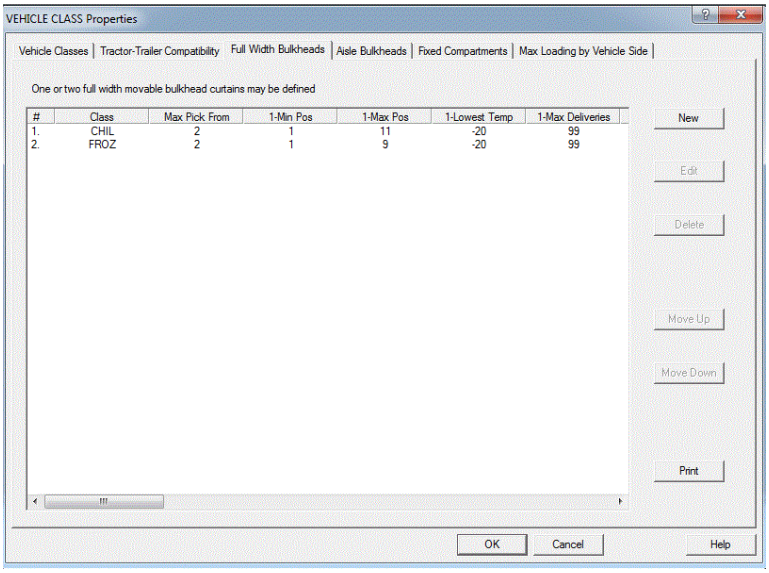
All route planning programs now have logic to allow calls restricted to rigid only to be delivered on the front section of a drawbar combination. This is achieved using the **Drawbar Vehicles Can be Split to Allow Front Part into a Rigid Only Drop** Parameter. The default value is set OFF. Change this parameter to YES to allow a full drawbar combination into a rigid restricted call ensuring that the product is loaded into the front motive unit and that this is not overloaded by the addition of this call to the route. Examples of the type of restrictions available would be :- For 3 vehicle classes 22PA (22 pallet artic), 12PV (12 pallet drawbar vehicle), 12PT (12 pallet drawbar trailer); if the Call Maximum Vehicle Size is set to 12PV with a Banned Vehicle Class set to 12PT and the parameter is set ON, the call in question could be delivered on a route with a drawbar combination of 12PV and 12PT as long as the capacity required for the front motive section was not exceeded; or if the Call Maximum Vehicle Size is set to 22PA and has a Banned Vehicle Class set to 12PT the call could be delivered on a route with a drawbar front end as above, or by a 22PA artic vehicle.

Minimum Trailer Turn-round Time

This parameter sets a minimum time in minutes before an individual trailer ident may be re-used by a route planning program on an additional trip or another route. It is defaulted to **0**. The time specified is used in addition to any normal fixed and working time spent between trips as provided by the Depot Rate and the Depot Extra Time Per Visit. It is recommended that these parameters are employed under normal circumstances and that the Trailer Turn-round time be reserved for particular problems regarding trailer availability (such as wash-out or de-contamination).

Using Bulkheads & Compartments on Vehicles

Fixed or moveable compartments may be configured for vehicle types using the Vehicle Class menu.



Moveable Bulkhead Definitions

Moveable bulkheads may be specified for each appropriate vehicle class required in Kingpin. The parameters required include Position Numbers to govern the possible locations of either of one or two bulkheads on a vehicle or trailer, and Unit <1> per position to define the width of the vehicle or trailer. The concept of moveable compartments is designed to work in conjunction with the Product Temperature or Combination Index values set for each group.

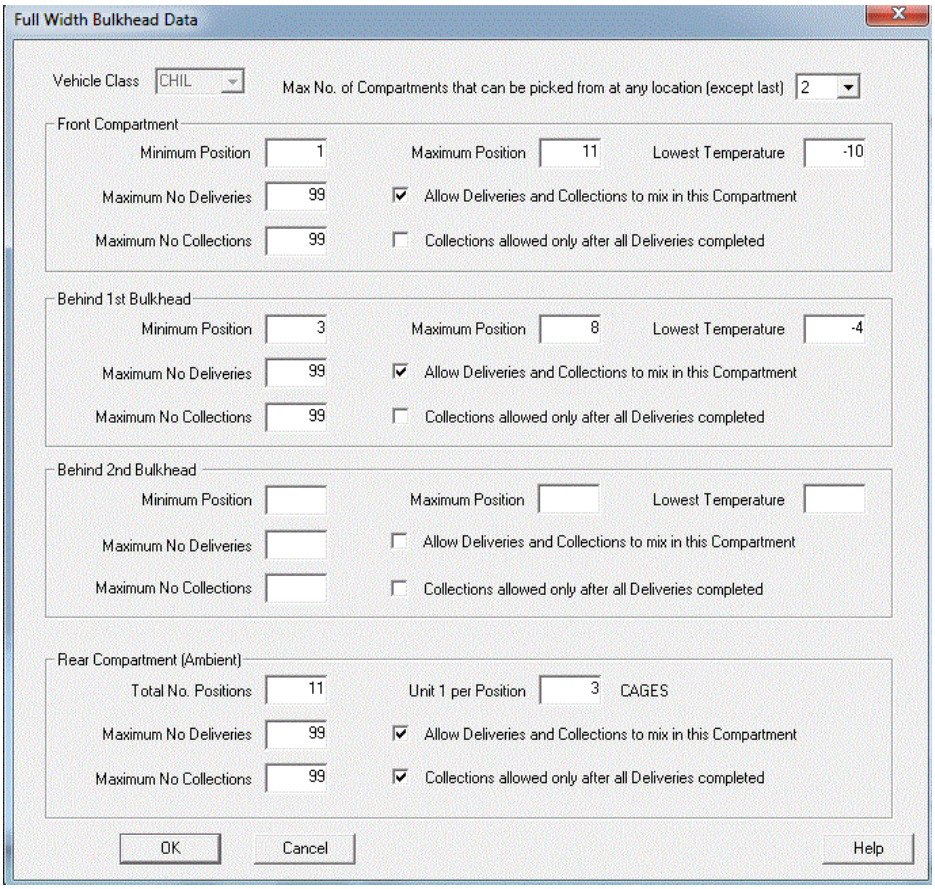
Full Width Bulkheads may be used in instances where the vehicle types contain a single panel or door that is used to divide across the vehicle, whilst Aisle Bulkheads can be set whenever classes have a dividing partition running along the vehicles as well as those across the vehicle or trailer.

To create a new type use either of the two defined tabs, click on the New button to display the input screen for a box, type the appropriate values into the fields provided and then click on the OK button. To change an existing type select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a type in the list, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button. To remove a type click on the relevant # no. and click on Delete.

Class

A valid vehicle class must be entered initially to have moveable bulkhead logic applied. All other vehicle attributes such as vehicle capacity, costs, tractor/trailer compatibility, and so on are expressed as normal when setting up the study.

Full Width Bulkheads



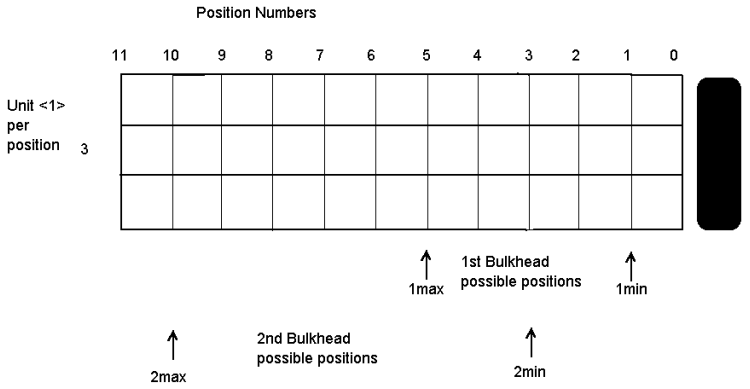
The **Maximum No. of Compartments that can be picked from** field defines how many different temperature products may be picked in one go. For example if 2 compartments are defined for a vehicle with a single bulkhead it is possible to deliver products of both temperatures at a call before moving to the next and repeating the process. If only a single compartment is allowed all product of one temperature must be off-loaded at calls before the other product can be accessed.

The **Unit <1> Per Position for full width** parameter defines the number of vehicle units that occupy a position of the bulkhead on a vehicle or trailer. It may be thought of as the width of the bulkhead.

The **Total No. Positions** value for full width defines the total number of possible options available for this class - in this example 11 possible positions.

The example in figure 1 shows a trailer with 11 possible positions each with 3 Vehicle units; in this case roll cages.

Position Numbers for Bulkhead Dividers



These numbers are employed to define the possible positions of the bulkhead on a vehicle or trailer. The front of the vehicle is always defined as position 0 (zero) and incremented according to the vehicle unit <1> in question. The example shows a trailer with 11 possible rows of Vehicle units; in this case CAGES.

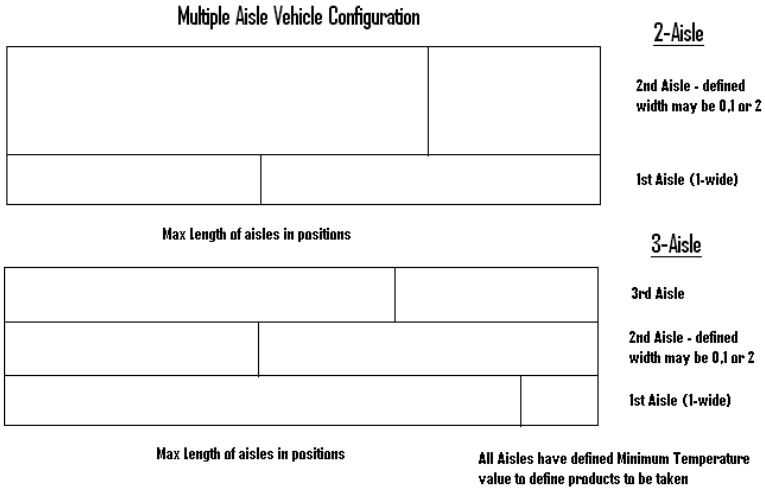
The **Front Compartment** values define the possible positions of the first bulkhead. In the example it can be positioned at 1, 2, 3, 4 or 5. This would enable a compartment of between 3 and 12 roll cages, with the remaining capacity of the vehicle (up to 33 cages) put in the second compartment.

The **Behind 1st** and **Behind 2nd** values are used on occasions where there may be a second or even third moveable bulkhead facility and define the possible positions of those. In the previous example the second can be positioned at any location between 3 and 10. This would enable three compartments of varying sizes, such as:-

Front Compartment	2nd Compartment	Rear Compartment
6	9	18
3	12	8
12	15	6

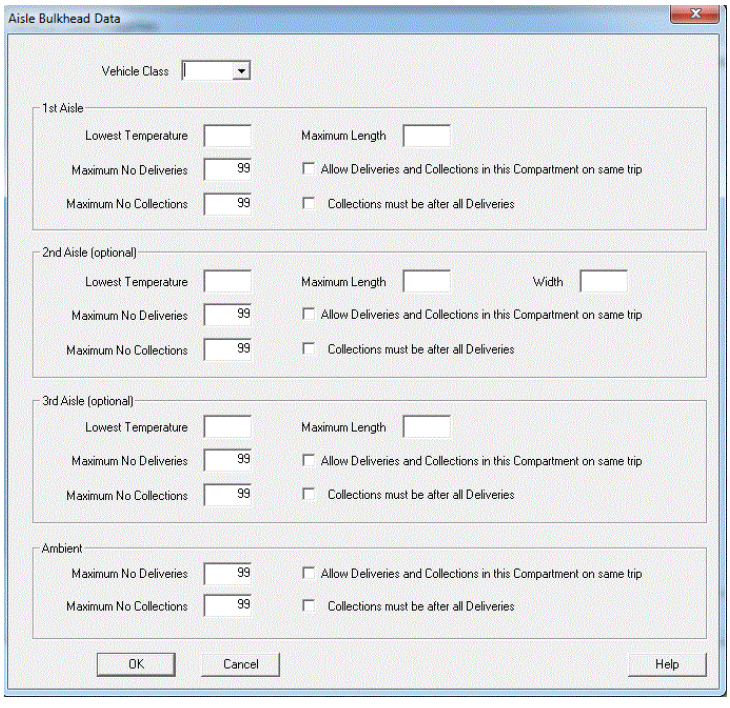
For each compartment it is also possible to define the **Maximum No of Calls allowed on a trip for Deliveries / Collections**, as well as tick-boxes to allow **Deliveries and Collections to be mixed** in this compartment on a trip and prevent any products from being collected before all deliveries have been completed (i.e. the compartment is empty)

The Rear Compartment area is the loading area designated for any Ambient products. Where no bulkheads are available for the class (e.g. ambient trailers), simply define the class and Unit <1> per position values and set the max position at the end of the trailer.



Aisle Bulkheads

For multiple aisle configurations, it is possible to define one or two spines (see diagram), which when combined with bulkheads in each, make it possible to define a greater number of combinations of compartment. The logic is defined for use mainly with roll-cage/pallet scenarios. The first aisle is always defined as "1-wide" (that is 1 vehicle unit). The 2nd aisle can be defined as either 1 or 2 wide, whilst the 3rd aisle is usually 1-wide. Each aisle requires a Minimum Temperature and a Maximum Length (in positions) to complete the possible compartment options.



Again, for each compartment and the Ambient space it is also possible to define the **Maximum No of Calls allowed on a trip for Deliveries / Collections**, as well as tick-boxes to allow **Deliveries and Collections to be mixed** in this compartment on a trip and prevent any products from being collected before all deliveries have been completed (i.e. the compartment is empty)

Product Temperature (Combination Index)

The product temperature parameters are designed for use with moveable bulkhead logic to define which products can be mixed within the same compartment on a vehicle. *To mix products the Temp values must be exactly the same as each other*. Any different values will lead to the product being placed in different compartments. For example product temp values of -5 for groups -01- and -02- would mean that they could both be delivered from the same compartment, but values of -5 for -01- and -4 for -02- (although quite similar) would mean that they would be placed in different compartments separated by a bulkhead.

The normal product mixing parameters are used to define which products may mix together on the same trip whilst the vehicle product parameters are still employed to check whether certain vehicle classes have the ability to carry a certain product group at all.

Scheduling with Moveable Bulkheads

Any of the DiPS routing modules (Vanguard / Dayplan etc) may be used as normal with vehicle classes including bulkheads. Special keywords or programs are not required since each program will automatically calculate and use the correct configuration where necessary. Any mixture of vehicles with or without bulkheads may be scheduled in a single run once set up in Kingpin as described. All relevant parameters given to a class with moveable bulkheads are printed in the List of Vehicles at each Depot section of the Input Summary. The compartments and bulkhead locations are calculated on an on-going basis whilst route planning is underway, so that in situations where collections are done before deliveries, account can be taken of the updated product counts on the vehicle.

Fixed Compartment Definitions

Fixed Compartments may be specified for each appropriate vehicle class required in Kingpin. The parameters required include Maximum Vehicle Unit, No. of drops, work factors for unloading/loading rates, and product carrying capability for each defined compartment on a vehicle class. The concept of fixed compartments is designed to work in conjunction with the Combination Index value set for each Product

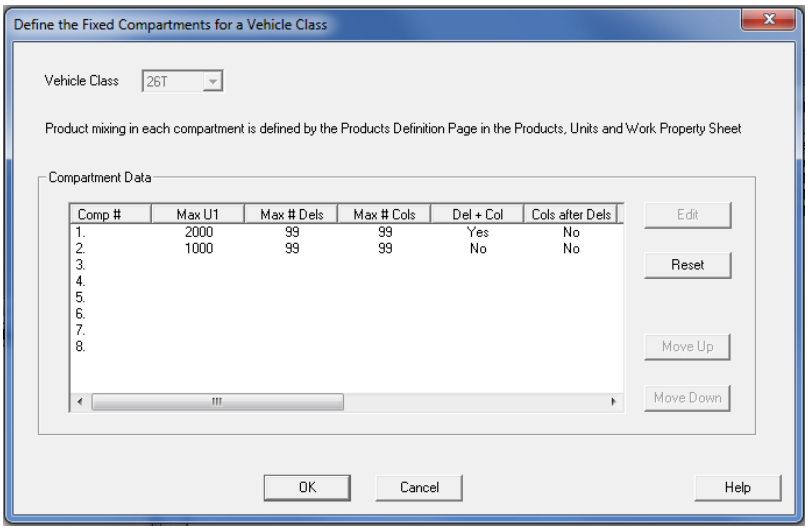
Product's Combination Index

The product combination index values are designed for use with compartment logic to define which products can be mixed within the same compartment on a vehicle. *To mix products the index values must be exactly the same as each other*. Any different values will lead to the product being placed in different compartments. For example product index values of 5 for groups -01- and -02- would mean that they could both be delivered from the same compartment, but values of 5 for -01- and 4 for -02- would mean that they would be placed in different compartments.

The normal product mixing parameters are used to define which products may mix together on the same trip whilst the vehicle compartment parameters are still employed to check whether certain compartments have the ability to carry a product group at all.
To create a new type, click on the New button to display a Fixed Compartment Vehicle Class summary screen and select the required Vehicle Class from the drop-down selection box. To change an existing class select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a class in the list, simply select it and then click on the Move Up or Move Down button. To remove a class, click on the relevant # no. and click on Delete.

Class

A valid vehicle class must be entered initially to have compartment logic applied. All other vehicle attributes such as vehicle capacity, costs, tractor/trailer compatibility, and so on are expressed as normal when setting up the study.

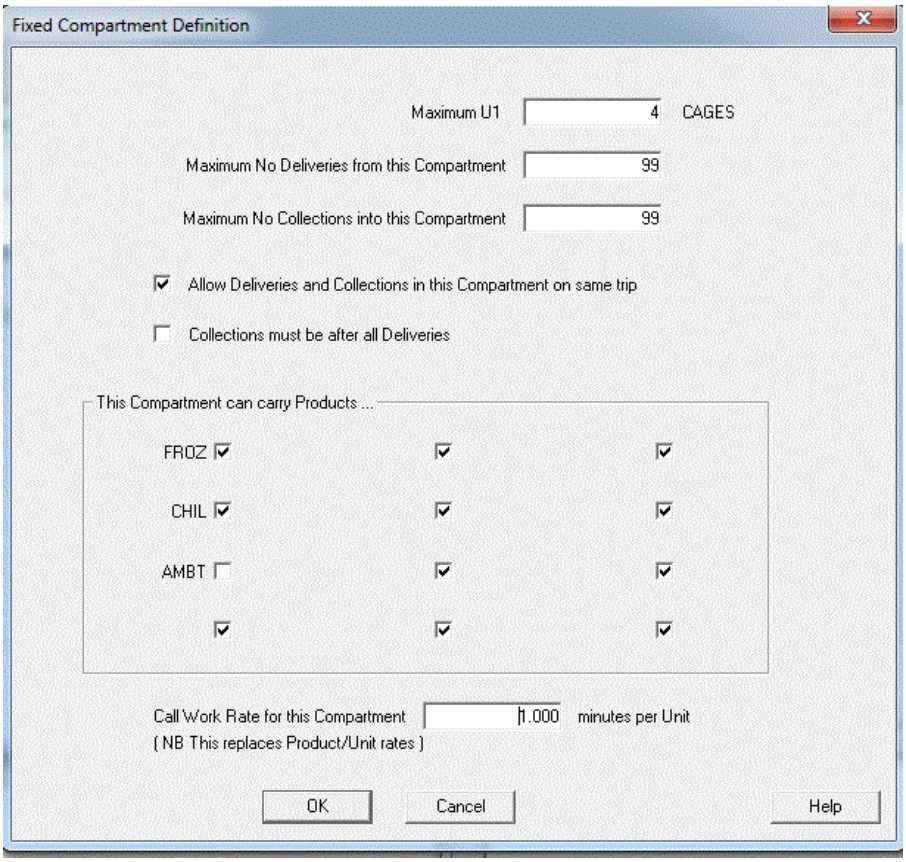


To define the relevant Compartment data, click the Edit button, type the appropriate values into the fields provided and then click on the OK button. Use the Reset button to clear existing compartment and start definitions again. The sum of all compartments should add up to the total vehicle capacity figure.

Maximum Compartment capacities are set in terms of the defined UNIT <1> settings that have been chosen for use within the study.

For each compartment it is possible to define the **Maximum No of Calls allowed from that compartment on a trip for Deliveries / Collections**, as well as tick-boxes to allow **Deliveries and Collections to be mixed** in this compartment on a trip and prevent any products from being collected before all deliveries have been completed (i.e. the compartment is empty)

The **Product Carrying Capability** enables certain compartments to be used only to deliver certain products. By default there will be a tick for every Product 1-12. To prevent one or a group of products being carried in a compartment, click on the field to amend the setting. It is important to remember that at least one compartment must be able to carry all the products required on a call screen or else the call will be deferred in the scheduling process.



The **Call Work Rate for this Compartment** is used to calculate drop times and will be used in preference to any values normally set on the Products or Units screen. The rate may be specified in up to 3 decimal places and represents the time required in minutes to load/unload one vehicle unit at a CALL. As an example if Unit1 required is 100 and the rate of 0.100 then the call's total variable delivery time = 10 minutes. Standard fixed times still apply.

Product Mixing

If certain product types cannot be mixed with others on any trip the product mixing logic may be used to prevent such occurrences. It has been useful in areas such as FRESH, AMBIENT and FROZEN goods for instance. By default there will be a tick for every Product. To prevent a product being mixed with this product on the same vehicle trip, click on the field to amend the setting. It is important to remember that at all the products must mix if they are required on a call screen or else the call will be deferred in the scheduling process. For incompatible product types on certain vehicle classes, the Vehicle Product Carrying capability may be used in conjunction with mixing if required.

Scheduling with Fixed Compartments

Any of the DiPS routing modules (Vanguard, Dayplan etc) may be used as normal with vehicle classes including bulkheads. Special keywords or programs are not required since each program will automatically calculate and use the correct configuration where necessary. Any mixture of vehicles with or without compartments may be scheduled in a single run once set up as described. All relevant parameters given to a class with compartments or bulkheads are printed in the List of Vehicles at each Depot section of the Input Summary. The compartments are calculated on an on-going basis whilst route planning is underway, so that in situations where collections are done before deliveries, account can be taken of the updated product counts on the vehicle.

Max Loading by Vehicle Side

A special feature of DiPS is the ability to establish additional loading restrictions for customers dependent upon loading position on the delivery vehicle. Used in conjunction with loading by side of vehicle parameters, the following key letters will only allow loading on a particular section. **R** = right **T** =tail **F** = front **L** = left
It is also possible to specify matching pairs, such as LT or RF but not LR.

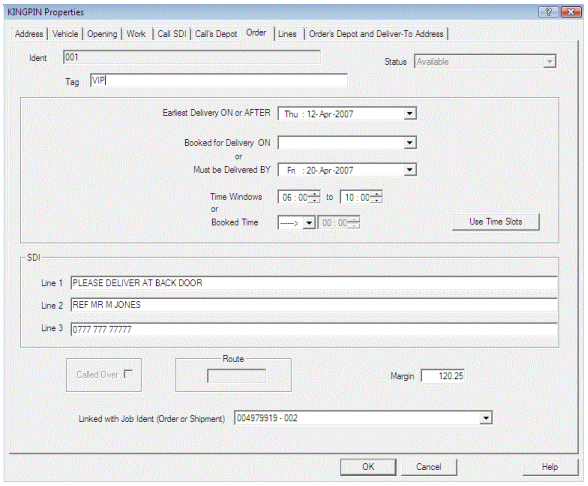
Side loading constraints are used in conjunction with the Vehicle Restrictions placed upon delivery points to restrict trips dependent upon loading position on the delivery vehicle. Restrictions can be placed in terms of : **Max % Load** - which will restrict the vehicle units on a trip that are to be delivered to points with a valid constraint, and **Max No. Drops** - which will restrict the number of separate constrained delivery points placed on any trip.

Both values may be specified based upon particular sections of the vehicle.

LEFT - which corresponds to the L nomination of the call restriction
RIGHT - which corresponds to the R nomination of the call restriction
FRONT - which corresponds to the F nomination of the call restriction
BACK - which corresponds to the T nomination of the call restriction

Where no restrictions are to apply a blank or zero value will have no constraining effect.
In certain cases where calls have more than on restriction (for instance LT or RF), the units to be delivered will have a constraining effect upon both areas. These restrictions may be set only once for any study and apply to all vehicle classes and trips in any scheduling runs.

The **Max No. Drops this part** will restrict the number of separate delivery points planned on the front (wagon) motive part or the rear (drag) trailer part of a wagon and drag vehicle set up using tractor / trailer compatibility.



Creating and Modifying Orders

Orders are employed by all daily route planning systems for the identification of day-to-day deliveries to customers. Most orders are downloaded from an interface to an order capture mainframe system, but additional orders may be created using the DiPS order entry process or existing orders amended. Each order must consist of a unique identifier (numbers and letters may be used), an existing customer call identifier, and product references and quantities. In addition a delivery date required may be given in either Booked Date format (a fixed delivery date), or Delivery By format (a due by date).

Information on orders can be accessed from the call Properties page. Point to the appropriate call or depot using the mouse cursor and click with the RHB to display the pop-up menu. From the list of options select Call Details using the LHB. From the graphics hover over the call to display the pop-up display and click with the RHB to display a pop-up menu. From the list of options select Call details to view Information. A notebook containing various call information is displayed as a pop-up. Click with the LHB on the appropriate tab at the top of the notebook to select the required page. Amend the values as required and then click on the OK button to save the changes or Cancel to quit.

Order Number
The order number is used to identify a delivery to a particular customer. This reference is shown for information purposes only and will be used throughout the DiPS system to identify the order.

Tag Field
In addition to the Ident a further 40 character sub-field (known as the TAG FIELD) may be used to allow for sub-grouping of calls within the print / delete / transfer/route functions. Any combination of characters or spaces may be input and amended at any time to allow for calls to be processed by matching tag.

Dates – Earliest, Booked, Delivered By
Use these fields to set the appropriate delivery date criteria for this order. The Booked filed sets a fixed delivery date from the calendar. Once set the order will only be available to the scheduling processes on that date and no other. If the order may be delivered at any time up to and including a particular date use the Must be Delivered By field. The Earliest Delivery Date can be employed in conjunction with a Due Date for example to set the available date for an order. It cannot be delivered before this date.

Booked Time, Time Window or Delivery Slots
The Time field when used in isolation is used to input a fixed delivery time that must be met for that order (not for each visit to the delivery point which may be done on the call screen). 24 hour clock notation is used to differentiate between am and pm periods. To change the minutes value, point to it and click with the LHB to highlight the value and then change as required using the spin button. When the Time field is used in conjunction with the **to** field, it defines a time window for the order. The time defined in the Time field itself governs the opening time, whilst the To field defines the closing time after which the delivery cannot take place. This parameter is employed to give a time window that must be met for that order only (not for every delivery to the call which may be done on the call screen). Multiple orders for a single call location may therefore have different delivery windows to ensure the required frequency of visit during the day. Values set here will have priority over normal opening time bands set on the call screen. For more complex arrival time settings use the Time Slots button to create delivery slots for this order. For more detailed information on this facility see the section on Delivery Slots.

Special Delivery Instructions (SDI)
Up to 240 characters may be employed (in 3 lines) as text for any information specific to that order delivery or collection. Since they are printed on traffic sheets and driver documentation, uses made of this facility in the past have included access information (e.g. go to gate 9 at rear exit), phone numbers and contact names. To input or change information simply type and/or delete the text as required. The information recorded will be deleted once the order is removed. For permanent Special Delivery Instructions at the customer point use the call record, which is not removed once an order is deleted.

Order Margin Value
A monetary figure may be input for each order to represent value (e.g. profit or revenue). This can then be used to display the profitability of a route or carrier list when compared to the appropriate vehicle or carrier cost figures. Alternatively if one of the 12 product groups is changed to the keyword "_MAR", any existing margin values will be over-written dynamically by these such values, which are specified in pence and not pounds & pence.

Called Over
The Called Over command is usually used to tell DiPS that any manual adjustments to routes have been completed and orders are ready to transfer back to the MAINFRAME. If the order has already been transferred back a tick will appear in this field.

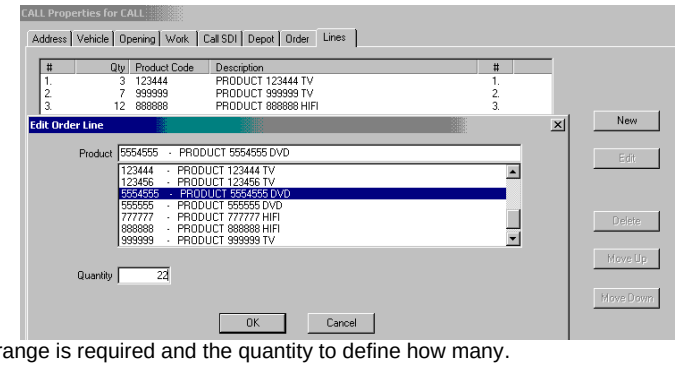
Status
The Status field has the following values = Available (lowest status), On Hold (created but not visible in egotrip mode when routing), Allocated (Called Over on a Route but not picked), Picked (not loaded yet), Loading (can be taken off route and put elsewhere), or Loaded/Gone (on vehicle) If the order is downloaded with a status above Available and is not on a route currently, it is created but not visible in Egotrip mode when routing.

Route
For information purposes the route number for this Order is displayed. The field will be blank if it is currently unrouted.

Linked Job

Another order or shipment ident may be specified to force that job to be done immediately after this shipment or order.

LINES - Order Line Information



To create a new Order Line, click on the New button to display the input screen, type the appropriate values into the fields provided and then click on the OK button. To change an existing Line select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Line in the list, simply select it and then click on the Move Up or Move Down button. To remove a Line click on the relevant # no. and click on Delete.

Product Quantity

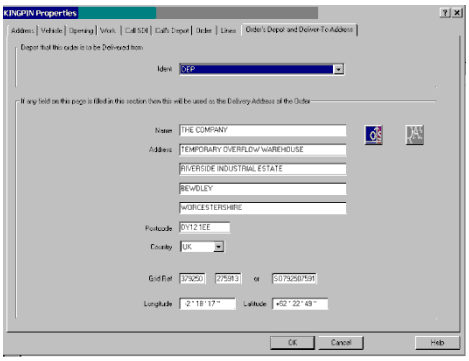
This field is used in conjunction with the Product Reference. It is the range code that is used to signify that a particular product range is required and the quantity to define how many. From this information the vehicle units represented by this order will be calculated for scheduling.

Product Data and Description

Product References are used to provide the system with delivery quantity information using previously defined product data or commodity range items. It is the range code that is used to signify that this particular product range is required. Product ranges are specific from site to site and may include anything from a pre-defined retail item to a simple DiPS Product Label such as KGS or CUBE. Product Data may also be referred to as Commodity Range Data or Items, and can be used in Daily Planning systems to represent the constituent parts of an order or shipment necessary to calculate quantity information for scheduling. An item reference code or range code may consist of between 1 and eight characters (both numeric and alphabetic), with a description text of up to 28 characters.

To create a new Order Line, click on the New button to display the input screen, type the appropriate values into the fields provided and then click on the OK button. To change an existing Line select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Line in the list, simply select it and then click on the Move Up or Move Down button. To remove a Line click on the relevant # no. and click on Delete.

Order Delivery Depot and Deliver-To Address



A deliver-to address may be input for any order that requires delivery to be made at another location to that specified on the customer account information. Instances might include a delivery to an overflow warehouse in peak periods or orders made by a head office for delivery to branch locations.

Once information has been entered on this screen, the location will be used rather than the call address data. This information will be displayed in the Address fields where displayed on routes or in the deferred list. To remove a deliver-to address, simply delete the Name, both Address lines and Postcode.

Ensure that the amended address has the correct grid reference (either by use of the gazetteer facility or a postcode).If deliver-to addresses are input after an initial Matrix run, a further run must be completed to pick up these new locations.

A delivery depot field may also be set if this call is to be scheduled from another depot rather than the depot the call is allocated to. This parameter will be employed to ensure the order is visible when a single depot or sub-set of depots is applied and is also used in the Postcode to Depot allocation routine to transfer the order to that depot. This will only be used when a delivery address has been entered for the order.

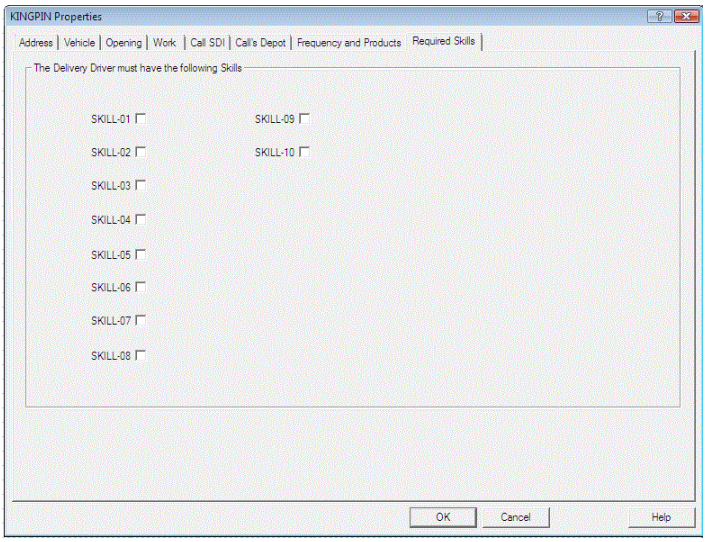
A customer Phone No. (or other contact information) and two notification parameters enable any 3rd party software to send arrival time information and further notifications based around two specific before and after times. Information can be imported from interfaces as required. The three fields can also be exported using the Routes Menu option Export Routes to Access Database or as Text. Relevant columns have also been added to display the information whilst in the DiPS program itself. As the Phone No. is a text field, other information such as email addresses can also be employed if required.

As an example of use, the phone no. may be used to provide a SMS message regarding delivery arrival time in the first instance, with the Pre Notification time being used to send a further message when the vehicle is for example 10 minutes away or the Post Notification tolerance time being employed if the vehicle will arrive say more than 15 minutes late. Depot information could be used to notify depots of any late returning vehicles.

Where supplied, Order information will have priority over Call information.

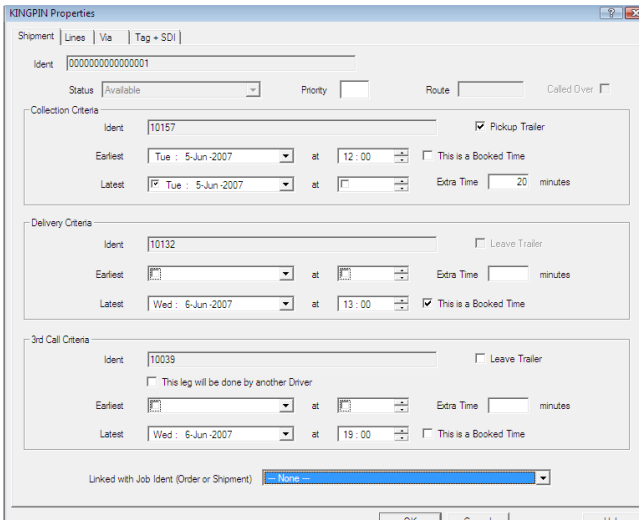
Skills Required

The Skills function allows certain attributes or “Skills” to be associated with drop points and drivers to ensure once the drop is placed on a route, the driver allocated is adequately trained to undertake the activities involved. Examples could be hazardous products, installation work, or specialised delivery equipment. The Skill Labels tab on Edit , Default Restrictions is used to activate and describe the specific skills required by drops. After a label has been entered for at least one skill, the Skills Required pages will appear on the calls, orders or shipments dialogs.



To set required skills for a drop, simply tick the appropriate label and click OK to save. Once skills have been assigned to delivery data, a specific named driver or driver classes must be established for these to be placed on routes. Any "Temp" drivers created automatically by DiPS will not have any skills assigned and will not be able to complete those jobs. The suitability of a driver to complete a job with skills assigned will be governed by his capability to do AT LEAST those skills required (i.e. a driver may be trained with more than the necessary skills for a certain job).

Creating and Modifying Shipments



Actual Shipments are employed by daily route planning systems for the identification of stock movements between customers, factories, or warehouse locations. As a minimum each shipment must consist of a unique identifier number or reference, a customer call identifier both for collection and delivery, product references with quantities, and collection and delivery dates; although shipments may have a 3rd part for a drop-off point or be split into a number of legs using "via" points. Any shipment created will only be valid for the dates indicated. To create a shipment that will re-appear every day use the dummy shipment operation. When creating an initial shipment manually in Kingpin, a dialog will appear to set the required type – click Yes for Strategic or No for Daily Planning shipments.

Shipment Number
The shipment number is used to identify movements between particular customers. It is normal for this identifier to be created using a generated sequence number if dummy shipment data has been set up. Up to 40 characters may be employed for manual shipment creation. This reference will be used throughout the DiPS system to identify the shipment.

Tag Field
In addition to the Ident a further 40 character sub-field (known as the TAG FIELD) may be used to allow for sub-grouping of calls within the print / delete / transfer/route functions. Any combination of characters or spaces may be input and amended at any time to allow for calls to be processed by matching tag fields

Origin Account Number
Every shipment created for use with the daily scheduling system must have a valid origin account number or Call Ident. Shipments will usually be created and deleted on a daily basis but the call and its appropriate access information will remain on file until the next shipment or order arrives. This call ident will represent the location at which the stock is collected before being transferred to the destination location.

Destination Account Number
The destination account number or Call Ident will represent the location to which the stock is delivered after being transferred from the origin location.

3rd Call
The 3rd Call Ident will represent the location to which empties are taken after the stock is delivered to the destination. Click the tick-box to allow the 3rd leg to be done by another driver. By default all parts will be planned as one.

Time Available and Times Due
These fields are used to input a collection "available from" time or delivery time that must be adhered to for that shipment. If a time is not specified the product is deemed to be available or acceptable for delivery at any time from midnight on the date set. Use the Booked Time flag to set the time to be a specific time and not a "from time". Only one part of a shipment can be set as Booked. If defined together for a shipment, the earliest and latest times and dates produce a window in which each of the collection and delivery activities must occur. As in the example above, the latest collection time and earliest delivery times need not be specified for a simpler approach.

Date Available & Dates Due
Use these fields to set dates available for collection, delivery and 3rd call (if necessary) from the calendar. Once set the shipment collection will only be available to the scheduling processes on that date and no other.

Status
The Status field has the following values = Available (lowest status), On Hold (created but not visible in egotrip mode when routing), Allocated (Called Over on a Route but not picked), Picked (not loaded yet), Loading (can be taken off route and put elsewhere), or Loaded/Gone (on vehicle) If the order is downloaded with a status above Available and is not on a route currently, it is created but not visible in Egotrip mode when routing.

Extra Time
The Extra time fields allow the input of an additional time in minutes to be taken at this point.

Priority
The Priority field allows the input of a value to increase the importance of a shipment.

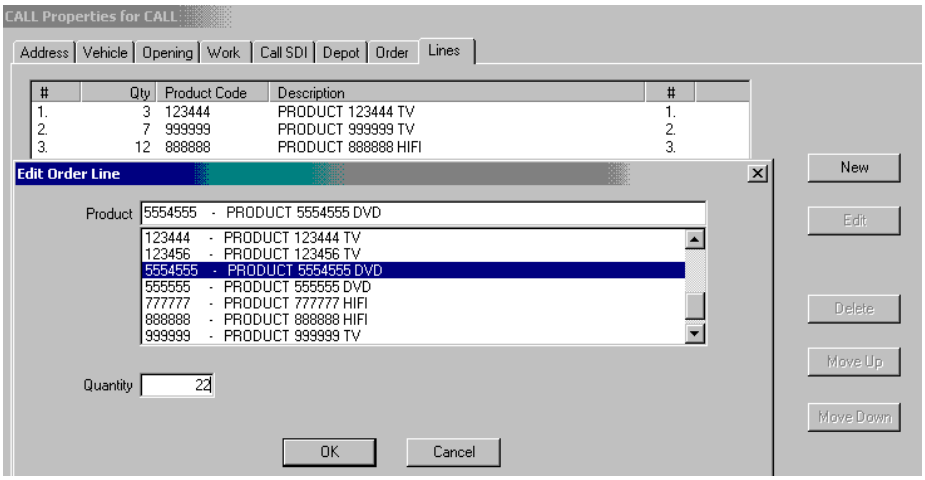
Linked Job

Another order or shipment ident may be specified to force that job to be done immediately after this shipment or order.

Pickup Trailer / Leave Trailer

These tick-boxes provide the ability to define where a trailer must be left behind or picked up initially. Routes will then take into account the trailer requirement and availability when adding other shipments or orders to a route.

Lines for Quantity



This tab is used in conjunction with the appropriate Product Label (for example pallets). The Lines are used to signify that a particular product range is required and how many. From this information the vehicle units represented by this order will be calculated for scheduling. Separate commodity items may be specified for each shipment input into the Daily Routing Package as required. This means that the shipment logic of moving products from point A to point B has the same facilities as a normal Order in DiPS. Using the Kingpin Mode or Egotrip mode once a movement has been created will display a dialog which can be used to add commodity items and their relevant quantities if required. These values will then be used to calculate the vehicle units and collect/deliver times for the shipment. To activate a quantity on the 3rd part of the shipment for any empties that have to be taken on to the 3rd call, simply specify a negative quantity of a product.

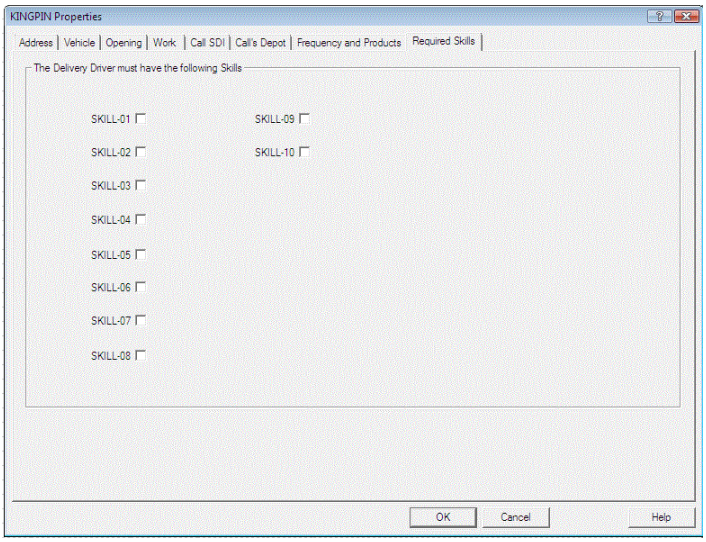
To create a new Shipment Line, click on the New button to display the input screen, type the appropriate values into the fields provided and then click on the OK button. To change an existing Line select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Line in the list, simply select it and then click on the Move Up or Move Down button. To remove a Line click on the relevant # no. and click on Delete.

Collection Special Instructions or Delivery Special Instructions (SDI)

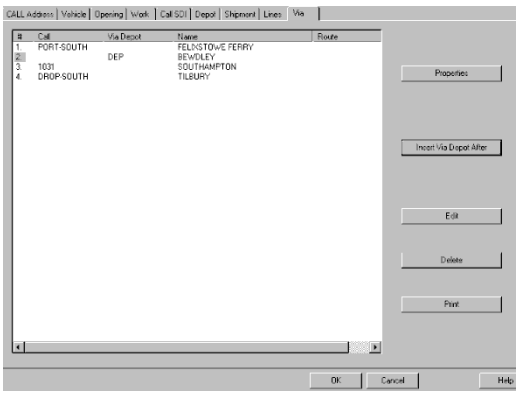
It is possible to use text for any information specific to either shipment collection or delivery or both. Since they are often printed on traffic sheets and driver documentation, uses made of this facility in the past have included access information (e.g. goto gate 9 at rear exit), phone numbers and contact names. To input or change information simply type and/or delete the text as required. The information recorded will be deleted once the shipment is removed. For permanent Information use the Call SDI tab, which is not removed once a shipment is deleted.

Skills Required

The Skills function allows certain attributes or “Skills” to be associated with drop points and drivers to ensure once the drop is placed on a route, the driver allocated is adequately trained to undertake the activities involved. Examples could be hazardous products, installation work, or specialised delivery equipment. The Skill Labels tab on Edit , Default Restrictions is used to activate and describe the specific skills required by drops. After a label has been entered for at least one skill, the Skills Required pages will appear on the calls, orders or shipments dialogs.

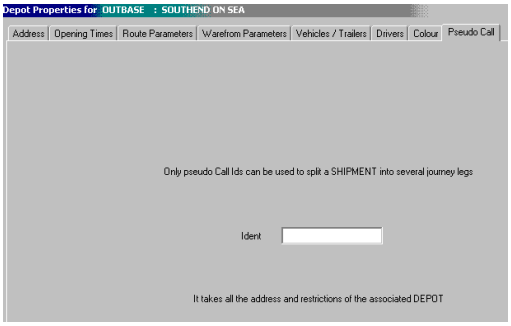


To set required skills for a drop, simply tick the appropriate label and click OK to save. Once skills have been assigned to delivery data, a specific named driver or driver classes must be established for these to be placed on routes. Any "Temp" drivers created automatically by DiPS will not have any skills assigned and will not be able to complete those jobs. The suitability of a driver to complete a job with skills assigned will be governed by his capability to do AT LEAST those skills required (i.e. a driver may be trained with more than the necessary skills for a certain job).



Creating Via Points for Shipments

To allow for daily shipments to be split into a number of legs, any shipment can be split into a number of stages using the Via tab. This will enable a shipment to be collected from a call, taken to another depot location and delivered on from there. To create such a leg it is first necessary to set an appropriate staging point at a depot. Use the Pseudo Call tab field on any depot screen to type in the ident required. Up to 10 characters may be used. Then using the Via tab on a shipment screen, click on the Insert Via Depot After button to display the dialog listing all available depot points. Select the required Pseudo Call and click Ok to add the point in the list. Use the Edit/Delete buttons to modify the legs as required. The Properties button will display the details for that Call. In the example above the shipment is taken from PORT-SOUTH via DEP to call 1031 Southampton and then onto the 3rd Call DROP-SOUTH. Each leg of the shipment is presented as an individual shipment allowing each leg to be routed on different routes. The routes are displayed where appropriate in the Route section. Various checks are made to ensure that the integrity of the overall shipment is maintained by ensuring the legs are completed in a logical manner. Please note that if the shipment legs are changed after some are routed this may lead to legs being removed from routes if they are deemed invalid. A warning message will appear if this is the case.



Dummy Shipment Information

Live shipments may be created by the use of dummy shipment data, which is set up for standard movements which take place every day, so that a basic list of shipments for any usual working day may be quickly and easily established. Each dummy shipment must consist of a unique identifier, a customer call identifier both for collection and delivery, and product references and quantities. Collection and Delivery dates are not required as these will be set by the system when they are converted to "live" shipments. To establish dummy shipments rather than actual or live shipments, us the appropriate section in Kingpin mode to create them and nominate the required days. To produce actual shipments from the dummy list on any one day, use the File, Transfer menu option :-

Select Shipments at the item Type to be Transferred box
At the Dates section, set the Dummy's Day of Week ? from the selection box
At Depart Date ? and Arrive by Date ? prompts select the required dates

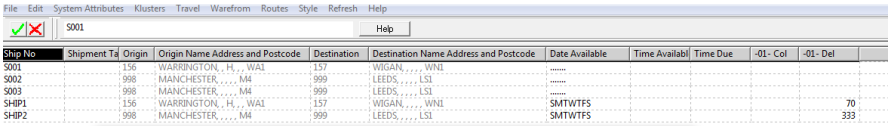
This process will produce an actual shipment from every dummy shipment nominated for that particular day. The shipment ident will be produced from a system sequence number. To display and amend an existing dummy shipment, use Kingpin Mode to display the appropriate shipment number change data as necessary. The dummy information will be amended for all future transfers.

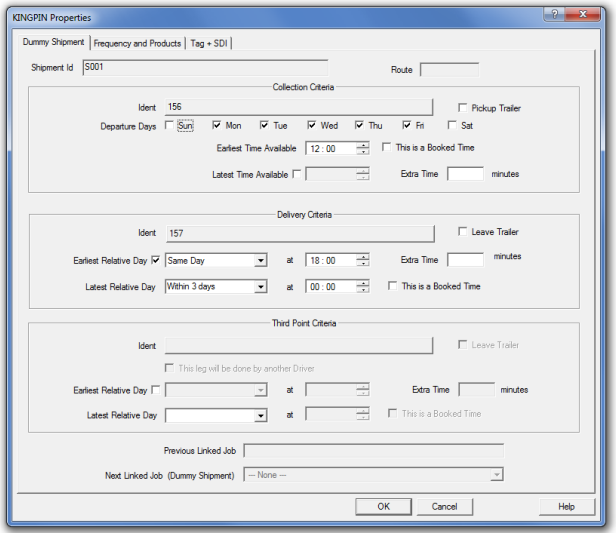
Using Dummy Shipments with Fixed Routes

When using Dummy Shipments with Fixed Routes, on entering Fixed Route mode all the shipments will be displayed in the deferred list and these can be dragged onto appropriate routes. It is important to note that when adding a dummy shipment to a route, the departure days for the shipment and route must correspond, i.e. if the shipment is set up to valid Monday to Friday, the route must also depart on those days for the fixed pattern to operate correctly. It also worthwhile to note that when using the Algorithm Passes option “Load Fixed Routes” both actual shipments and working routes will be created from the dummy data and fixed route plans.

The destination account number or Call Ident will represent the location to which the stock is delivered after being transferred from the origin location.

Using Shipments in Strategic Studies





In Edit, Kingpin Mode, click on the Shipments tab to display all the data. When creating an initial shipment manually in Kingpin, a dialog will appear to set the required type – click Yes for Strategic or No for Daily Planning shipments.

Shipment Number

The shipment number is used to identify movements between particular customers. Up to 40 characters may be employed for manual shipment creation. This reference will be used throughout the DiPS system to identify the shipment.

Shipments can also be employed in strategic studies as well as daily route planning systems for the identification of stock movements between customers, factories, or warehouse locations. As a minimum each dummy shipment must consist of a unique identifier number or reference, a customer call identifier both for collection and delivery, the required frequency and product references with quantities; although shipments may also have a 3rd part for a drop-off point .

Tag Field

In addition to the Ident a further 40 character sub-field (known as the TAG FIELD) may be used to allow for sub-grouping of shipments within the print / delete / transfer/route functions. Any combination of characters or spaces may be input and amended at any time to allow for calls to be processed by matching tag fields

Origin Account Number

Every shipment created must have a valid origin account number or Call Ident. This call ident must already exist will represent the location at which the stock is collected before being transferred to the destination location.

Destination Account Number

The destination account number or Call Ident will represent the location to which the stock is delivered after being transferred from the origin location.

3rd Call

The 3rd Call Ident will represent the location to which empties are taken after the stock is delivered to the destination. Click the tick-box to allow the 3rd leg to be done by another driver. By default all parts will be planned as one.

Collection Criteria

Use the **Departure Days** tick-boxes to set the days that the shipment is available for collection. This does not reflect the actual days it will be picked up – these will be governed by the frequency. **The Earliest and Latest Time** available fields can be used to input a collection “available from” time window or just an available at time if necessary. If a time is not specified the product is deemed to be available or acceptable for collection at any time. Use the Booked Time flag to set the time to be a specific time. The **Extra Time** field adds additional time in minutes to be taken at this point.

Delivery / Third Point Criteria

Use the **Earliest and Latest Relative Days** fields to set the delivery timing. Same Day, Next day or within 2/3/4/5/6 days may be used to set the day. **Time due** fields can also be used to input a required time or time window. If a time is not specified the product is deemed to be available or acceptable for delivery at any time from midnight. Use the Booked Time flag to set the time to be a specific time. The **Extra Time** field adds additional time in minutes to be taken at this point.

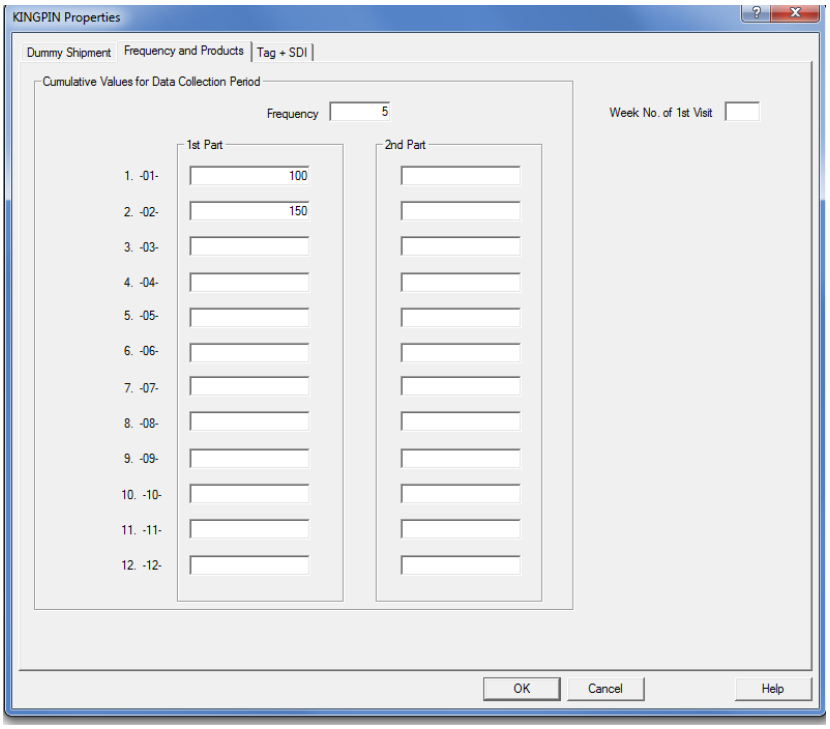
Linked Job

Another shipment ident may be specified to force that job to be done immediately after this shipment.

Pickup Trailer / Leave Trailer

These tick-boxes provide the ability to define where a trailer must be left behind or picked up initially. Routes will then take into account the trailer requirement and availability when adding other shipments or orders to a route.

Frequency and Products



This tab is used to define the frequency and movement quantities in conjunction with the appropriate Product Label (for example pallets). From this information the vehicle units represented by this order will be calculated for scheduling.

The Frequency value will define how many movements are to be made in the planning period (with the departure days governing the available days).

Input values in the 1st part column for each product required. These values will then be used to calculate the vehicle units both collection and delivery of the shipment.

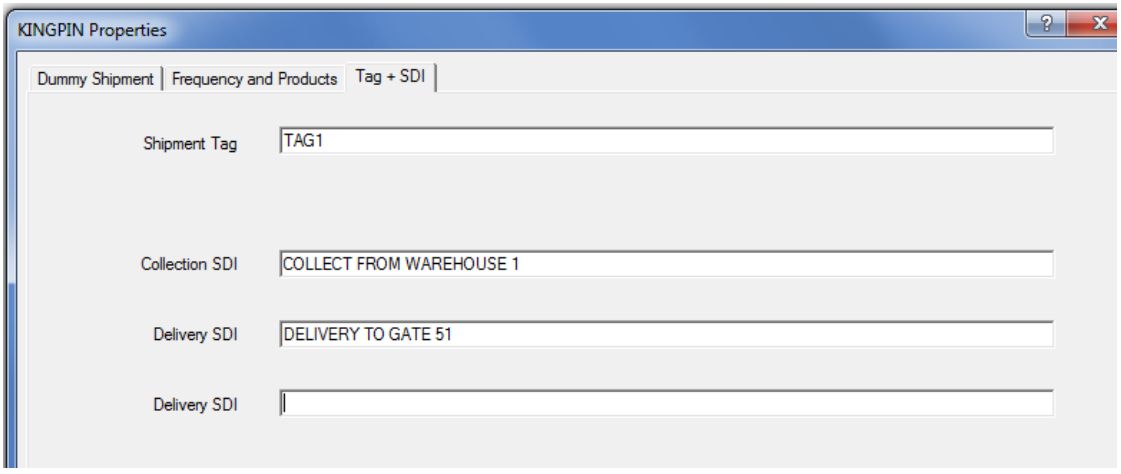
To set a quantity for a 3rd part to the shipment or for any empties that have to be taken on to the 3rd call, simply specify the product s in the 2nd part column.

The Week No of 1st Visit field may be set if a multi-week plan is to be used, to define the week of the first movement (e.g. week 2 of a 4 week plan)

Shipment Tag Field and Special Instructions (SDI)

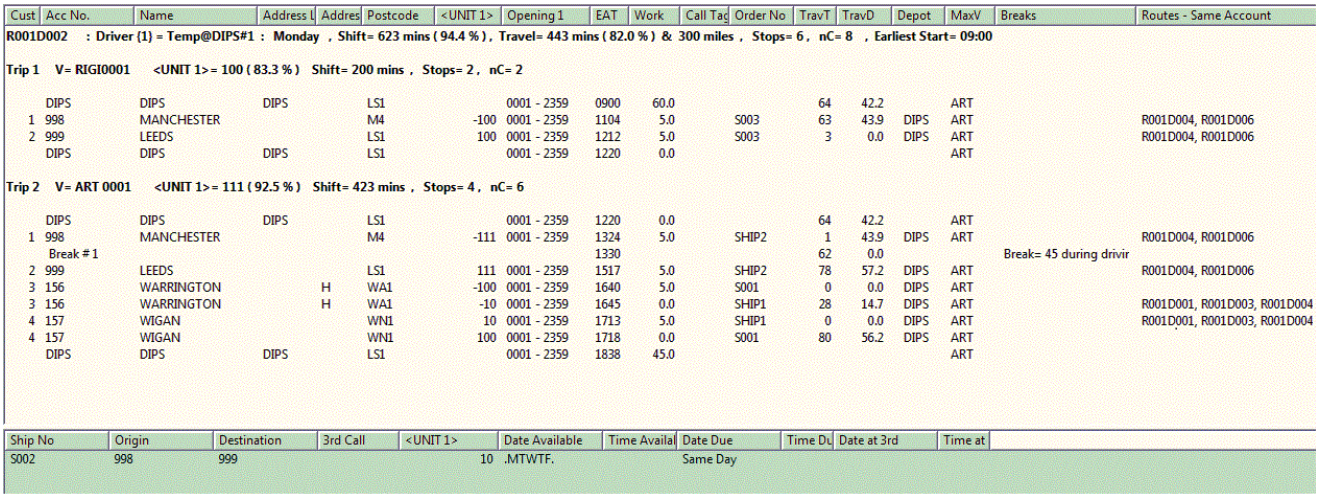
A tag field can be used to sub-group this shipment within the print / delete / transfer functions and in the routing algorithm passes. Any combination of characters or spaces may be input and amended at any time to allow for depots to be processed by matching tag fields

It is possible to use text for any information specific to either shipment collection or delivery or both. Since they are often printed on traffic sheets and driver documentation, uses made of this facility in the past have included access information (e.g. go to gate 9 at rear exit), phone numbers and contact names. To input or change information simply type and/or delete the text as required.



Routing with Strategic Shipments

Shipments may be combined with normal call data if necessary and planned using the Vanguard routing program. Both the collection and delivery elements legs of the shipment will appear as different links on a route with appropriate travel time and work time been added between.



Cust	Acc No.	Name	Address L	Addres	Postcode	<UNIT 1>	Opening 1	EAT	Work	Call Tag	Order No	TravT	TravD	Depot	MaxV	Breaks	Routes - Same Account
R001D002 : Driver (1) = Temp@DIPS#1 : Monday , Shift= 623 mins (94.4 %), Travel= 443 mins (82.0 %) & 300 miles , Stops= 6 , nC= 8 , Earliest Start= 09:00																	
Trip 1 V= RIGI0001 <UNIT 1>= 100 (83.3 %) Shift= 200 mins , Stops= 2 , nC= 2																	
	DIPS	DIPS	DIPS		LS1		0001 - 2359	0900	60.0			64	42.2		ART		
1	998	MANCHESTER			M4	-100	0001 - 2359	1104	5.0		S003	63	43.9	DIPS	ART		R001D004, R001D006
2	999	LEEDS			LS1	100	0001 - 2359	1212	5.0		S003	3	0.0	DIPS	ART		R001D004, R001D006
	DIPS	DIPS	DIPS		LS1		0001 - 2359	1220	0.0						ART		
Trip 2 V= ART 0001 <UNIT 1>= 111 (92.5 %) Shift= 423 mins , Stops= 4 , nC= 6																	
	DIPS	DIPS	DIPS		LS1		0001 - 2359	1220	0.0			64	42.2		ART		
1	998	MANCHESTER			M4	-111	0001 - 2359	1324	5.0		SHIP2	1	43.9	DIPS	ART		R001D004, R001D006
	Break # 1							1330				62	0.0			Break= 45 during drivir	
2	999	LEEDS			LS1	111	0001 - 2359	1517	5.0		SHIP2	78	57.2	DIPS	ART		R001D004, R001D006
3	156	WARRINGTON		H	WA1	-100	0001 - 2359	1640	5.0		S001	0	0.0	DIPS	ART		
3	156	WARRINGTON		H	WA1	-10	0001 - 2359	1645	0.0		SHIP1	28	14.7	DIPS	ART		R001D001, R001D003, R001D004
4	157	WIGAN			WN1	10	0001 - 2359	1713	5.0		SHIP1	0	0.0	DIPS	ART		R001D001, R001D003, R001D004
4	157	WIGAN			WN1	100	0001 - 2359	1718	0.0		S001	80	56.2	DIPS	ART		
	DIPS	DIPS	DIPS		LS1		0001 - 2359	1838	45.0						ART		

Ship No	Origin	Destination	3rd Call	<UNIT 1>	Date Available	Time Availal	Date Due	Time Du	Date at 3rd	Time at
S002	998	999		10	.MTWTF.		Same Day			

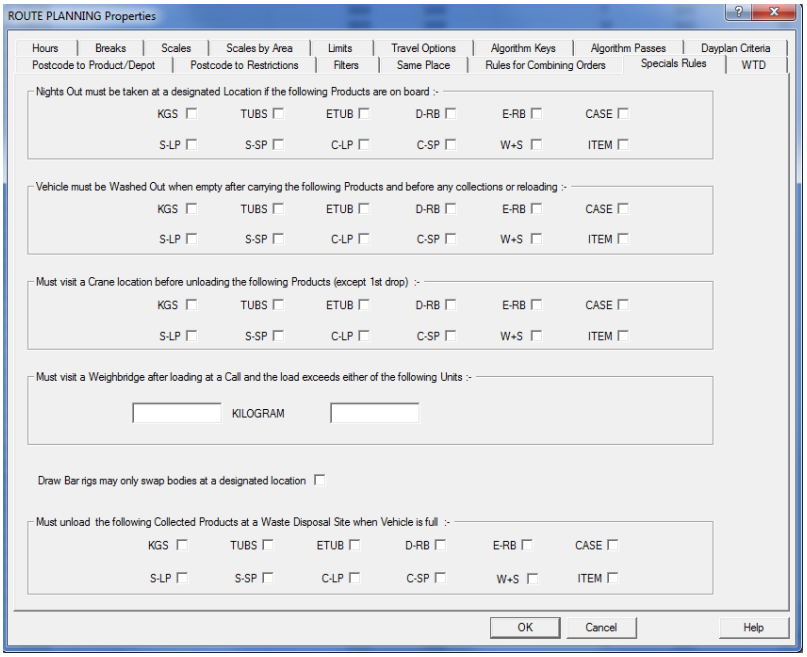
Shipments in the Deferred List (green panel), however, will be consolidated into a single line with the shipment no., origin call id and destination call id all being available as separate column headings. The Deferred List headings will also be automatically modified with the basic column headers required whenever shipments are present.

As can be seen from the route above, shipments can be planned on different trips within the same route if necessary (although this is not always ideal and normally the maximum number of trips should be set to 1). Shipments may also be combined if times and quantities allow – for example it is possible to collect two shipments at the same time for onward delivery and then complete the movement later on in the route.

Special Locations

The Specials tab in Kingpin Mode enables the addition of locations to be used alongside the Special Rules section in Routes Parameters to account for vehicles having to travel to certain locations as part of their daily shift. Examples would be wash-out points for tankers to be cleaned after delivery of certain products or secure lorry parks for night outs.

In the Routes Parameters dialog, the Special Rules tab enables the following :-



Nights Out must be taken at a designated location if any of the ticked products are on the vehicle when a night out is required. The program will then assess the list of specified night out locations and use the most appropriate one.

Vehicle must **Wash Out** at an appropriate point after carrying the tocked products and before collecting or reloading with any product.

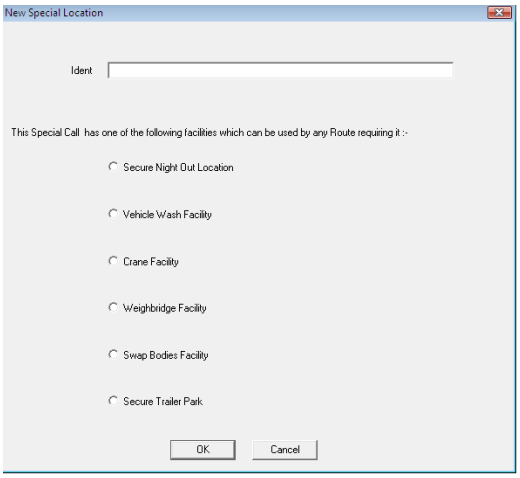
The vehicle Must **Visit a Crane** location before unloading any of the indicated products at a subsequent call point AFTER the first delivery on the trip is made.

The vehicle must **Visit a Weighbridge** location after loading at a call (not a a depot) and the load exceeds either of the indicated vehicle units. A zero or blank value indicates that this parameter is inactive.

If set, Draw Bar vehicles may only swap bodies at a designated location and not at a call when delivering or on the road as part of driving between two calls.

With the **Must unload collected products at a Waste Disposal Site**, routing logic enables waste collections to be made and the appropriate product to be taken and emptied at specific sites. As orders are added to or route or moved, the program will automatically select the best Disposal Sites from those available (looking at criteria such as Day Restrictions and Opening Times) when the vehicle is full or a visit is required since the next collection will take the vehicle over its The vehicle can fill and empty multiple times in a single driver shift if appropriate.

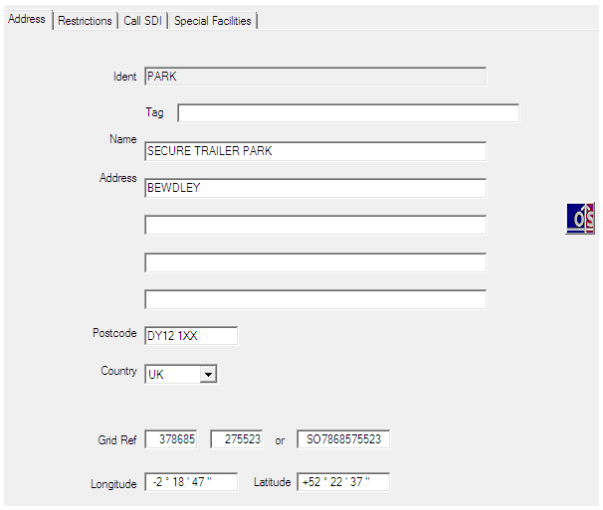
If shipments have a pickup/leave trailer attribute set, a tractor unit or motive unit may only leave a trailer at a designated trailer park before collecting a trailer at a shipment collection point ..

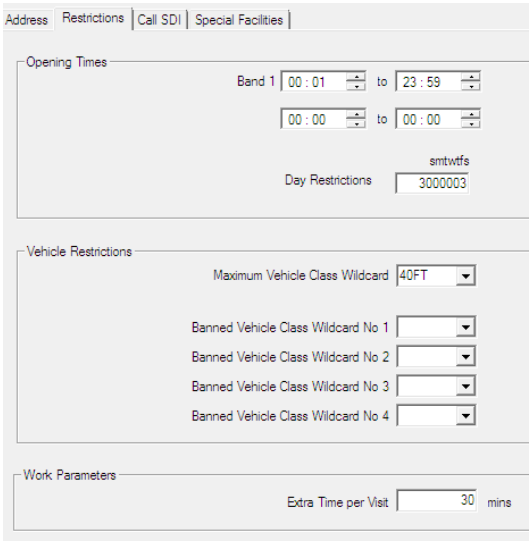


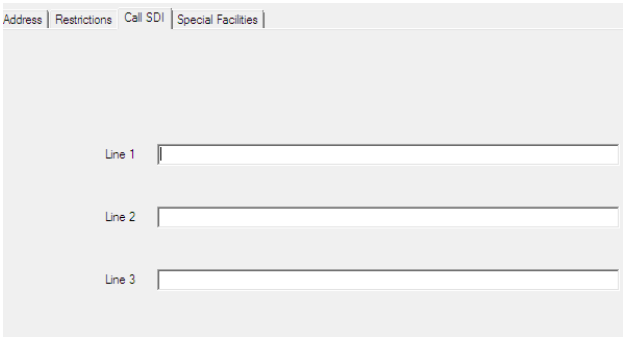
Creating & Changing Special Locations

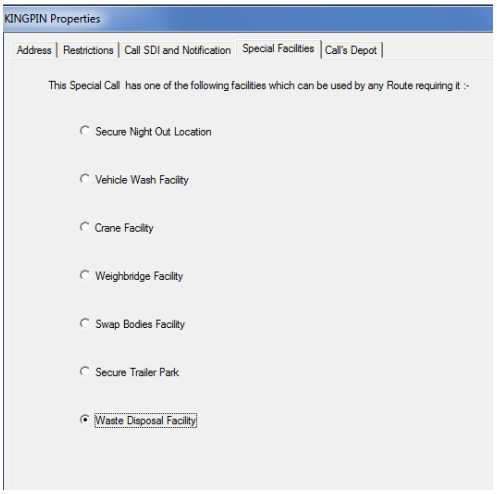
In the The Specials tab in Kingpin Mode a menu option may be displayed by clicking the RHB on any cell. This menu will allow Create, Properties, Search or Delete for Special Locations. To create a new location, select the Create option to display an ident box. Fill this in with the required ident and select one of the special location types (such as Waste Disposal), click OK to create it.

Detail for address, restrictions, delivery instructions can then be added. Examples of information would be ADDRESS - a valid postcode to identify the location; vehicle access or timing RESTRICTIONS.





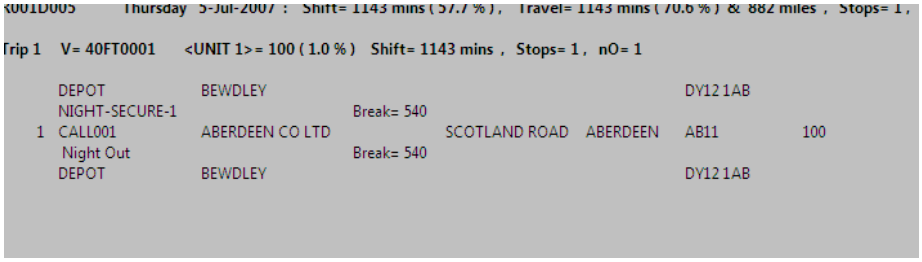




The Location Type can be changed after creation using the Special facilities tab to choose one of the available types.

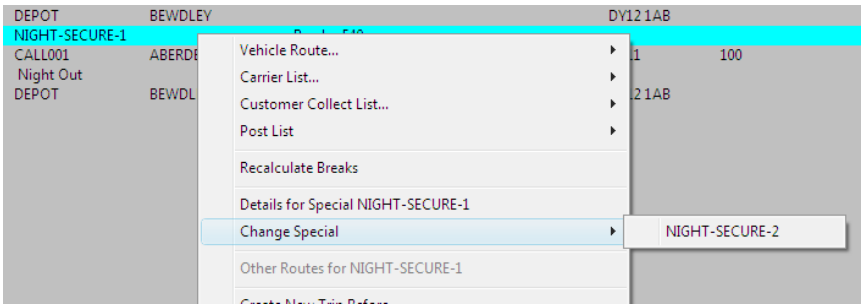
Using Special Locations when Routing.

Routing programs will automatically select the most appropriate location for any activity in the route building code.



When routes are visible in Egotrip mode, any Special Locations can be seen at the relevant place in the route with the Acc No. column displaying the appropriate ident. Locations will also be printed and exported alongside usual route data.

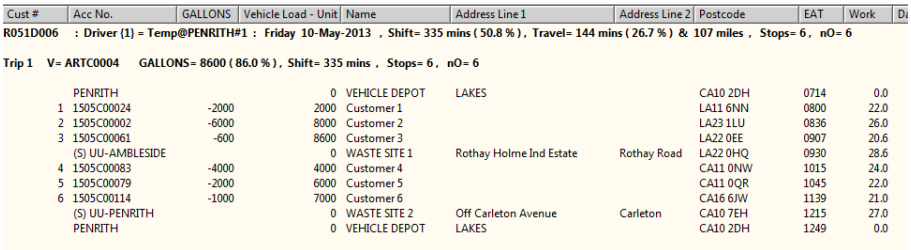
To display the Location properties dialog or change the Special, click on the route with the right button and choose the required option . The Change Special menu will display all other available choices for the type of Special Location : click on the new ident to change it if necessary.



Waste Disposal

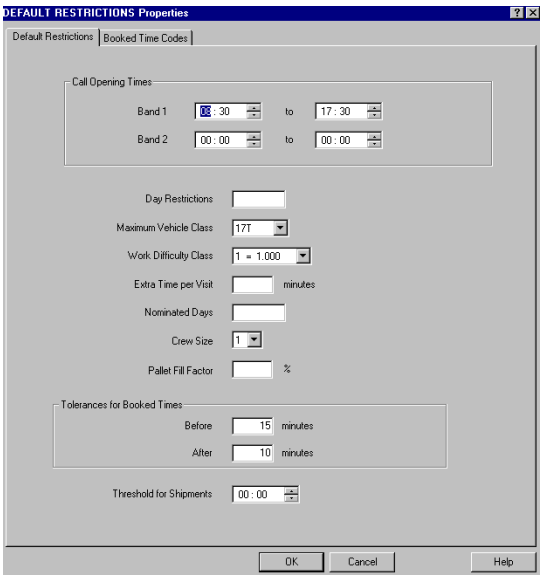
As orders are added to or route or moved, the program will automatically select the best Disposal Sites from those available (looking at criteria such as Day Restrictions and Opening Times) when the vehicle is full or a visit is required since the next collection will take the vehicle over its capacity.

In the example route above, the vehicle departs from PENRITH depot and collects from Customer 1, 2 & 3 which will fill the vehicle to 8600 gallons (or 86% of the 10,000 capacity), the program then automatically allocates the nearest available waste site (WASTE SITE 1) to enable the vehicle to empty. At this point the vehicle load will reduce to 0 to allow more collections to be planned. The next collection is 4000 gallons (which would have taken the vehicle over capacity) and a further two collections are then added to the route before a final Waste Disposal – this time at another location.



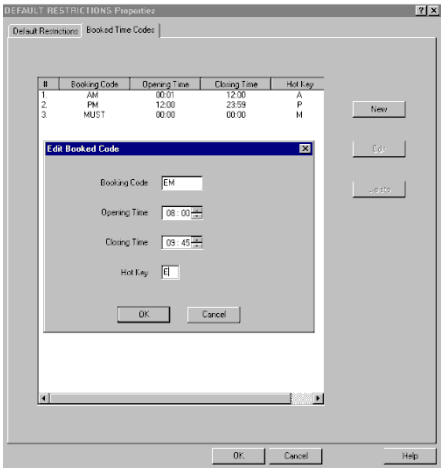
Designated Waste points may be changed manually if required to specific points by use of the Change Special option on the right hand button menu when clicking on an existing Waste site.

Default Restrictions



The Default Restrictions properties page specifies the times and access criteria for all calls created unless input information (from a spreadsheet for example) dictates otherwise.
The restrictions fields include opening times, maximum vehicle size; work class, crew size, day restrictions, nominated days, extra drop time, and pallet fill factors. For more information on these fields see the section on restrictions.

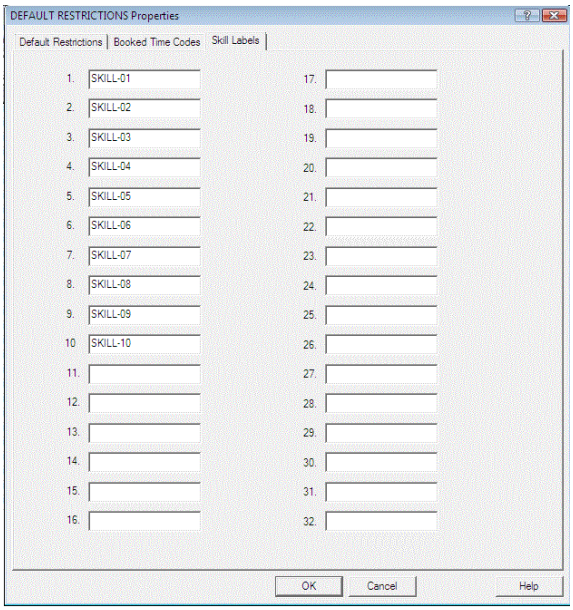
The use of tolerances for booked times provides a means of adding a number of minutes before and / or after the fixed time that a vehicle may arrive. When the route planning processes are considering a booked time, a window of arrival is used around the indicated time, producing a more flexible solution, rather than the system attempting to plan a delivery for example at exactly 10.00 and not 09.59 or 10.01.With a tolerance value of 10 minutes before and 5 minutes after a 09.00 booking, the vehicle may arrive at any time between 09.50 and 09.05. There is only one setting for booked time tolerance and it applies to all booked times to be routed in the plan. If various tolerances are required use opening and closing time restrictions instead of booked times.



Booked Time Codes

For a range of delivery time windows, a coding system may be set up using the Booked Time Codes facility. Up to 17 different codes may be specified using a 4-character code field and appropriate opening times and closing times (using the 24-hour clock notation of HHMM). If these codes are input into either call or order booked time fields, the planning programs will use the table for definition of the available access times. For easier input a Hot Key can also be set to allow a single letter to be used rather than the longer code. All time values may be amended during the course of a study. The programs will update data to use the latest valid codes and times. Three Booked Time Codes are always reserved by the system : A - will force an AM booking ; P - will force an PM booking ; MUST - will require a booking in to be made for each order delivered (daily planning only). Neither the codes nor hot keys may be amended for these entries. Both access times, however, are available for user-defined values. To create a new code click on New and fill in the relevant fields followed by OK. To delete or modify a code highlight the appropriate number and click wither Delete or Edit.

Skills



The Skills function allows certain attributes or “Skills” to be associated with drop points and drivers to ensure once the drop is placed on a route, the driver allocated is adequately trained to undertake the activities involved. Examples could be hazardous products, installation work, or specialised delivery equipment.

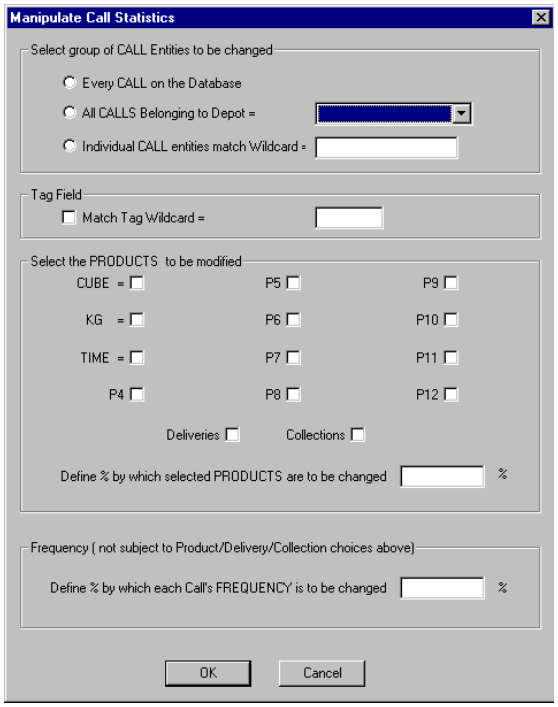
The Skill Labels tab is used to activate and describe the specific skills required by drops calls, orders or shipments. Up to 8 characters may be employed for each of the 32 skill types.

After a label has been entered for at least one skill, the Skills Required pages will appear on the calls, orders or shipments dialogs to enable the necessary skills to be ticked and associated with each specific drop and in the Style, Headings section to allow them to be displayed.

Once skills have been assigned to delivery data, a specific named driver or driver classes must be established for these to be placed on routes. Any "Temp" drivers created automatically by DiPS will not have any skills assigned and will not be able to complete those jobs. The suitability of a driver to complete a job with skills assigned will be governed by his capability to do AT LEAST those skills required (i.e. a driver may be trained with more than the necessary skills for a certain job).

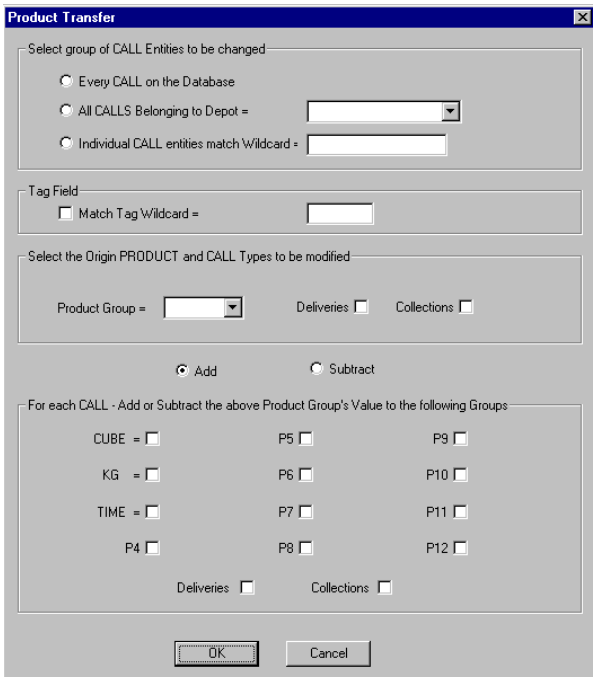
Stats Manipulation and Product Transfer

Call product data may be factored in the DiPS system either by using Stats Manipulation or Product Transfer.

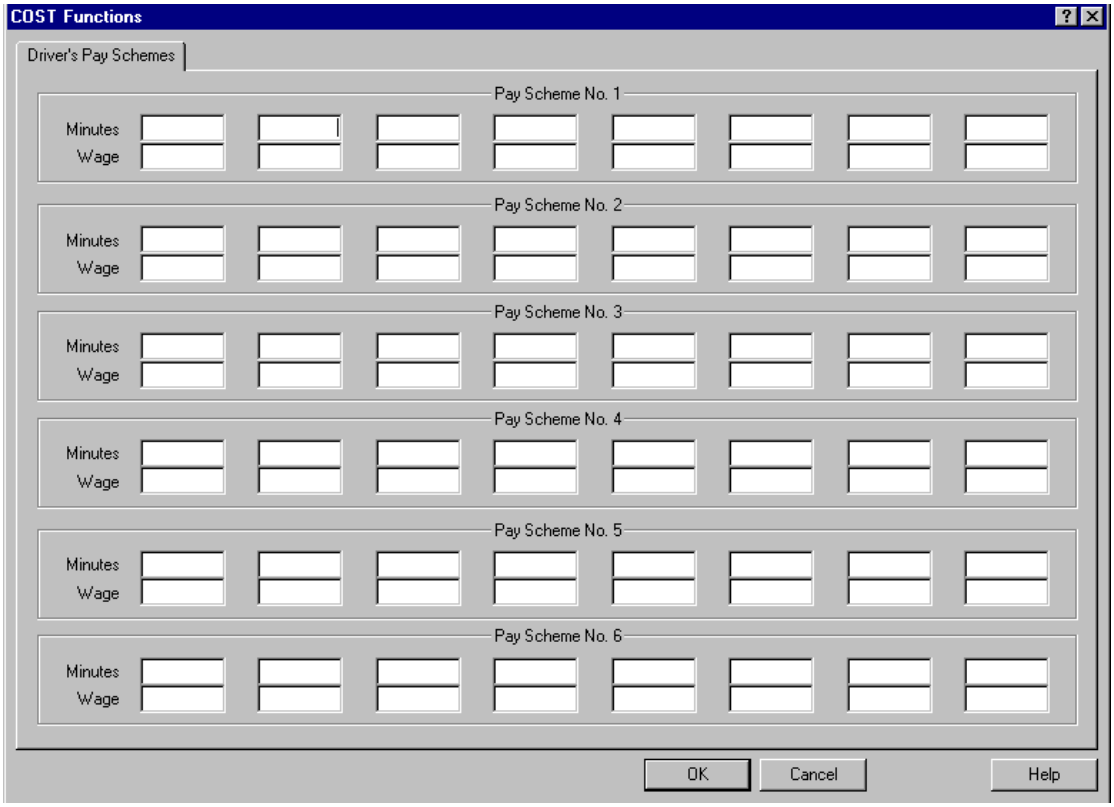


Using Stats manipulation each of the 12 products may be factored by a percentage value to increase or decrease their values. Percentage values of less than 100 would decrease product totals, and values of 100+ would increase accordingly (e.g. 200% doubles values). Set the required calls using the radio buttons for Every Call, by depot or matching ??? wildcards or tag field, tick the required product(s), and set a value in the percentage field. Frequency values can also be factored to change the visits required also.

Using Product Transfer a single Product value may be added or subtracted from each of the 12 products. Set the required calls using the radio buttons for Every Call, by depot or matching ??? wildcards or tag field, select the origin product to be added or subtracted using the selection box, and tick the required destination product(s) to be factored. Deliveries and collections can also be used as a filter.



Cost Functions

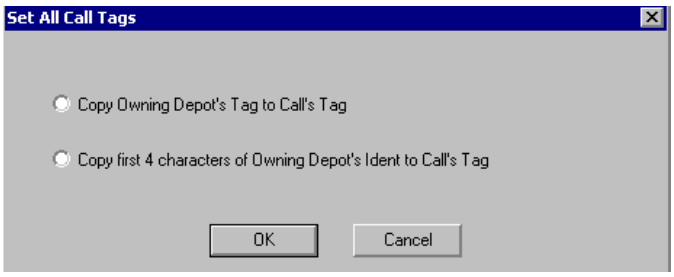


For a more detailed costing output for routes, drivers wage or pay schemes may be introduced. Key in the relevant umber applicable to each class and ensure that the appropriate schemes have been established on the Cost Function Menu. Pay schemes can be used in conjunction with the other Vehicle Costs to produce detailed output for routes. Where driver details are employed using the Drivers for the Implied Depot function a Pay Scheme may be defined by driver name instead of by vehicle class. Any number from 1 to 6 may be used to correspond to a Pay Scheme set.

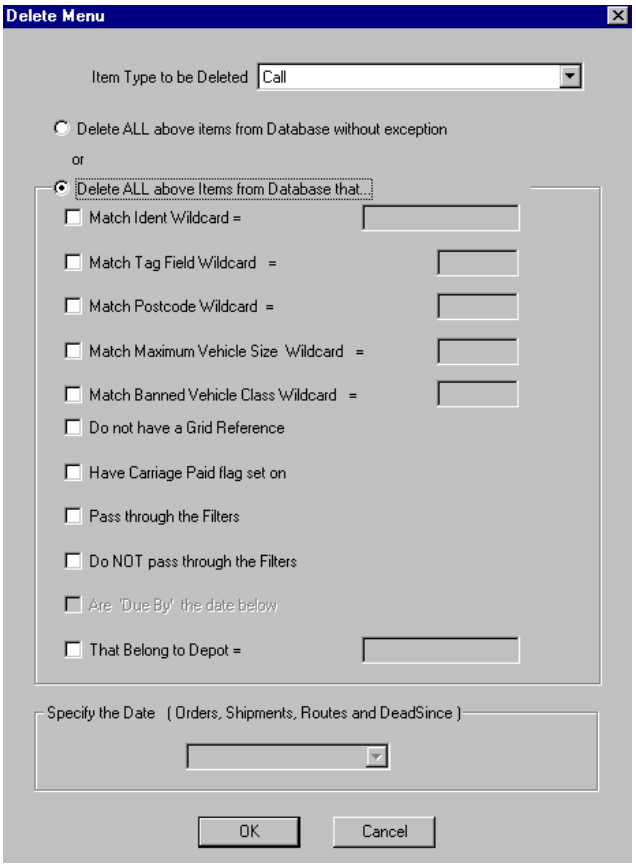
Set appropriate values in the minutes and wages columns for each scheme used. For example if a driver earned a basic £200 for a 600 minute working day, enter 0 minutes with £200 and 600 minutes with £200. If a sliding scale overtime system was then in use, enter the maximum values (780 minutes and £260). If a driver then worked 720 minutes he would earn a proportion of the total, i.e. £220.

Set Call Tags

Information may be copied from the owning depot into the tagfield of call calls currently belonging to the depot using the Edit , Set Call Tags menu option. Either the depot tag field itself or the first 4 characters of the depot may be copied. This may prove useful in further manipulation of calls, for example where the trace ability of calls moved from depot to depot is important.



Deleting Data



Any data within DiPS can be deleted using the File, Delete menu option provided. Facilities to specify the required data include : Item Type to be deleted - specify what to delete (calls, depots, routes etc.); Match Fields - select individuals, all data, or specific criteria for deletion; That Belong to Depot Modifier - identifies a single depot only for processing entity types; Date - allows deletion for a specific date (orders, shipments or routes). A blank in any field will mean that this field is ignored for the purposes of that deletion.

It is important to note that the deletion of any entity within DiPS will automatically remove any other entity directly related to the original. For example to delete a depot will delete all of its constituent parts such as vehicles, routes, calls and orders ! This is also true for call and orders. However, it is useful to note that deleting routes will not remove calls, orders or vehicles. To safeguard against possible error the Entity Type Depot will only be allowed where more than one depot currently exists.

To allow for an “Un-Do” process, before a deletion is undertaken the program will automatically complete a backup of the current file using the File, Backup routine. To restore this file use the File, restore option as normal to recover the required Mass file. A report of the deletion activity is written to a file called DELETE.OUT. Use the File, View Sysout option to view this if necessary.

Item Type to be Deleted

This field will control which section of the data is required for deletion. Select from the drop-down box for -

Call - for calls
Depot - for depots (beware - this removes all its calls, routes ,vehicles etc. also)
Working Route - for current routes
Vehicles
Drivers
All Trunking Links
All Algorithm Passes in routing parameters
Orders (daily routing)
Fixed Route (daily routing)
Shipments (daily routing)
All Commodity Items (daily routing)
All Road Link patches
All Link - for ferry and inter-modal links
Postcode Zone Table
All Call Delivery Slots
Profile Table (profiled model)

for multiple models commodity ranges for depots, calls, and product supply chain links can be deleted separately using IDEPOT, ICALL, and ITRUNK for key1 respectively. All commodity ranges for the entire database can be erased using IALL;

Delete Control Fields

This field is employed to control the extent to which the specified Entity Type is deleted. Set the required options using either the Delete without Exception option for **ALL** data or the match fields :

Ident Wildcard - a single individual entity (call, depot, route etc.) or using ? and # wildcard notations to match any characters or numbers respectively. Each time a single entity is chosen a dialog box will then appear asking for the next ident. Type in another single ident followed by OK, or Cancel to exit.
Tag Field Wildcard - to delete by tag field
Postcode Wildcard - to delete all entities in a particular postcode area or sector
Vehicle Sizes - calls with a matching Maximum vehicle size or Banned Vehicle field
Do not Have a Grid Reference - entities without a valid grid reference (calls, depots, orders etc.)
Have Carriage Paid flag set on – calls with this field set
Pass through the Filters - calls which meet the filter parameters set or NOT for those failing
Due By - all orders with a due by date earlier than the specified date field.

That Belong to Depot - deletion is restricted to ALL from a single depot rather than ALL from ALL depots. Type in the relevant depot ident to restrict the process. Leave this field blank if it is not required.

Using Wildcards

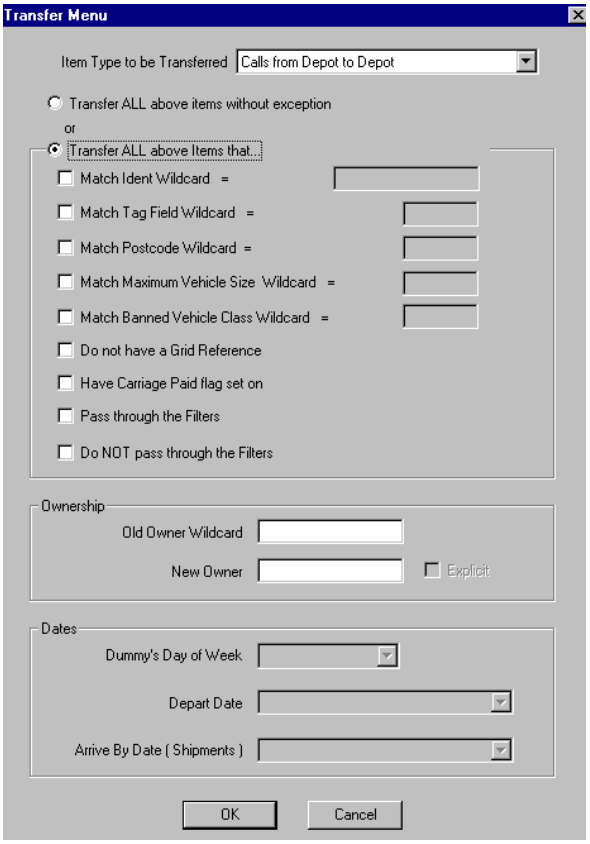
Wildcard fields may be used to match data consisting of any combination of letters, numbers, or # , ? , and ^ symbols. A ? will match any character in an entity field including blank spaces. A # will match any number, and a ^ will match letters only. Blank spaces where used also provide valid criteria. In this way any combination may be used to match a range of idents.

AY?????? - would match any ident starting AY such as AY12, AY1,or AYXCRT.
BSE#????? - would match only idents starting BSE with a number in the next field (that is BSE23 and not BSEA).
WAS^ - would match only idents with WAS followed by a letter (not WAS1 etc.)
R???D001 – would if used with Routes would match all routes for day 1 of the operation

Specify The Date

For daily routing systems the deletion of routes, shipments and orders may often require a date to be set in order to limit the scope of the output. Setting a date field will restrict the operation to UP TO AND INCLUDING the indicated date. You must set the correct date at this point for the function to complete properly. You will not be allowed to progress without setting a date. If using the DEAD_SINCE option it will delete calls that placed their last order up to and including this date. Using the Delete ALL without exception button will ignore the date when deleting shipments and orders.

Transferring Data



Various entities can be transferred using the menu option provided. Specify an Entity Type to be transferred , followed by the old / new owners and required selection. To allow for an “Un-Do” process, before a deletion is undertaken the program will automatically complete a backup of the current file using the File, Backup routine. To restore this file use the File, restore option as normal to recover the required Mass file.

Item Type to be Transferred

Select from the drop-down box for - Calls from Depot to Depot ; Orders from call to Call ; Working Routes to Fixed Routes ; Fixed Routes to Working Routes ; and Dummy Shipments to Actual Shipments

Transfer Control Fields

The Key1 field is employed to control the extent to which the specified Entity Type is transferred. Set the required options using either the Delete without Exception option for **ALL** data or the match fields :

Ident Wildcard - a single individual entity (call, depot, route etc.) or using ? and # wildcard notations to match any characters or numbers respectively Each time a single entity is chosen a dialog box will then appear asking for the next ident. Type in another single ident followed by OK, or Cancel to exit.
Tag Field Wildcard - to transfer by tag field
Postcode Wildcard - to transfer all entities in a particular postcode area or sector
Vehicle Sizes - calls with a matching Maximum vehicle size or Banned Vehicle field
Do not Have a Grid Reference - entities without a valid grid reference (calls, depots, orders etc.)
Have Carriage Paid flag set on – calls with this field set
Pass through the Filters - calls which meet the filter parameters set or NOT for those failing

Wildcard fields may be used to match data consisting of any combination of letters, numbers, or # , ? , and ^ symbols. A ? will match any character in an entity field including blank spaces. A # will match any number, and a ^ will match letters only. Blank spaces where used also provide valid criteria. In this way any combination may be used to match a range of idents. AY?????? - would match any ident starting AY such as AY12, AY1,or AYXCRT. BSE#????? - would match only idents starting BSE with a number in the next field (that is BSE23 and not BSEA). WAS^ - would match only idents with WAS followed by a letter (not WAS1 etc.)

Ownership

In any cases where the Calls or Orders are transferred, it is necessary to input the old owner ident as well as the new owner ident. For calls this would be a depot. Wildcards may be used.
The ident of the new owner is always required for any transfer. A destination point for the transfer action must be specified. You will not be allowed to continue before a valid identifiers are input. This ident may correspond to a call or depot.

Explicit Flag

The EXPLICIT allocation of a call to any depot either through the field on an individual call record or by the explicit question in the transfer menu will cause that call to remain unchanged by any Warefrom run to re-allocate calls (unless over-riden). In effect the call will always be served from the indicated depot irrespective of any future changes to the depot structure. For example a call in Birmingham explicitly allocated to a Northampton depot will always be served from Northampton, even if a new depot in Birmingham were added to the scenario. To explicitly allocate a call in this way, tick the box.

Dates

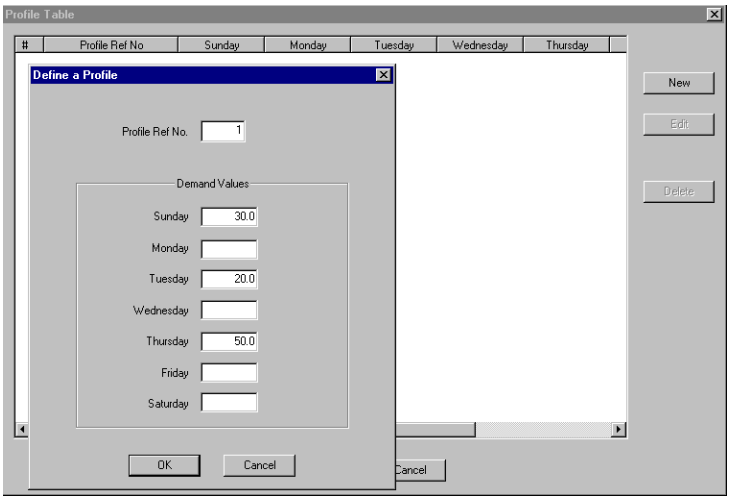
Dates are required for the transfer of Routes and Shipments.

For shipments “dummy” movements can be added to the database, and converted into actual movements using the transfer option. Both Dummy’s Day of Week and a date must be input. The fixed route facility in Daily Scheduling can use 'skeleton routes' as a basis for scheduling Routes can be set up with specific calls, vehicles, length in days, and so forth, and transferred from Fixed to Working using the menu option. Both Dummy’s Day of Week and a date must be input. Conversely current working routes can be used to create new Fixed Routes on any day using the Working to Fixed transfer. A valid date field must be set for this. For more information see the section on Working with Fixed Routes.

Profiles Tables

DiPS Profiling data facility may be used in circumstances whereby each particular call has a product delivery profile over 1 week that dictates that a given proportion of the total be delivered on a each visit. The model incorporates the usual logic in setting up data (depots, vehicles, restrictions and so forth) but differs from mainstream strategic studies in terms of routing the products at each call; the main difference being that each product is dealt with by the routing modules as if it were a call in its own right. PRODUCTS are specified as with normal studies.

To establish delivery profiles it is necessary to provide modified call screens and an additional dialog screen to specify delivery profiles. This is done by setting the profiled demand parameter when creating a new study or using a profiled template. A profile reference is used to specify the percentage of product delivered or collected on each day of the week, with a weekly demand figure for each product given on the appropriate call screen. It is important to remember that the Data Collection Period for such studies should always equal 7 days.



Additionally the Split CALL into 1 copy for each Product field on Products dialog may be set ON to deal with each product individually of required. When the route planning program is run each product is dealt with separately and routed accordingly. The relevant product code will appear on each output report so that it may be clear which product the call is referring to. In manual route amendment, the product may be added, moved or deleted as required.

To create a new Profile table click on the New button a fill in the percentage figures for each day, followed by OK. To modify or delete a table, click on the appropriate number next to the profiled ref no. and click edit or Delete

Profile Reference Number

The Profile Definition Reference is a unique number used to establish separate delivery profiles for the Profile Model. This number is used on the call screen as a cross-reference to govern how the weekly product demand is split for delivery throughout the week.

Profile Daily Percentage

The Profile Daily Percentage figure is employed to split the CALL week's demand of any product. Up to 1 decimal place may be specified. Leave blank spaces for particular days if product is not required on that day. The total percentage figures used for any one Profile Reference need not add up to 100 as the system will proportion each delivery according to the total. As an example values of 80% in Wednesday, and 20% in Saturday, for a total of 10 pallets would lead to 8 delivered on Wednesday and 2 on Saturday. Using **negative** Profile Daily Percentages will enable a choice of day for any equal percentage value defined for a Profile Definition Number. Positive and negative numbers may be mixed to allow for full flexibility in fixing some days and not others. Values of –30% in Monday and Thursday fields will lead to deliveries of 30% on either Monday **OR** Thursday. Such Profiled patterns may be mixed with normal positive percentage Profile Definition Numbers (as discussed previously) in any composition within a single study to account for any combination of delivery or collection requirements.

Call Week's Demand

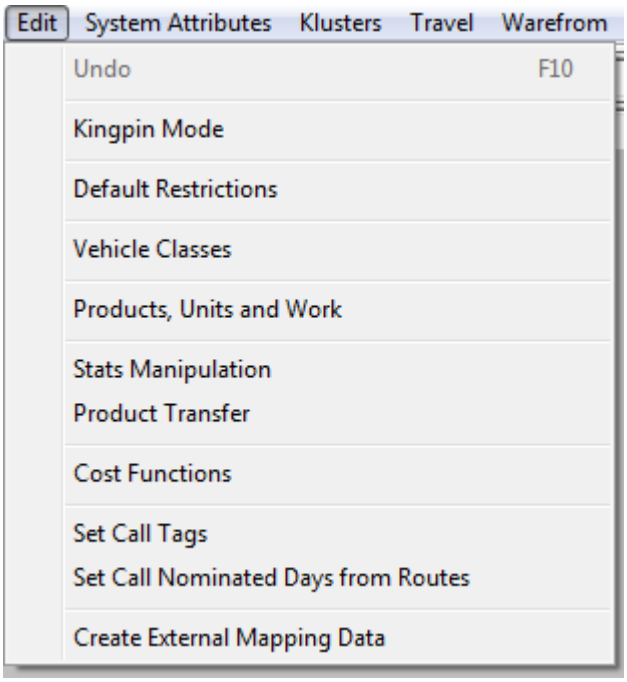
The week's demand is the total number of the appropriate product delivered in the 7 day Data Collection Period. Product demand is used by the planning programs in to calculate the amount to be delivered to that point. Positive values denote quantities to be delivered. Negative values represent collections. Deliveries and collections may be planned simultaneously by DiPS.

The Call Profile Number is used by the planning programs to calculate the quantities
to be planned on each visit. A total product demand of 20 units with a profile of 25%, 50%, and 25% will produce a total of 5 units to be delivered on the first visit, 10 on the second and 5 on the third. A maximum of 12 different product types can be used at any one time, but it is advisable to keep the study as simple as possible and use a single product where practical.

The quantity of each product determines the Vehicle Units to be delivered at each visit. Using the Product to Vehicle Unit conversion factors set on the Unit Data screen, the totals are calculated for each product with a valid (non-zero) factor.

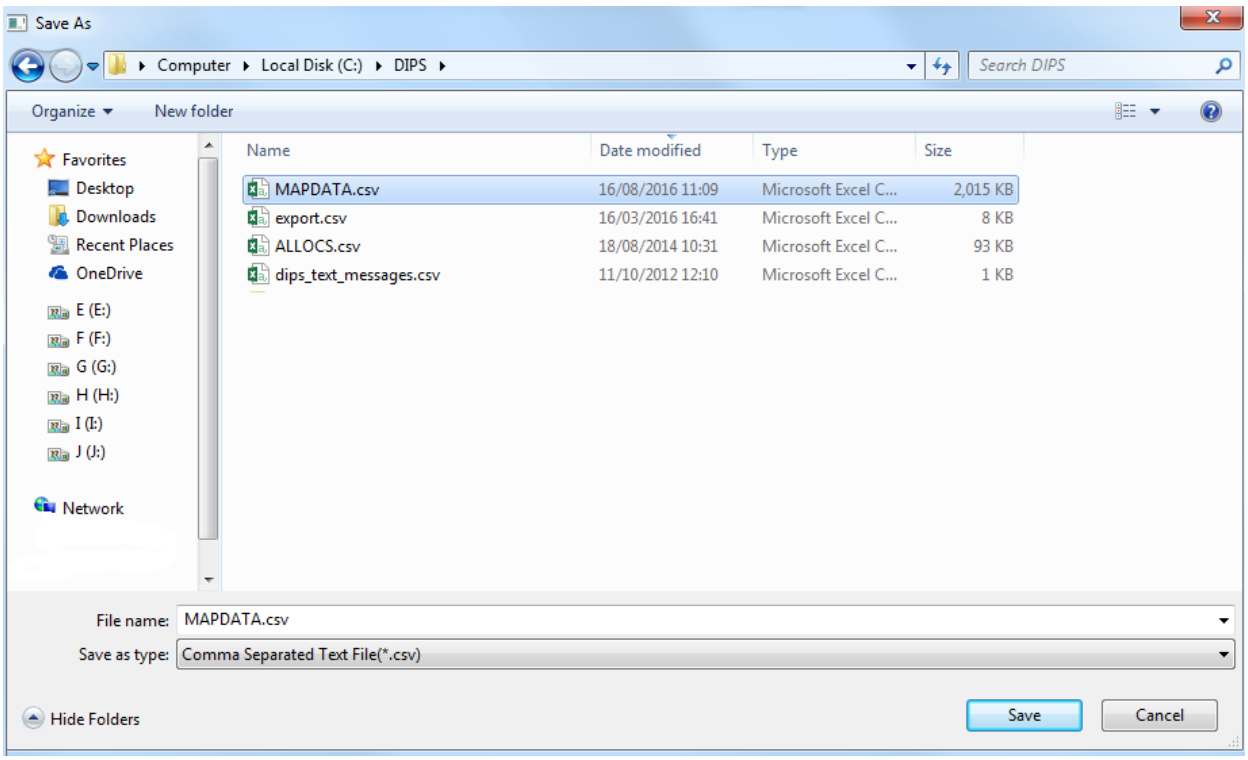
Create External Mapping Data

A menu item has been added under Edit to enable Call data to be exported in the same fixed format each time that can then be re-used easily with tools such as Google docs or Microsoft Excel 3D Maps to share study results or analysis more readily.



Running the Edit, Create External Mapping Data option displays a dialog for the data to be saved.

A comma separated data file (.CSV) is created and updated each time with all the required Call data such as address, postcodes, restrictions and products to allow HeatMaps and such like to be produced.

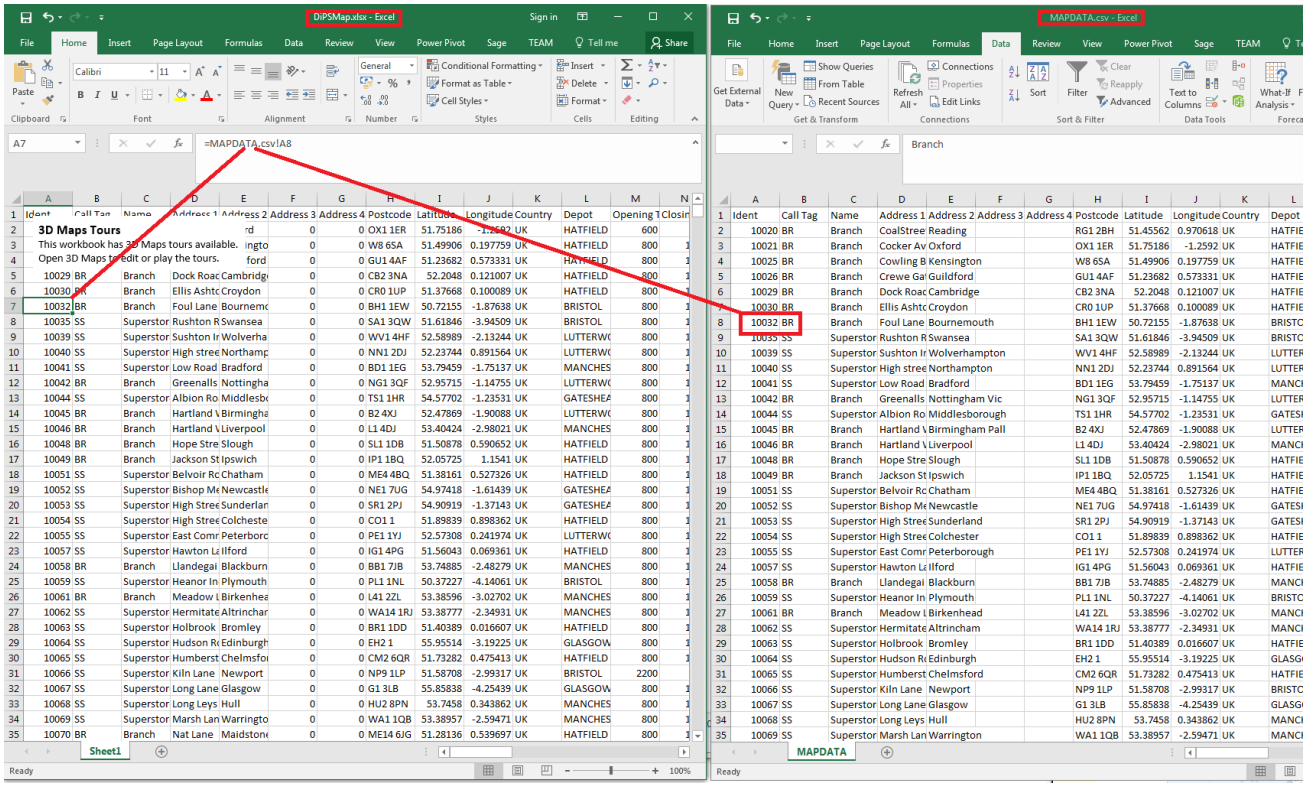


Using Data with Excel 2016 3D Maps

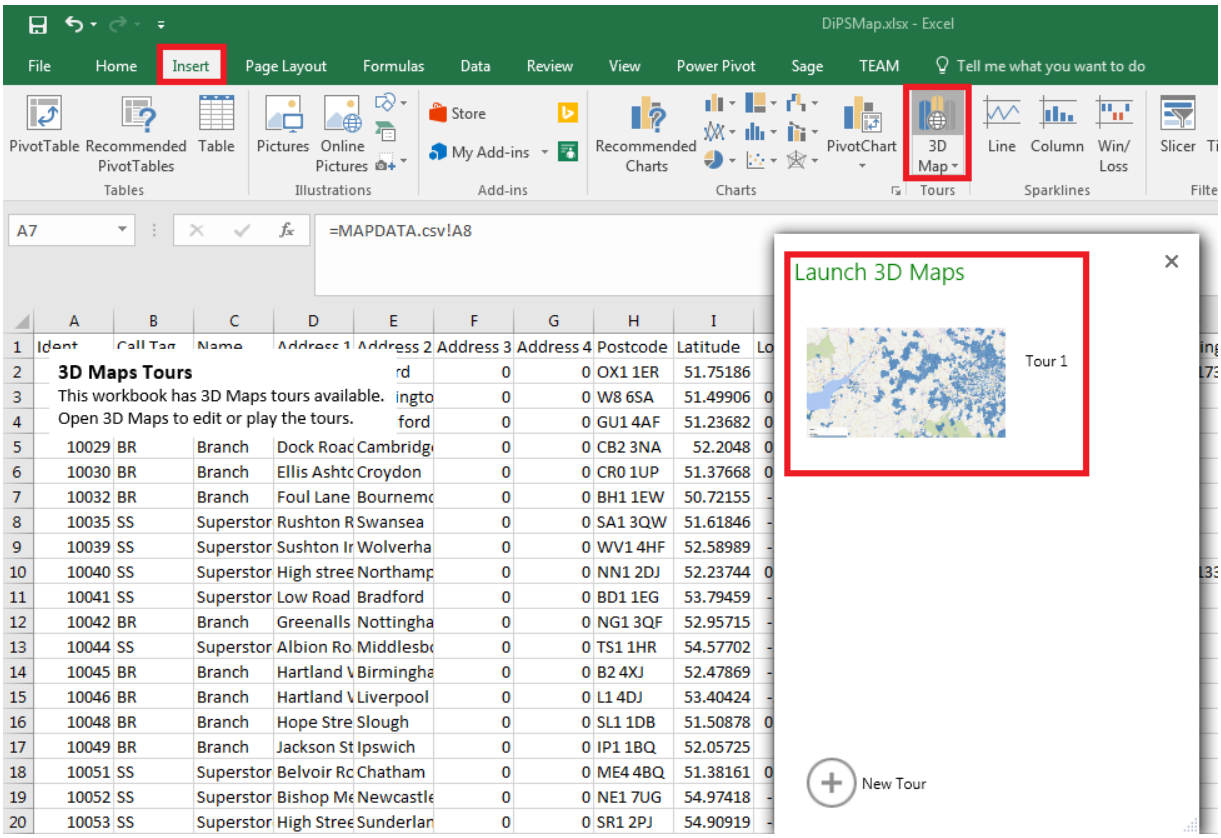
A sample spreadsheet is available (either as a download from the DiPS web-site or to be found in the normal DiPS folder after a new DiPS System Installation is completed on version dated Oct 2016 and after).

The spreadsheet is called DIPSMap.xlsx and is configured to use data exported and saved in the MAPDATA.CSV in the DiPS folder following the steps above.

To update the links, open the MapData.CSV file in Excel first and then use the Data, Text to Columns option to Convert the Text to Columns using Comma as the Delimiter. The sheet should then look similar to the image below right.

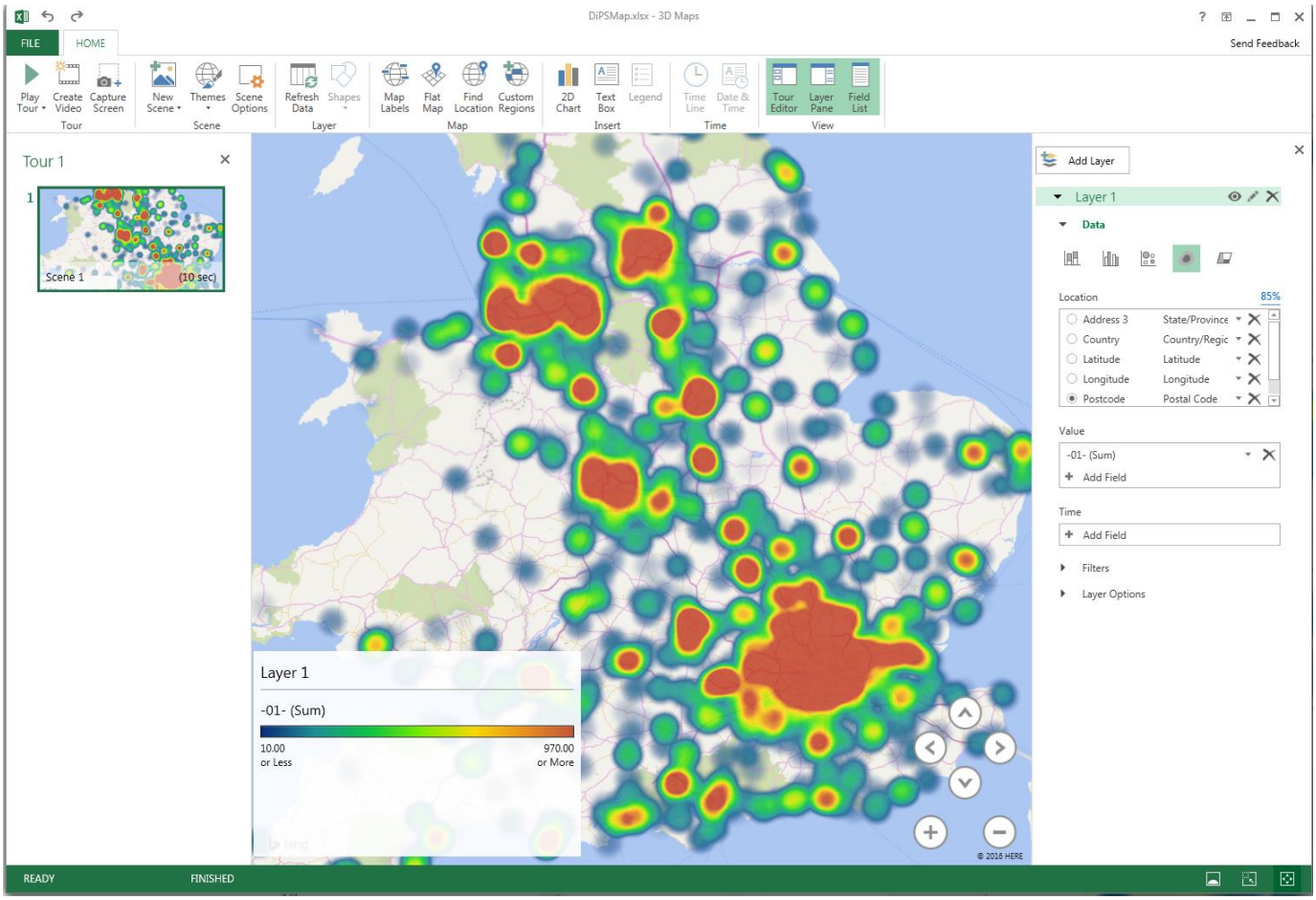


This spreadsheet already has a 3D Map set up so all that's necessary is to click the Insert , 3D Map option to display Tour 1.



	A	B	C	D	E	F	G	H	I
1	Ident	Call Tag	Name	Address 1	Address 2	Address 3	Address 4	Postcode	Latitude
2					rd	0	0	OX1 1ER	51.75186
3					ingto	0	0	W8 6SA	51.49906
4					ford	0	0	GU1 4AF	51.23682
5	10029	BR	Branch	Dock Roac	Cambridg	0	0	CB2 3NA	52.2048
6	10030	BR	Branch	Ellis Ashtc	Croydon	0	0	CR0 1UP	51.37668
7	10032	BR	Branch	Foul Lane	Bournemc	0	0	BH1 1EW	50.72155
8	10035	SS	Superstor	Rushton R	Swansea	0	0	SA1 3QW	51.61846
9	10039	SS	Superstor	Sushton Ir	Wolverha	0	0	WV1 4HF	52.58989
10	10040	SS	Superstor	High stree	Northamp	0	0	NN1 2DJ	52.23744
11	10041	SS	Superstor	Low Road	Bradford	0	0	BD1 1EG	53.79459
12	10042	BR	Branch	Greenalls	Nottingha	0	0	NG1 3QF	52.95715
13	10044	SS	Superstor	Albion Ro	Middlesbc	0	0	TS1 1HR	54.57702
14	10045	BR	Branch	Hartland V	Birmingha	0	0	B2 4XJ	52.47869
15	10046	BR	Branch	Hartland V	Liverpool	0	0	L1 4DJ	53.40424
16	10048	BR	Branch	Hope Stre	Slough	0	0	SL1 1DB	51.50878
17	10049	BR	Branch	Jackson St	Ipswich	0	0	IP1 1BQ	52.05725
18	10051	SS	Superstor	Belvoir Rc	Chatham	0	0	ME4 4BQ	51.38161
19	10052	SS	Superstor	Bishop Me	Newcastle	0	0	NE1 7UG	54.97418
20	10053	SS	Superstor	High Stree	Sunderlan	0	0	SR1 2PJ	54.90919

Use the **Refersh Data** button to update the information and then modify the Map view as required.
Location is done by Latitude & Longitude fields as can be seen in the right hand panel
The initial default view shows a Heat Map of Product -01- for the calls.



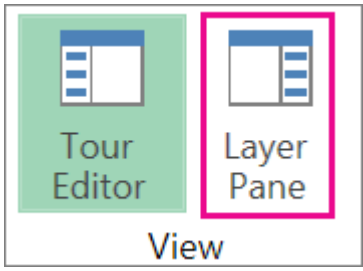
More information on using Excel with Maps can be found at the web address below :-
https://support.office.com/en-GB/article/Get-started-with-3D-Maps-6b56a50d-3c3e-4a9e-a527-eea62a387030

To create your own new Excel sheet follow the basic steps below to create a new map from scratch :-

In Excel, open a workbook that has the table or Data Model data you want to explore in 3D Maps.
Use the Copy & Paste function to get the information from MapData.CSV file if required.

Click any cell in the table. Click Insert > 3D Map.
(Clicking 3D Map for the first time automatically enables 3D Maps.)

To plot your data, pick the columns that make up your geography from the Location Add Field list, and specify the geographic level they represent. 3D Maps takes it from there and plots your data.
You can use Latitude/Longitude from the MapData.CSV fields.
When 3D Maps plots the data, dots appear on the globe.



To change the way your data is visualized:

1. If you don't see the Layer Pane, click Home > Layer Pane.

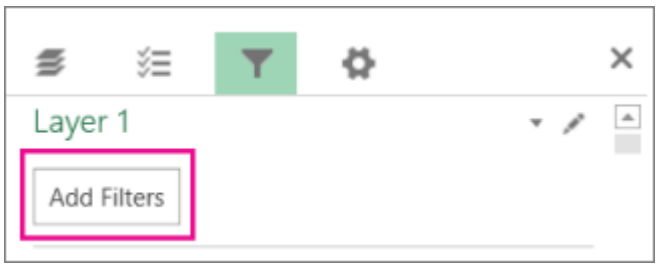
2. For the layer where you want to show additional data, in the Add Field drop-down list under Location, click the type of data that you want to show. (You can add more than one type of data.)

The fields that appear in this list will vary depending on the data that is available.

3. To change the type of chart that is displayed, click any of the available types: Stacked Column, Clustered Column, Bubble, Heat Map, or Region.

- When you apply a heat map, the Height or Size box changes to a Value box. You can change the way value fields are aggregated, by clicking the arrow in the Value box and picking the function that you want. Typically, Sum is applied by default, but you can pick Average, Count, Max, Min, or None. You can also remove a value field from the Value box.
- If you drag a field to the Category box and leave the Height box blank, 3D Maps automatically adds that field to the Height box and draws a visual that represents the count of each category.
- Instead of dragging fields into the Height and Category boxes, you can just check the field boxes. 3D Maps puts those fields in the appropriate box.

To filter data in the tour, you can add and change filters in the Tour Editor pane.
In the Tour Editor pane, click the Filter button .
Click Add Filters.

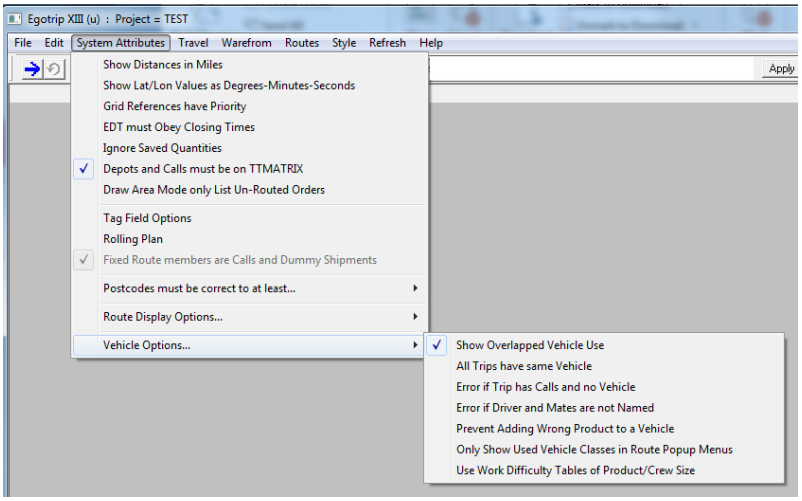


Choose the fields you want to filter, then click Add.

System Attributes and Parameters

System-Attribute Values

The System-Attributes menu can be used to change DiPS system parameters and currently offers the following commands:
As the number of menu options has grown over the years, to make the System Attributes menu easier to navigate, the menu items relating to Vehicles have been moved into a sub menu called **Vehicle Options**.



Show Distance in Kilometers (Miles)
By default when a new study is established speed and distance information will appear in miles (field is not set). By checking the tick-box provided, the system will modify all parameters and output values to appear in kilometers.

Show Lat/Lon Values as Degrees-Minutes-Seconds or Decimal Numbers
This option will toggle the display and entry of Latitude and Longitude values in the system between decimal and traditional formats.

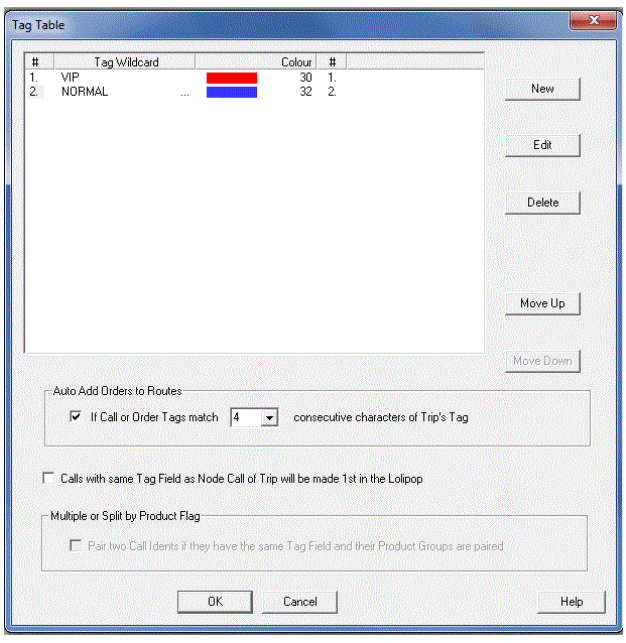
Grid References have Priority
By default when postcode information is input into an address field it will automatically update the grid reference fields, which DiPS uses to locate the call or depot. This is the case when the option is not selected, that is marked with a tick. By clicking on the option the LHB and setting the value, the system will no longer assumes that the postcode is more accurate, and the reference will not be changed unless it is first deleted. In this way any amendments to the address postcode field will not have an adverse affect on detailed OS grid data where it has been collected.

EDT must obey Closing Times
Setting this parameter will ensure that the vehicle must depart the Call before the Closing Time indicated, having completed all required work. By default vehicles are only required to arrive within the time window

Ignore saved Quantities
By default when a study is loaded existing call quantities are stored and applied to any routes. By checking the tick-box provided, the system will ignore previous values and re-calculate all call quantities again from scratch. This is useful if new data is to be applied to existing route patterns.

Depots & Calls must be on TTMatrix.
If set this parameter will ensure that all calls are on a proper valid Matrix before they can be added to a route or called over. This does not affect the ability to place these call on a Carrier List or Customer Collect List. To avoid this error, ensure that all calls have valid grid reference and click the Travel, Run Matrix option.

Draw Area Mode only List Un-routed Orders is available which can be toggled ON/OFF depending individual requirements. If ticked using Draw Area Mode or Click Call Mode when routing with Orders will only put the un-routed Orders into the blue box. When initially running the program it is always set OFF so you see all the Orders – routed or not.



Tag Field Options
In the Style, Graphics Options dialog there is Symbol set parameter (Freq+Tag+OT) that will allow calls to be displayed by a colour attributed to a call tag field. The size of the symbol is defined by the Frequency per week, the shape by the Opening Time, and the colour by the Tag Field table. This table is found in the System Attribute menu and may be modified using New, Edit and Delete buttons to display a simple dialog enabling the 40 character field to be input and a colour chosen. The table can also be re-sequenced using Move Up and Move Down options. The sequence of tags has no effect on the graphics display.

Orders may now be added to routes automatically if either the Call Tag Field or the Order Tag field matches a defined number of characters within the Trip Tag of a route. To activate this functionality use the System Attributes Tag Field option and tick the parameter on the dialog – set the number of consecutive characters that you wish to match as required. Then as required, simply click the Routes menu option – Auto Add Orders to Routes to move any un-routed drops in the Deferred List into the trip that matches. The logic involved will look for the set number of characters from the call tag within the text in route tag field, i.e. the Call or Order Tag may just be part of the trip tag. Orders will be added onto the end of any existing drops currently on the trip. Different trip tag text may be used for each trip of a route

to enable orders to be added to a first or second trip for example.

Calls with same Tag Field as a Node Call of Trip will be made 1st in lollipop.
As the first or "node" call is placed on a trip any call with a non-blank tag field that matches the node call's will be made top priority in the lollipop and considered first when calls are added to the trip.

Pair two Call Idents if they have the same Tag Field and their Product Groups are paired.
This parameter only works with multiple format studies or strategic studies where the split by product flag has been set on the Product Units and Work properties dialog. If the Product Groups are also set to be paired on the Product Units and Work properties dialog, two calls with a non-blank tag field will both be routed together on the same trip or neither will be added.

Rolling Plan
The Rolling Plan logic allows Orders to be input for a range of dates (up to 7days) and scheduled in one run; or existing routes added to on an on-going basis to provide a solution for a business where the workload cannot be split into individual days and vehicles operate continually. Set this parameter on to allow routing over a series of days.

Set Fixed Route Members to…
The type of data for fixed routes is set using the System Attributes menu option Set Fixed Route Members to… and selecting either Calls, Postcode Areas or Dummy Shipments. The routes set-up function is accessible from the Routes Menu option an must use either postcodes, calls or dummy shipments: it is not permissible to mix types.

Postcodes must be correct to at least…. Area Level, Sector Level or Walk Level
This parameter will set the appropriate level of accuracy for postcodes used within DiPS. Any postcodes used must be accurate to at least the level chosen or they will not be used to locate the call/order/depot. Area level is the lowest available (checking DY12 is valid). Sector Level (checks DY12 1 is valid) and Walk Level (only allows postcodes if DY12 1A is valid) may also be used to only allow more accurate data entry.

Route Display Options

Using the Called Over options, it is possible to hide routes that have already being called over (and finished for the day perhaps) by setting **Don't Show Called Over Routes**. Hence in the example below, route1 Oxford/ Birmingham/ Wolverhampton) is hidden as it has previously been called over (see CO Status = PCO or CO). Alternatively it may also be set using the Route Summary menu option – To be Called Over.
Ticking **Only Show Called Over Routes** will reverse the logic enabling users to display only routes that have been set or finished for example. Only route 1 would be displayed in that instance.
Negative routes such as Carrier Routes, Customer Collections or the Post List can be shown in isolation or excluded from the map display using **Don't Show / Only Show Carrier Routes**. The normal squares showing for such routes are then hidden or displayed without routes so it's possible to see the areas covered.
To avoid confusion between sessions, this parameter setting is only valid for the current session of the program and will need to be re-set every time the program is re-run.

Vehicle Options

Show Overlapped Vehicle Use
This parameter can be changed to disable the warning messages regarding overlapping vehicles within the plan that appear whenever manipulation of a route causes the same vehicle to be in use by two different routes at the same point in time. By default it is set to allow messages to be displayed. Once changed it remains in force until disabled or the program is closed.

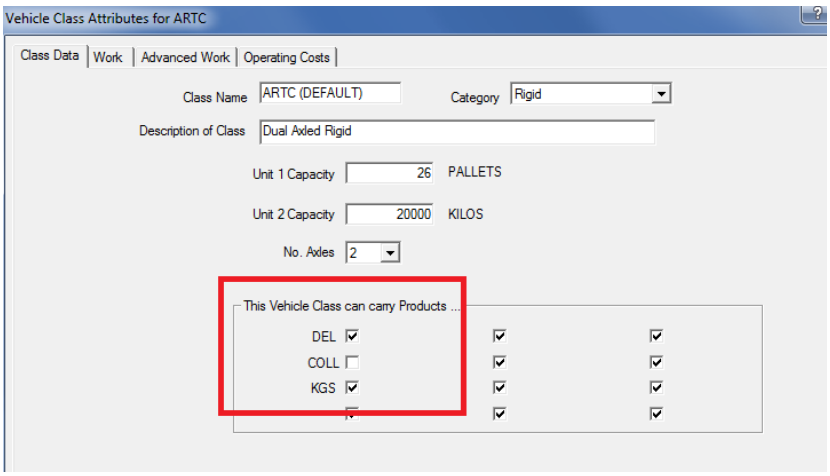
All Trips of a Route have same Vehicle
Within the planning process two distinct methods of vehicle allocation can be employed -
1) Drivers may use any vehicle ident on any trip of a route constructed.
2) Multiple trips of the same route and driver must use the same vehicle.
This facility is controlled by the Same Vehicle parameter, which by default is set to NO, thus allowing any combination of vehicles on the same route. To restrict the route to the same vehicle on ALL trips, click on the option the LHB, setting the value so that is marked with a tick. In either case any trailer may still be used by a vehicle.

Error if Trip has Calls & No Vehicle
This parameter if set will show a "Veh" error on the first depot line of any trip that has calls on it but has no vehicle assigned. The Callover of Routes will also be prevented if applicable.

Error if Driver & mates are Not Named
This parameter if set will show an error on the first depot line of any trip that has calls on it but has no driver assigned or mate assigned if the vehicle crew size requires it. The Callover of Routes may also be prevented if applicable.

Prevent Adding Wrong Product to a Vehicle
An item can be set to stop drops with certain products being added onto a route where the vehicle class has previously been set to prevent such products being carried. On the Edit, Vehicle Classes menu, select the required Vehicle Class and then using the "This Vehicle can carry Products" section un-tick the relevant products to prevent them being added.

In the example below, the ARTC class is stopped from having any COLL product on board at any time.



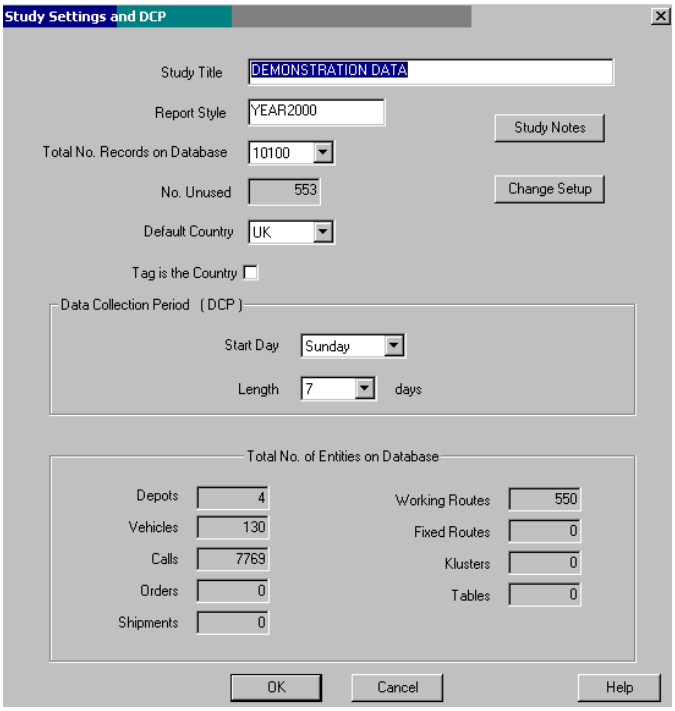
If the parameter is then set, users will be prevented from dragging calls or orders onto any routes with the appropriate vehicle class. Whilst dragging the mouse cursor will change to **PonV Ban** to show that the order contains banned products.

Only Show Used Vehicle Classes in Popup Menu
If set, this parameter will suppress the display of any unused vehicle class in the pop menu whilst modifying routes. Only those classes that have existing vehicles assigned to that depot will be shown. To add vehicles for another class use the depot properties dialog

Use Work Difficulty Tables of Product/Crew Size
Tick the “Use Work Difficulty Tables” on the System Attributes menu and confirm when applicable. Work tables will then be created for any Work Classes that currently exist on the file using the same values for all entries. Up to 999 tables may be established using values to 3 decimal places for each of the 12 products and the three different crew sizes. Click New to create an extra entry or Edit to modify existing values. As an example of the new feature, for “1 Man” if the value of 3.000 is entered for all products but an individual factor of 5.000 has been set for product 2, the work time for orders at this call are calculated at 5x the rate for product 2 plus 3x the rate for all other products if the vehicle allocated to the route for that call has a Crew Size = 1. These calculations are done for both for rates set on the Products, Units & Work dialog and on individual vehicle types.

Study Settings

The Study Settings dialog will display information regarding the study, including numbers of each type of entity and the Total No. of records available and unused on the database



Study Title or Project Id

The Study Title or Project Id dialog box will appear initially in order to set a name to identify the backup files created. Up to 40 characters may be used for a study title. The title will appear at the start of any output produced by the planning programs.

Report Style

Initially on creating a new study the date will be recorded in this field. However certain key words can be used to control the style of output produced by DiPS programs. This effect is used almost exclusively by the DAILY ROUTE PLANNING sites.

Total No of Records on database

To reduce the size of a MASS file, from the File, Study, Settings dialog select the Total No of Records drop-down selection box. All the available sizes are displayed. Simply click on the appropriate value to reduce the records. This can prove useful in archiving files as it can greatly reduce the disk space required

Default Country and Tag

Initially on creating a new study the letters UK will appear in this field to signify that United Kingdom databases are to be used for the study and the Tag=Country field will be not be set.
Where available European countries may be used by introducing their own specific keywords from the drop down box and setting the Tag=Country field. Once the Tag=Country field has been changed it **cannot** be reversed for that study.

Start Day

A day of the week must be named as the first day of the Data Collection Period (DCP). The default day is Sunday, which is normally used as all day restriction information is presented in the form of data from Sun - Sat. To change the default day use the drop-down box. It is not necessary to change the Start Day if depots and call points are closed on a Sunday. All programs will account for this using normal day restriction criteria. The Start day will also appear as the default day for specifying runs in planning modules. If single day analysis is to be used to save time in changing the day each run, simply change it once initially.

Length of DCP

The Data Collection Period or DCP is the study length for which information has been recorded. It will represent actual calendar days and not operating days (for example a normal week would be 7 days and not 5). The DCP can be any value from a minimum of 7 days to a maximum of 366. Beware of possible rounding errors and data calculation and printing problems if using large volumes of data. It is usual for the value to be expressed in multiples of 7 days (or 1 week) so that calculations of average delivery volumes in multi-week studies are not distorted. A 13-week period for example would correspond to 91 days. Most problems are avoided if a single 7 day period is used for analysis, so if data can be obtained for a representative week it would be ideal.

Project Notes

The project notes section can be used to add text comments regarding the study for future reference.

Change Setup

The Change Setup option controls basic setup features of DiPS including passwords etc. It will also appear when New Egotrip is run if there is no profile file found in the DiPS folder. The screen itself consists of the following options which are amended once the OK button is clicked.

Select which dongle to use	Printer Port (Blue Dongle)
Select the Drive that DiPS is installed on	current drive is displayed
Select the Drive that Ordnance Survey Data is installed on	current DiPS drive is displayed

(DiPS normally uses the same drive for OS Mapping files - this option will only need to be changed if these files are located on another drive. Contact DiPS for more advice if required)

Select the Printer Formatting required default is HP Laserjet 5 or 6

(DiPS normally uses Windows printer drivers meaning that this option will only need to be changed if advised by DiPS for using remote printing options). Choose from - HP Laserjet 5 or 6, HP LASERJET, GESTETNER (HP Emulation), HP Deskjet 800/1200/1600 series, LEXMARK 3000, EPSON FX or LX series, EPSON SQ series, EPSON LQ series, IBM 4029 Laser, CANON Laser, FUJITSU, MANNISMAN or a NEWBURY, CITOH 3500, IBM Proprinter XL, DATAPRODUCTS

Select Printer Port (only used for older programs – accept default or set a value as advised by DiPS)

Define a new Password displays any existing password or type in a new word using 2- 8 characters

Select the other required options using tick-boxes to activate.

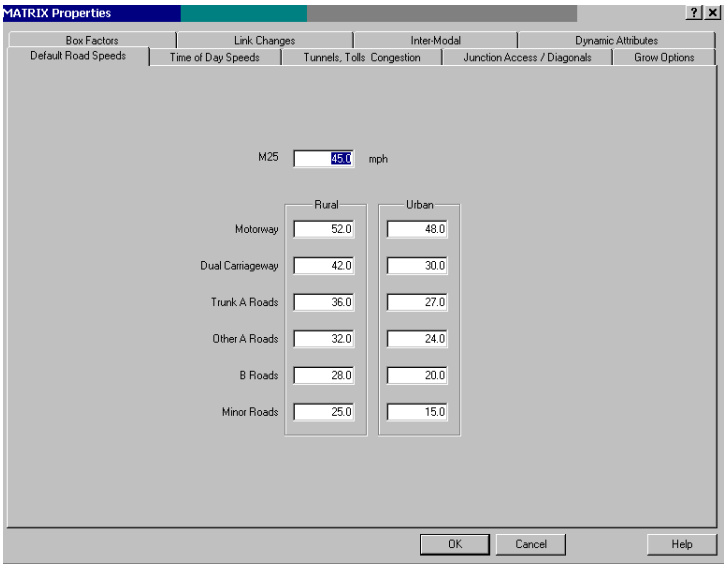
Collect Route / Orders Statistics
(The Save Statistics options are applicable only to daily scheduling sites that require operational data to be saved for later analysis and can be ignored for most users.)

Travel Menu – Setting Road Speeds and Calculating Times & Distances

Road Speeds and Travel Parameters

The Travel option is used to produce a TTMATRIX which may be envisaged as a table of times and distances between all the points in your study. All the DiPS planning programs which rely on this detailed information access the latest TTMATRIX and thus it must be completed before any planning runs are attempted. Road Speeds and other relevant values can be defined using the Travel , Parameters menu option which reveals the Matrix Properties notebook.

Default Road Speeds



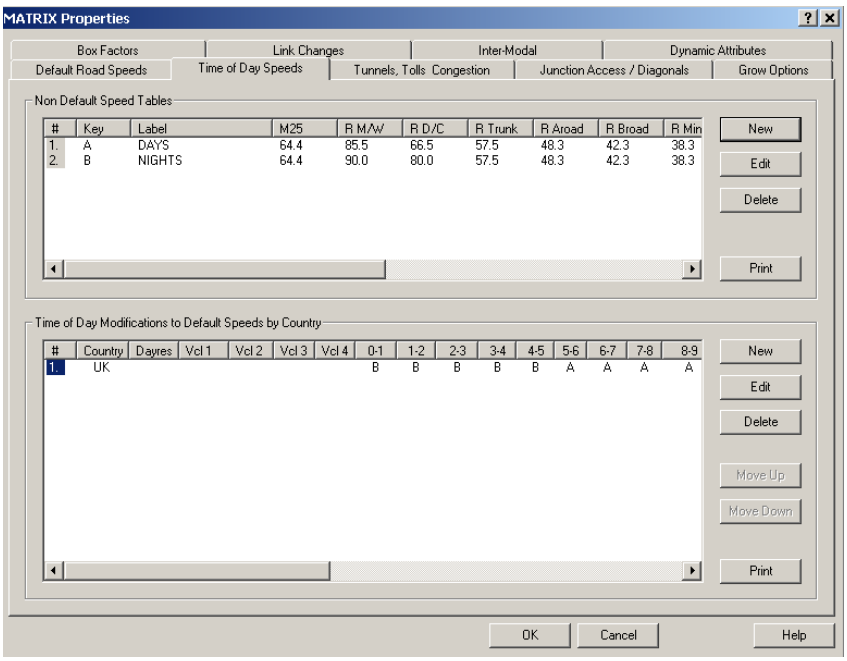
Road databases are stored in the roadfile, roadindx, and roadname files. For the UK these have a .UK file extension and contain information on over 25,000 junctions and 75,000 links (down to street names, pedestrian areas, and one-way systems for major urban areas). Each link has been allocated a class based upon its type and where it is. There are two main classes of rural or urban depending upon the location of the link, but these may be additionally factored by use of Speed Reduction Factors for specific cases such as congested urban areas. The average road speed for each category of road may be separately defined by the user. Any class of road or section of road may be excluded by setting its speed to zero. The Default settings have been developed over a number of years of operational experience and have shown to produce industry acceptable typical average speeds for HGVs. However speeds may have to be modified for study data such as night running or the use of smaller vehicles; and wherever companies have their own agreed speed matrices.

To enable full flexibility each class outlined below may be altered accordingly :-

M25 and M6 Toll- speed classes for all links of the M25 motorway and M6 Toll Motorway (all links are rural)
Other Motorways - all motorway links apart from M25 (rural and urban)
Dual Carriageways - all road links of more than 3 carriageways (whether or not a central reservation is in place) for rural or urban areas
Trunk Roads - all Government designated main trunk A roads (rural or urban)
Other A Roads - all other "A" class roads (rural or urban)
B Roads - all roads with a "B" classification (rural or urban)
Minor Roads - these have been included where they constitute an important part of the localised road network; for example in remote rural areas or in urban areas (if they form an important access or recognised through route)

The default road speeds are used to define a standard set of speeds that apply to all vehicle classes and at all times of the day or week.

Time of Day Speeds

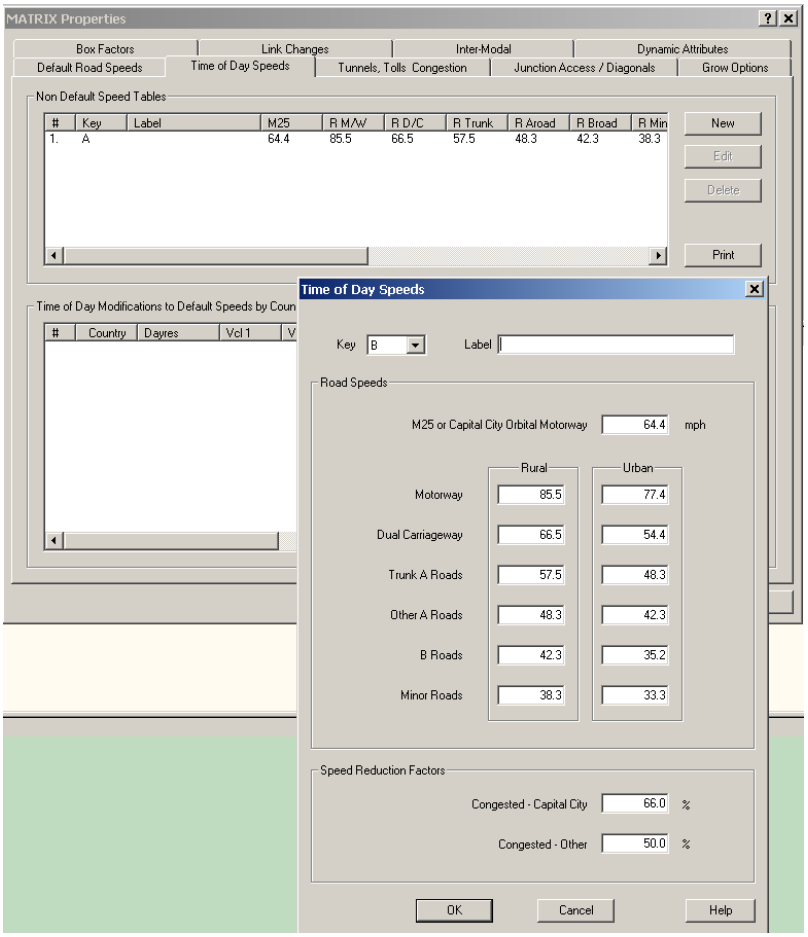


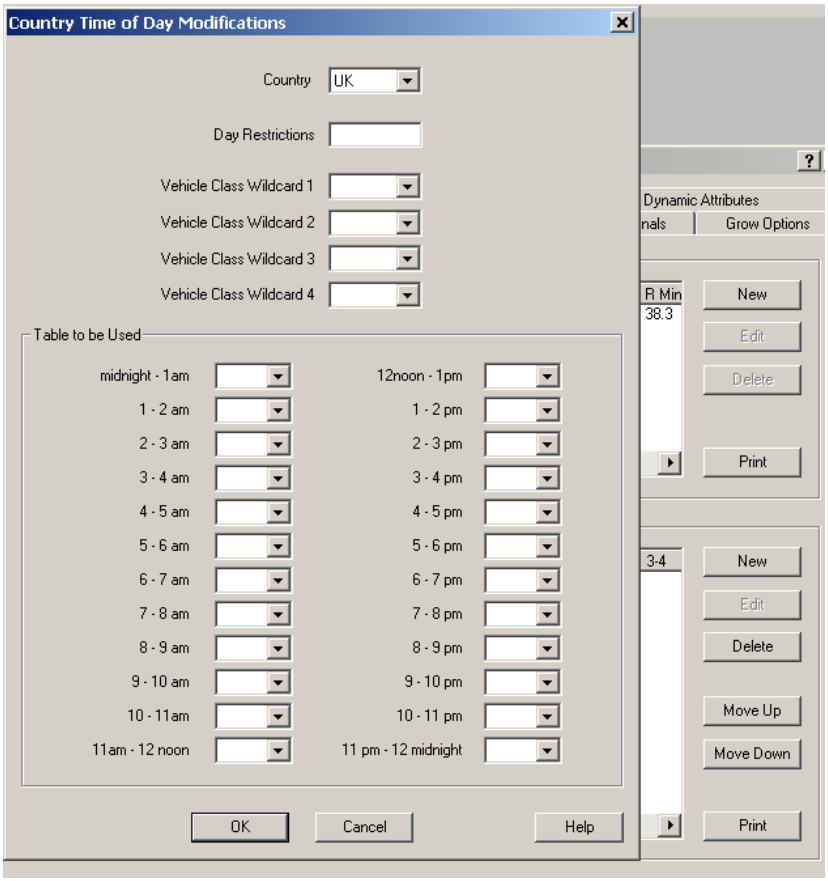
The Time of Day Road Speeds option may be use to further refine road speeds to apply different criteria by time of day, day of week , country and vehicle class.

These parameters can then reflect rush hours, night running, or small non-HGV vehicle types for example. Non Default Speed tables can be set and then applied to days, vehicles and hours of the day.

Non Default Speed Tables

To define Non Default Speed tables, click on the New button to display the input screen for a link, type the appropriate values into the fields provided and then click on the OK button. A key value (A-Z) is used to apply the speeds to the Modification Tables and a description can also be entered for the Table (eg Rush Hour, Small Vans). Values may be entered for standard speeds and Congestion factors. Certain links on the road database were nominated as either congested, mountainous or narrow as the database was being established or updated. It is possible using the percentages available to factor any type of link (A road, B road or minor road etc) that has a defined attribute of this sort. The values actually reduce the speeds by the indicated amount and NOT to that level. As an example on an urban B road (normal defined speed = 18mph) going into Uk capital city - Central London (speed reduction factor of 66%), the actual factored speed along the link would be reduced to 6 mph. To clear an existing table click on the relevant # no. and click on Delete. To change an existing table select it by clicking on the required No. in # column and modify the values before clicking on the OK button.





Modification Tables

To define Modification tables, click on the New button to display the input screen for a link, type the appropriate values into the fields provided and then click on the OK button. Set the required country fro the list available. A blank Day Restrictions field would indicate that the table applies all week, with a seven digit number representing Sun-Sat employed to stop it being used on certain days. Use 3 to disable the table on a day (eg 3000003 would mean that the table applies Mon-Fri only). In the case of vehicles if the table applies to all vehicle leave the fields blank. To restrict use to certain vehicle types, use the list box to add any class previously set up using the Vehicle Class option. The Explicit Vehicle Class Wildcard field represents a method of ensuring a set of particular vehicle classes **only** are used. The ?? wildcards can be used to include a variety of vehicle types – as an example Vehicle Wildcard = ??TN would include vehicle classes of 11TN , 17TN or 21TN.

A key value (A-Z) is then used to apply the speeds set for that table to the each hour of the day as necessary. To employ default speeds simply leave the field blank.

To clear an existing table click on the relevant # no. and click on Delete. To change an existing table select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To re-sequence a table in the list, simply select it and then click on the Move Up or Move Down button.

Using the Speed Tables in DiPS

The Speed and Modification Tables are employed automatically wherever necessary within the DiPS system to match the criteria set. In terms of priority of use, the first matching Modification Table in the list is applied; that is should a particular vehicle class (eg 17TN) be entered into a number of different modification tables, the speeds employed will be the first that match the necessary day and time. Hence the priority of use may be influenced by sequencing the tables using the Move Up or Move Down buttons.

To display the speed tables used for a route, use the Style Heading = Matrix on Style, Route Headings or see the Itinary output.

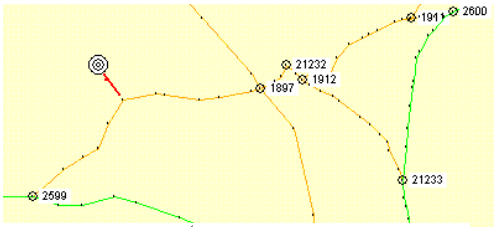
Tunnels, Tolls, Congestion

The road database of the UK is stored in the roadfile.uk, roadindx.uk, and roadname.uk files and contains information on over 25,000 junctions and 70,000 links (down to street names, pedestrian areas, and one-way systems for major urban areas). Each link has been allocated a class based upon its type; the basis of which is covered by the Road Speeds parameters. However for special cases, classes such as ferries, tunnels and toll roads have been established. To control use of these links use the speeds parameters. Values may be input for the following types :- Motorway Tunnels, Other Tunnels (Toll and Free), Ferries - UK only, Toll Roads - UK only, Projected Motorways and Roads (for all major road construction currently set in the road network) and Roads Liable to Close in Winter (for European road databases only where roads are liable to be shut in winter months due to adverse weather conditions). Most values are set at blank or zero by default and are therefore not applied. To use any of these classes in travel calculations, simply input the required speed.

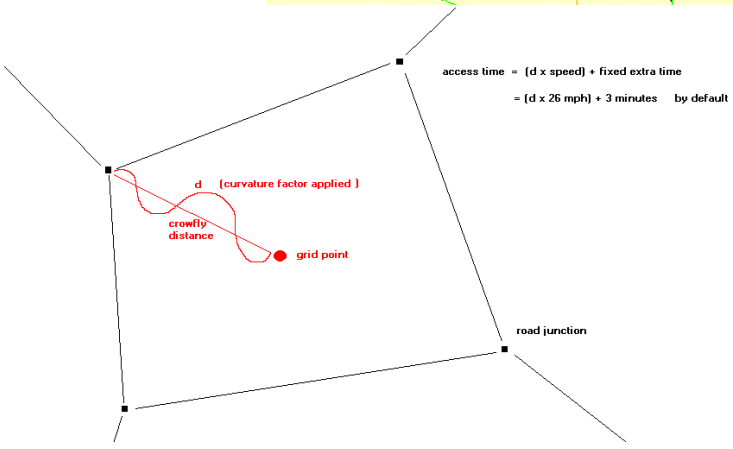
Certain links on the road database were nominated as either congested, mountainous or narrow as the database was being established or updated. It is possible using the percentages available to factor any type of link (A road, B road or minor road etc) that has a defined attribute of this sort. The values actually reduce the speeds by the indicated amount and NOT to that level. As an example on an urban B road (normal defined speed = 18mph) going into Central London (speed reduction factor of 66%), the actual factored speed along the link would be reduced to 6 mph. The default settings have been developed over a number of years of operational experience and have shown to produce industry acceptable typical average speeds for HGVs in congested areas.

Junction Access / Diagonals

The Grid Reference Sensitivity value in the Junction Access / Diagonals section of Travel parameters is used to reduce the accuracy of time and distance calculations between calls that are close together. Set at the default value of 1 metre, all calls with separate grid references will have a time and distance between them stored on the TTMATRIX produced by the Run Matrix process. If however the value is set to one of the higher levels, the matrix calculation will assume that all calls within that square are essentially in the same place and therefore don't require a separate time and distance row to be stored. This saves both disk space and reduces the time taken to run the matrix process. The higher the value is, the more calls will be considered to be in the same place. This feature may prove helpful when large studies are being undertaken, where accuracy in the time/distance between calls is less important. The sensitivity will also apply in the process of adding Extra Time and Distance to Diagonals of the Matix, where calls have the same grid reference. Values for this function are set in this section also.



Junction Access parameter is used by the Window process as each unique grid reference is attached to between one and four road junctions or sub-junctions on the nearest road link (depending upon local geography). The object of the analysis is to provide all the data and work files required to calculate travel time and distances in the Matgen process. In order to access the nearest a crowfly calculation is done and calibrated using the following parameters :-



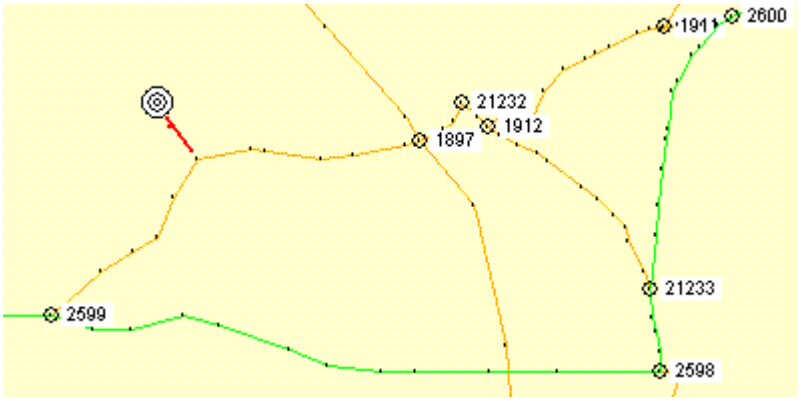
1. Curvature Factor - this is used as a multiplier on the straight line distance calculated using the Pythagorus Theorem from the grid point to the junction or sub-junction on the link. It is designed to add extra weighting to this distance as it is often found that the access is not a straight line and may involve the use of a number of small access roads.
2. Crowfly Speed - this average speed is used to calculate the travel time between the two points using the distance value from (1).
3. Fixed Extra Time - this value is added onto the junction access time (from (2)) of the grid point by MATRIX as it is calculating time between points or by the ITINARY program as it calculating journey times. This value can also compensate for the otherwise zero inter-drop travel time between point with the same grid reference; a factor which is also covered by use of the Extra Values to be Added to Diagonal Elements of the TTMATRIX parameter.

The default parameters have been arrived at with considerable experience and would not normally require alteration.

Maximum Acceptable Distance from a Junction - As part of the Window process of attaching all unique grid reference point to the nearest junctions, a list may be obtained of all call points more than a certain distance away from the nearest junction. This is a way of identifying data that may have been entered incorrectly into KINGPIN. By default the value is set to 2 miles (or kms if used) for all new studies. Increase or decrease the value accordingly if required. It is usual for the output list generated by the MATRIX program to appear in the file MATRIX.OUT. View or print this file to see the data.

The Extra Values to be Added to Diagonal Elements of the TTMATRIX parameters may be used in the MATRIX generation to add extra time and distance to locations with the same grid reference. This will prove useful if the basic data to be used is not as accurate as could be hoped. For example the data may give five drop points with the same basic address input with which to locate them of Birmingham and no postcode information, and the points may be scattered throughout the area. By adding extra time and distance between these drop points it becomes possible to make any route plans more realistic. These values will be added to any Junction Access time and distance calculated, and will appear on route output prints as normal inter-drop data. When using this facility values must be kept to reasonable levels to avoid problems that may occur in the routing process. If values are too high the algorithm will consider a detour to a neighbouring drop to be a better option than doing another on the same grid reference as the comparative detour time to the former is less.

Junction Access logic is used by the Matrix process as each unique grid reference attaches to between one and four road junctions (depending upon local geography). This logic has allows Calls to access the nearest sub-point on road links if appropriate, as well as junctions. This should make time and distance calculations more accurate especially when considering high density delivery areas as it provides a near ten-fold increase in the number of access points.

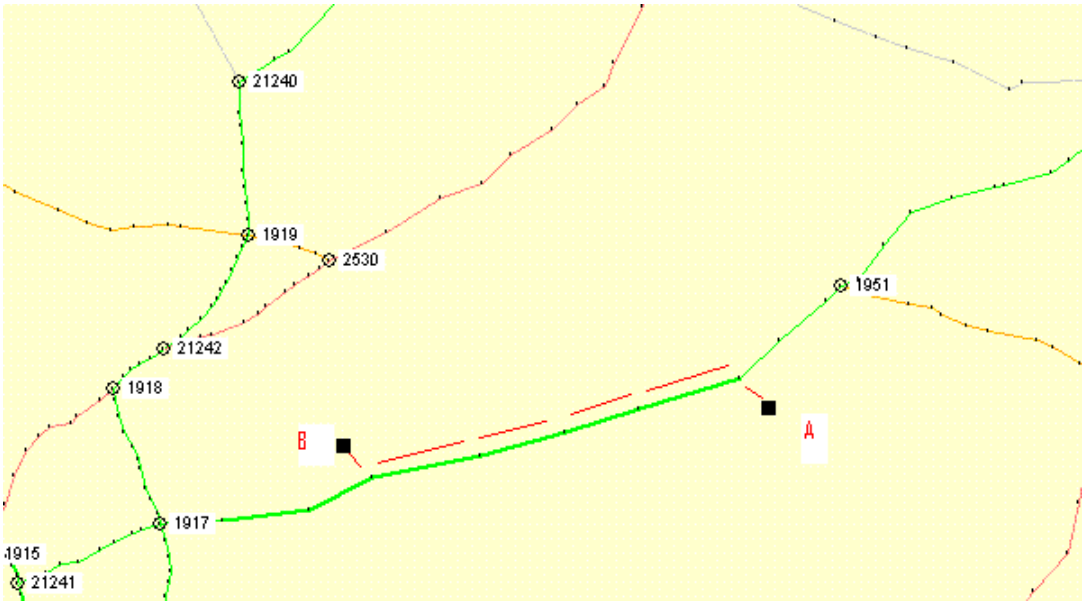


The newer methods will consider the sub-junctions along every link.

In analysing such sub-links, it is now also possible to consider the individual attributes of each, such as congestion flags or rural/urban classification in calculating travel times.

For calls that are closer together on the same link, the access and time/distance calculation can now consider using each of the sub-links to calculate more accurate values. In the picture below, the travel time and distance between A and B will now be calculated using the sub-links (as shown by the red lines) with both locations A and B accessing different sub-junctions along the same link.

When accessing sub-junctions on a dual-carriageway road, “turn left” logic will apply to ensure that the calculated values consider a safe turn-round point at the next main junction and do not assume that vehicles can cross carriageways and turn right.



Grow Options

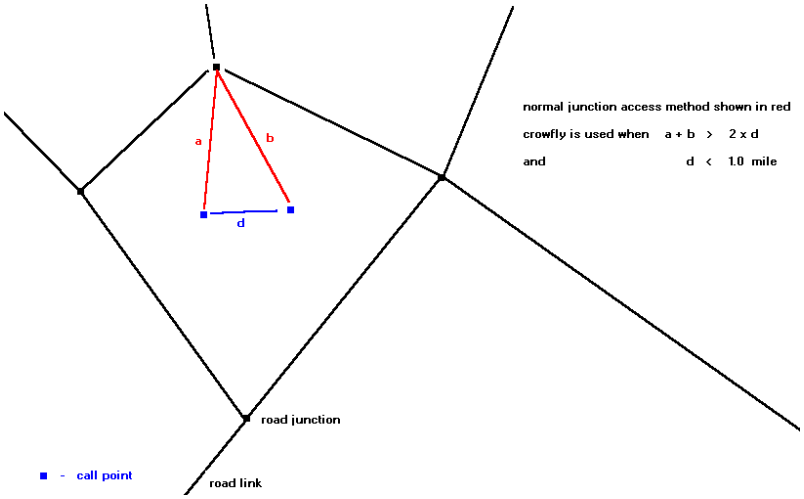
Travel optimisation in the MATRIX generation is performed using the Cost Factors. Using the default settings of 1.000 for cost per minute, and 0.001 for cost per mile will optimise for time, and produce the shortest time routes from one location to another as minimising time is considered much more important than minimising distance. The reverse will give shortest distance routes. Any combination of values for time and distance may be used to govern optimisation as required.

Matrix Build Control parameters may be used in conjunction with the Matgen Required Number of Destinations value to reduce the time taken to complete a MATRIX run. The time the Matgen process takes to calculate the information (often termed "build a row") is a direct function of the first grow limit if the required number of destinations is reached within that time, or the second grow limit if the first was not sufficient. This second grow will treble the time needed. By default the required number of destinations is set to 9999, with the first grow limit at 240 minutes and the second at 480 minutes. Almost without exception the value of 9999 exceeds the number of matrix rows, so the program will always build to the second grow limit as the first will always be unsuccessful. However if the required number of destinations is reduced, set the first grow limit such that the majority of rows calculated reach the required number in the first grow, thus avoiding the second grow and extra time. It should be remembered that for most studies the default matgen parameters will be quite sufficient as their size does not warrant any changes in this area. As a guide only if there are more than 1,000 unique references should any action be considered.

Matrix Required Number of Destinations parameter defines the amount of TTMATRIX stored by the system for the current model or study. The default value of 9999 means build a full matrix, that is calculate time and distance values for every unique grid reference to every other. Whilst this is acceptable for an average size study, of say 300 calls, in the case of 5,000 unique grid locations, as each cell of the matrix requires 6 bytes of space, the hard disk space required to store the information would be 6 x 5000 x 5000 = 150 Mb . To reduce the requirement, a lower value for the number of destinations would mean a much smaller file (saving disk space and program running time for the planning packages). For example if a figure of 200 were used in the case above the new size of TTMATRIX would be 6 x 200 x 5000 = 6Mb , with data now only being stored for the nearest 200 locations to each unique grid reference.

In using the vehicle scheduling programs it is unlikely in most studies that a route point would be linked to another that is more than 200 away from being the closest (given the number of call points necessary to provide 5,000 unique grid locations). However it may be necessary in some cases to provide more tolerance for certain data.

The MATRIX program will always store full rows of values from every depot to every other grid reference in the window area, only the inter-call times are affected by the destinations limit (the TTMPART2 file). This means that the Print routines and Warefrom module will work without any call to call data. Setting this value to zero will also allow a matrix calculation to be done using Postcode options. Therefore a fast matrix run for use with these programs can be achieved by setting the Required Number of Destinations field equal to ZERO before the matrix run. This type of matrix will not be of any use for the route planning programs as inter drop times would be required. This parameter can also be used in conjunction with the Matgen Grow Limits values to both reduce matrix size and run time. The time taken to build a matrix is itself NOT a function of the required number of destinations.

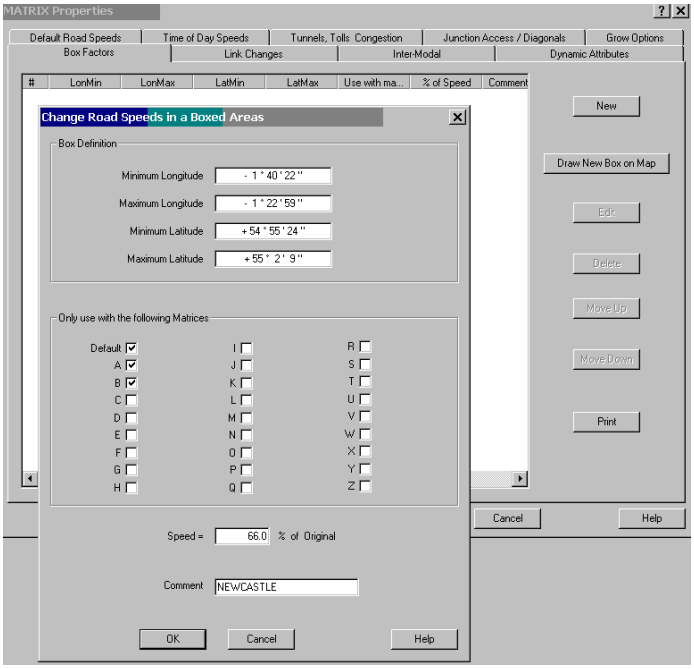


For call points that are very close together geographically a crowfly calculation of inter call time and distance information can be made rather than the usual method of accessing the nearest road junction of the network. This factor would be used in the routing operation.

Both the criteria set by the ratio and distance must be satisfied before the system will undertake such a process. By default the ratio setting is 2.00 and the distance is 1.0 mile; that is the distance taken to access the nearest junction or sub-junction of a link and return to the second location must be twice the crowfly distance between the two points, and this crowfly distance separating the two points must be less than one mile.

Box Factors

All road speeds in a boxed area can be increased or decreased using the Speed Factors facility. A factor of 120% will have the effect of increasing all road speeds by 20%; factors less than 100% will have a negating effect.



Box areas may be established using mouse or Latitude and Longitude. Where two boxes overlap the largest box number value will apply (i.e. box 2 further down the list has priority over box 1).

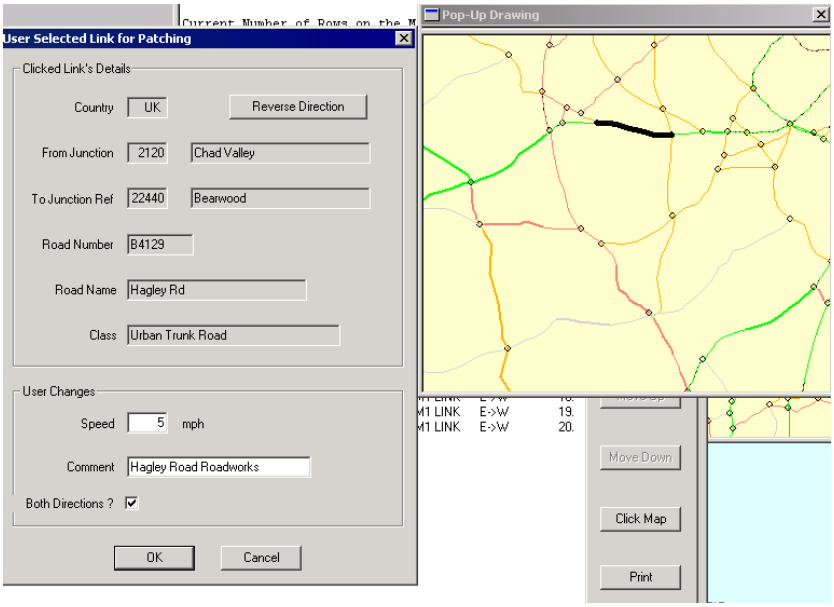
Any areas not defined by a boxed grid will use the default settings for road speeds. The boxed area factor will have priority over default road settings but not over any changes made to specific links using the Individual Road Link Changes facility. A text description may also be applied to each boxed area established using the field provided.

Box Factors may be applied to each Speed Table defined (Default and A-Z), allowing further control on speeds in the defined area by time of day or day of the week. Simply place a tick by each speed table required.

To add box areas using the mouse to draw a rectangle , first draw a pop-up window around the area in question on the graphics panel using the LHB. Then after selecting Travel Parameters, Box Factors, click on the Draw New Box on Map button. To create a new Speed Box, click on the New button to display the input screen for a box, type the appropriate values into the fields provided and then click on the OK button. To clear any existing values click on the relevant # no. and click on Delete. To change an existing box select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Box, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button.

Link Changes

It is possible to restrict the speed on any particular road section on the roadfile database by using the Individual Road Link Changes to modify the relevant base value set in either Road Speeds, Special Classes of Road, or Road Speed Factors by Boxed Area parameters. This facility is intended to cope with everyday problems such as long-term roadworks, traffic queues, or toll road links.



Modify Link Changes using Graphics Screen

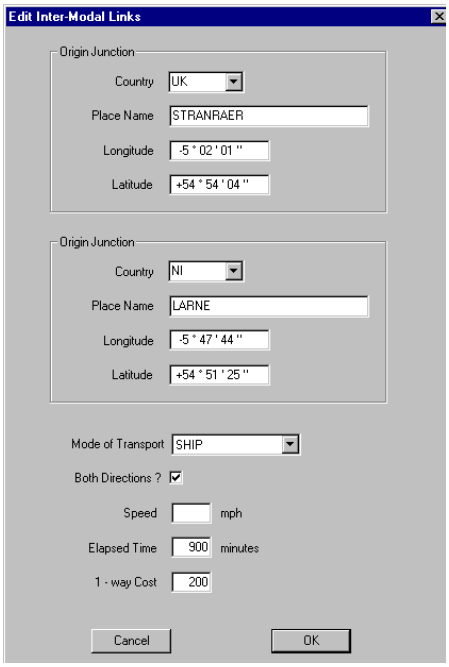
To add link changes using the Highway Mode graphics screen to highlight links, first draw a pop-up window around the area in question using the LHB. Then after selecting Travel Parameters, Link Changes, click on the New - Click Map button. The graphics window will then re-draw displaying junction circles. To select a link, click on the link required using the LHB and the dialog box will appear as indicated. The dialog will display the link details including junction points and road information. Input the User Changes as required (set the speed = 0 to disable the link) and set the both directions indicator. A comment field is available if required. Click Ok to save changes or Cancel to choose another link from the map if the current selection is not correct.

To clear any existing values click on the relevant # no. and click on Delete. To change an existing link select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a link in the list, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button.

Certain links will appear in this section for every new study as part of the set-up phase. These links include the Humber, Severn, Tamar and Forth bridges and the Dartford Tunnel/Bridge. Speeds for these will be set by default at 20 mph, and will over-ride any constraints set in any of the sections discussed above. It is useful to note that any restriction place between two junctions will only apply in that direction. For the restriction to be effective in both directions two lines must be set up - one with the A -> B direction and the other with the B -> A direction.

Inter-Modal

Links may be established between the road networks of each country using Inter-Modal links. These are network links which may be defined by the user in each study to allow for movement of goods between countries or within countries and may be



used in addition to normal road links between two countries which appear as a standard feature of the road databases as border crossing points. Obvious examples would be ferry links between the UK and continental Europe. With no pre-defined hard-coded links it is possible to set various options for studies quickly and easily. An Inter-Modal link consists of an origin, a destination, and a link attribute; and these are used by the MATRIX generation program when calculating time and distance between two points. A detailed list of the route between any two points is available using the ITINARY process.

To create a link , click on the New button to display the input screen for a link, type the appropriate values into the fields provided and then click on the OK button. To clear any existing values click on the relevant # no. and click on Delete. To change an existing link select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a link in the list, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button. Once set the link will access the nearest junction at either end (origin and destination) and use the link when calculating the best time (or distance) route between two points on the study. The Elapsed Time value is usually uppermost in this evaluation.

Country Code

The default country field will be set to UK in all cases, with any further countries available for use accessible by use of the drop-down box. Once the appropriate country code has been set the relevant databases will be used to lookup the origin or destination point for location.

Place Name

Text place name descriptions can be used for both origin and destination points and will be located using the automatic gazeteer facility that appears as the place name is entered. Once set the link will access the nearest junction to this grid reference at either end (origin and destination) for the purposes of TTMATRIX calculation.

Longitude and Latitude

As there is no common grid system (e.g. OS National Grid for UK) for the whole of Europe, the International DiPS system uses Latitude and Longitude (or Lat/Lon) to locate points.

Mode

A text comment field may be used to identify the mode of travel. Use the drop-down boxto select from the available choices of : SHIP, AIR, RAIL, TUNNEL, PIPELINE, CARRIER, and Disabled - which will mean that the link is NOT used in MATRIX runs being temporarily removed. The mode field (apart from the Disabled flag) has no influence on the choice of route taken - it is merely a text comment.

Both Directions ?

Use **YES** to make the link available in both directions, that is from Origin to Destination and also from Destination to Origin. NO will not allow a link from the Destination to the Origin to be considered.

Speed

If required, use this field to set a Speed for the link (in either mph or kmh dependent upon the units in use).

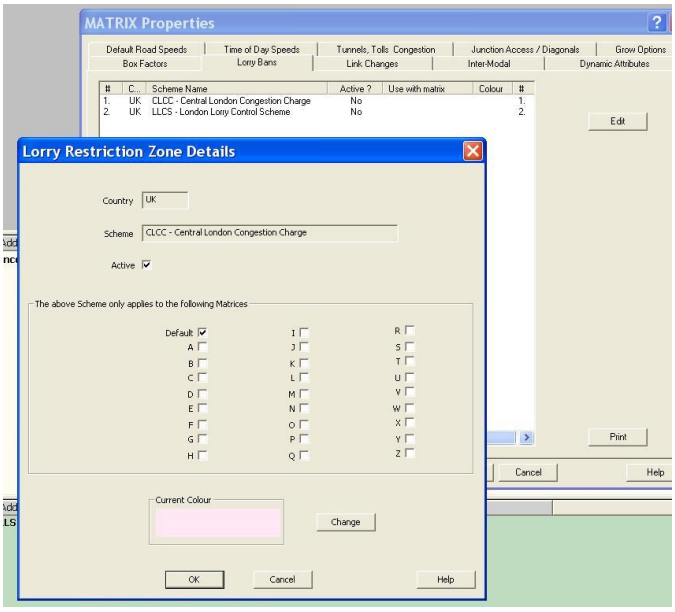
Elapsed Time

Once set the Inter-Modal link will normally calculate the best time route between two points on the study. The Elapsed Time value is therefore important. Set a value in minutes for the link in one direction only.

1-Way Cost

If required, input a cost value (using units applicable to other cost scales set) for the link in one direction only.

Lorry Bans



This dialog enables the use of lorry restriction zones in the Matrix time and distance calculation. It currently covers three areas – The Central London Congestion Charging Zone, the London Lorry Control Scheme and Cotswold Lorry Management Zone.

Select any scheme by clicking on the # number, and use the Edit button to display the dialog. On the dialog, use the Active tick-box to apply the ban and then choose the Road Speed Tables that will have the scheme's restrictions. For example, the Congestion scheme may apply to default speeds, whilst the London Lorry Control may only apply to speed set "N" which may be defined as night-time speeds from 9pm to 7am.

The London Lorry Control Scheme applies to HGVs operating overnight. For more information on these restrictions please refer to www.londonlorrycontrol.com.

Finally a background colour may be used to display the areas on the DiPS map background. Schemes may have a colour but be left inactive so that they will display on the map for information purposes only.

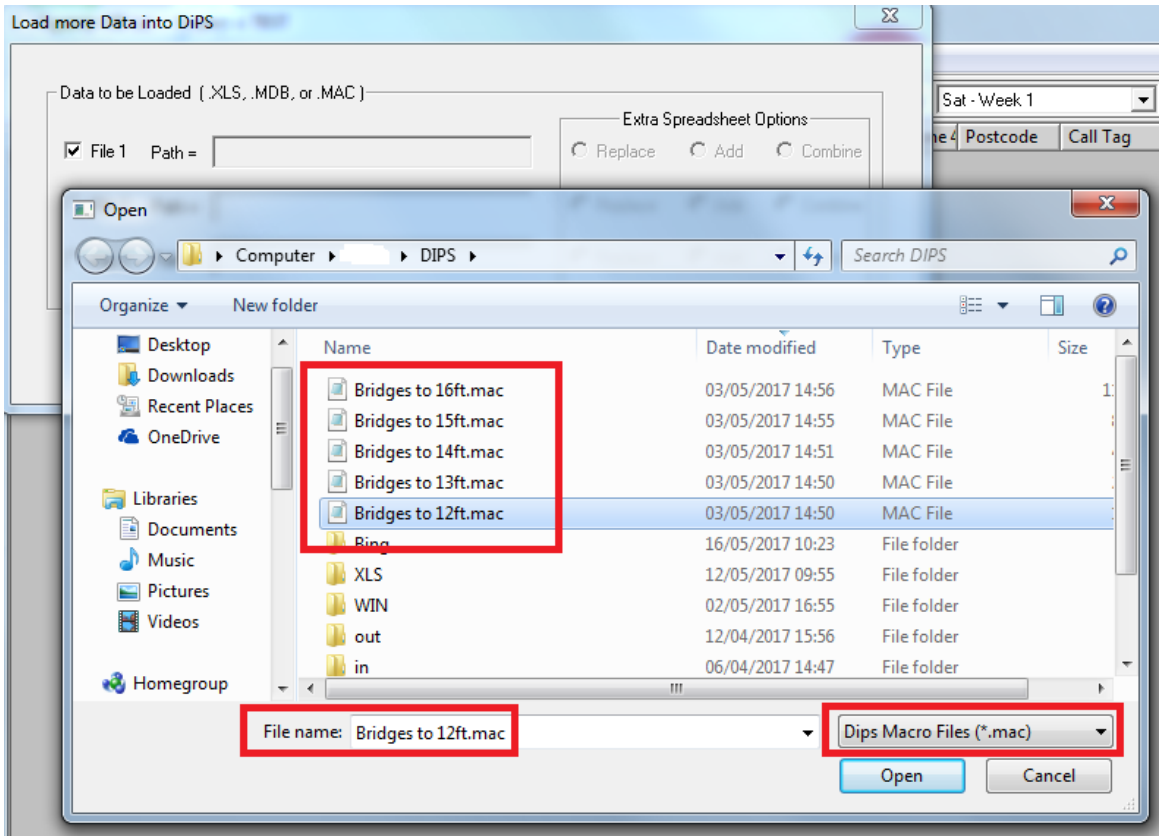
If active, the Matrix building process will avoid all roads in the scheme; such roads are only then used to access a delivery location.

Road Network Patches for Low Bridges

To help where necessary in travel time and distance calculations, a group of new road patch files have been made available to indicate where permanent structures may occur that cause vehicle height to be limited. These links are designed to work with the current road network in DiPS to ensure that any Matrix calculations take into account road height limits and are based upon information available in 2017. Please note that use of these patches will help identify many links that need to be avoided in calculations but cannot be considered to be an up-to-date current indication of all road height restrictions as some of these may be caused by temporary roadworks and such like. In all such instances, any information from DiPS must be used only as a guide to driving directions with any day-to-day route decisions made accordingly.

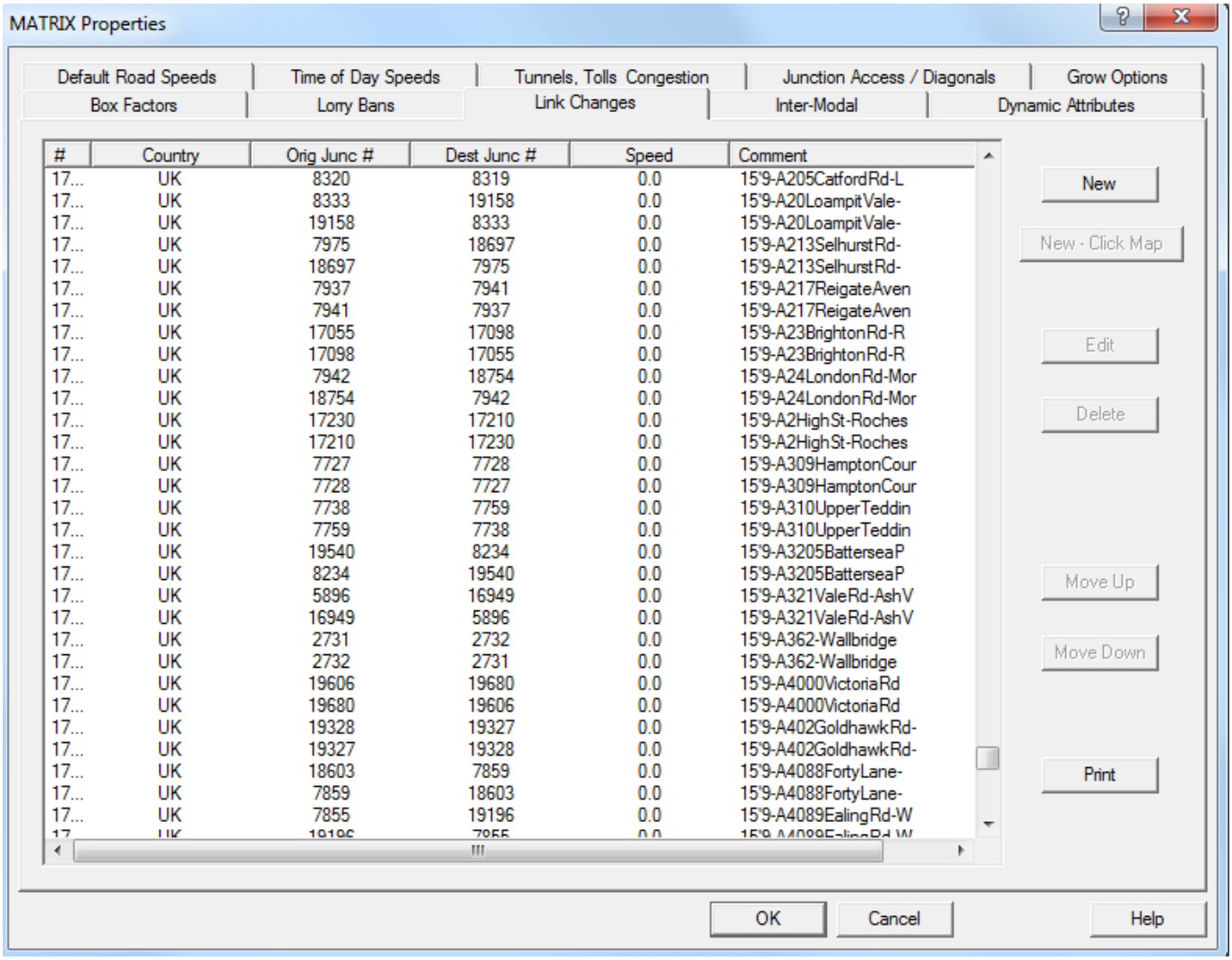
The patches are applied to the Road Links section found in the Travel - Highway menu option where other manual links can be added as necessary. A number of individual Macro files can be found in the DiPS folder following installation or can also be emailed to users as required. The files contain the road link patches for structures up to particular heights and can therefore be used to restrict road use depending upon the vehicle types in use: Bridges to 12ft.mac, Bridges to 13ft.mac, Bridges to 14ft.mac, Bridge to 15ft.mac & Bridges to 16ft.mac. As an example, the Bridges to 12ft.mac only includes those few links restricting height to less than 12ft whilst the bridges to 16ft contains all links restricting height up to 15ft 11".

To load any of the Bridge Links files into your current study, use the File, Study, Load Spreadsheet or DiPS macro menu option.
Change the type option (bottom right) to be Dips Macro Files, then select the appropriate Bridges.mac file and click open to load it.



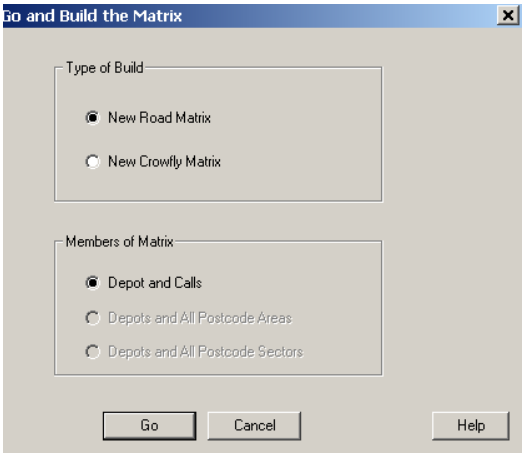
Once loaded the link information can be found in the Road Links tab in the Travel, Parameters menu dialog. Each link will have two entries for each direction with an Origin and Destination junction reference. As usual with the road link settings the speed of 0 mph or kmh will stop the link being use in any calculations. To remove or modify any link just click on the entry in the # column and use the Edit / Delete button The Comments section will show an abbreviated description of the road in question including the height restriction but please contact DiPS if you have any questions or queries for more information.

Please ensure that you are running the current program version before attempting to use the Bridges feature since updates have been made to the Link Changes feature to allow increased number of links to be stored to accommodate these patches


MATRIX Properties
Default Road Speeds
Time of Day Speeds
Tunnels, Tolls Congestion
Junction Access / Diagonals
Grow Options
Box Factors
Lorry Bans
Link Changes
Inter-Modal
Dynamic Attributes
Country Orig Junc # Dest Junc # Speed Comment
17... UK 8320 8319 0.0 15'9-A205CatfordRd-L
17... UK 8333 19158 0.0 15'9-A20LoampitVale-
17... UK 19158 8333 0.0 15'9-A20LoampitVale-
17... UK 7975 18697 0.0 15'9-A213SelhurstRd-
17... UK 18697 7975 0.0 15'9-A213SelhurstRd-
17... UK 7937 7941 0.0 15'9-A217ReigateAven
17... UK 7941 7937 0.0 15'9-A217ReigateAven
17... UK 17055 17098 0.0 15'9-A23BrightonRd-R
17... UK 17098 17055 0.0 15'9-A23BrightonRd-R
17... UK 7942 18754 0.0 15'9-A24LondonRd-Mor
17... UK 18754 7942 0.0 15'9-A24LondonRd-Mor
17... UK 17230 17210 0.0 15'9-A2HighSt-Roches
17... UK 17210 17230 0.0 15'9-A2HighSt-Roches
17... UK 7727 7728 0.0 15'9-A309HamptonCour
17... UK 7728 7727 0.0 15'9-A309HamptonCour
17... UK 7738 7759 0.0 15'9-A310UpperTeddin
17... UK 7759 7738 0.0 15'9-A310UpperTeddin
17... UK 19540 8234 0.0 15'9-A3205BatterseaP
17... UK 8234 19540 0.0 15'9-A3205BatterseaP
17... UK 5896 16949 0.0 15'9-A321ValeRd-AshV
17... UK 16949 5896 0.0 15'9-A321ValeRd-AshV
17... UK 2731 2732 0.0 15'9-A362-Wallbridge
17... UK 2732 2731 0.0 15'9-A362-Wallbridge
17... UK 19606 19680 0.0 15'9-A4000VictoriaRd
17... UK 19680 19606 0.0 15'9-A4000VictoriaRd
17... UK 19328 19327 0.0 15'9-A402GoldhawkRd-
17... UK 19327 19328 0.0 15'9-A402GoldhawkRd-
17... UK 18603 7859 0.0 15'9-A4088FortyLane-
17... UK 7859 18603 0.0 15'9-A4088FortyLane-
17... UK 7855 19196 0.0 15'9-A4089EalingRd-W
New
New - Click Map
Edit
Delete
Move Up
Move Down
Print
OK
Cancel
Help

Calculating Times and Distances with Matrix

The Travel , Run Matrix menu option is used to produce a TTMATRIX which may be envisaged as a table of times and distances between all the points in the current study. The four files created are stored on the \DIPS directory and are termed:-



TTMATRIX - storing all the depot to call information
TTMPART2 - storing all the call to call information
WWORK - storing all the attributes associated with each data row
RINDEX - storing an index to roadfile for the current window

Once the menu option is activated and the Go button clicked, two visible processes are set in motion.

WINDOW - This process constructs a border around those locations defined in the run with valid grid references (zero values are ignored). Within this area each unique grid reference is attached to between one and four road junctions (depending upon local geography) on a crowfly basis. A border is placed around the outermost points to ensure that key roads are not excluded. The object is to provide all the data and work files required to calculate travel time and distances in the next process. The road junctions are displayed graphically in red as they are being evaluated and added to the process.

BUILDING THE MATRIX - This process uses the window data defined in the most recent run to calculate a matrix of travel times and distances between all the defined grid references.

There are three type options from the Matrix dialog box.

New Road Matrix
The whole process of creating a Window and calculating the TTMATRIX for a given set of points can be a lengthy one. If possible, it is wise to have as many points as you can already set up before running the initial New Road Matrix run which will calculate from scratch times and distances between all points.

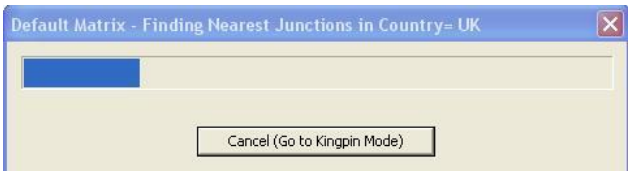
New Crowfly Matrix
The Crowfly option does not take account of the road database or speeds when calculating time and distance between locations it uses the Access parameters only.

For the Members of Matrix section, normally only the default Depots and Calls option is available. The other two postcoded options are used to calculate and then print times and distances to postcodes from depot locations. To activate the options set the Required Number of Destination in the Grow Options section of Travel Parameters to be Zero.

When the Matrix program runs 3 progress indicator dialogs will appear in turn for each Matrix type as each part of the process completes. If Time of Day Speed Tables have been input or multiple countries are required, these dialogs are displayed for each one.

The dialogs are shown in the following sequence:

1. Default Matrix – Finding Nearest Junctions in Country……
2. Default Matrix – Analyzing Link Data in Country…….
3. Default Matrix – Calculating Travel Times and Distances.



Each dialog has a Cancel button (if required at any time) that will stop the process and go into Kingpin Mode to view the base data. Please note that all processes must run un-interrupted for times and distances to be valid. The Cancel button should only be used where parameters or data need to be re-defined.

Load Orders Menu Options will also run the Matrix program.

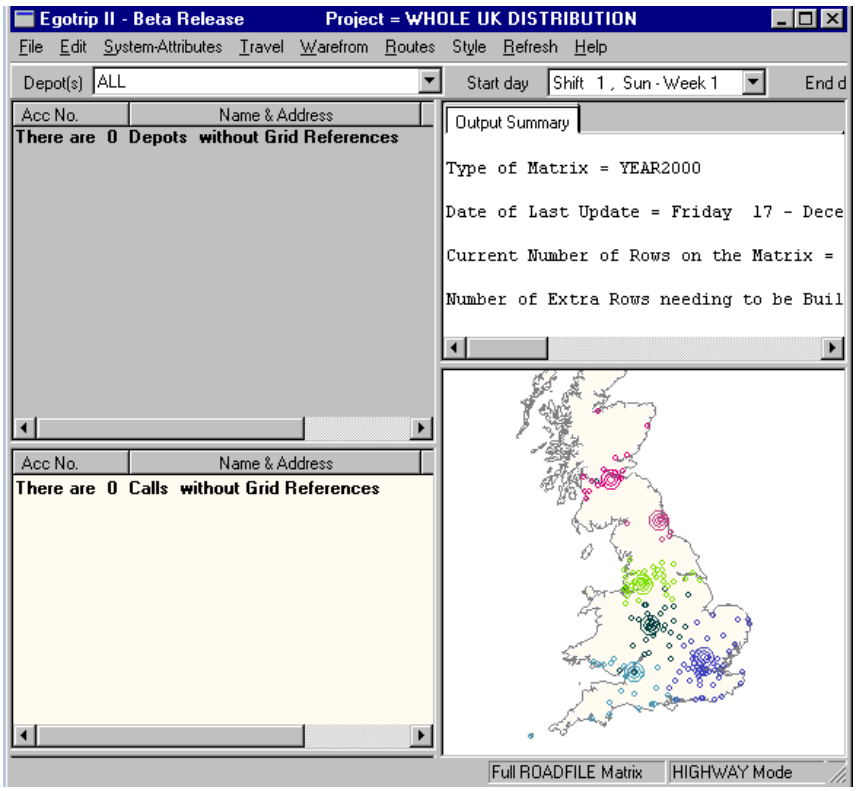
For convenience all routines from the File, Load Orders menu will now automatically complete the Travel, Run Matrix option as part of each order download. This avoids the necessity of manually running the routine. When the matrix is complete the usual dialog will appear. Click OK at this prompt as normal before continuing onto the next stage. If there are any calls or depots downloaded without grid reference, these must be corrected on the usual way and the Travel, Run matrix routine completed again to include these.

Using Highway Mode

The Travel option is used to produce a TTMATRIX which may be envisaged as a table of times and distances between all the points in your study. All the DiPS planning programs which rely on this detailed information access the latest TTMATRIX and thus it must be completed before any planning runs are attempted.

Road Speeds and other relevant values can be defined using the Travel , Parameters menu option which reveals the Matrix Properties notebook.

Highway mode may be used to easily identify and then locate calls or depots without a grid reference value. It will display an Output Summary Panel, graphics image, and text panels for calls and depots.



Output Summary Panel

Type of matrix - for information purposes only to notify the user if a Matrix run has been done - value set to TTMATRIX. If a matrix has not been run the word CROWFLY will appear.

Date of Last Update - gives the date of the last run

Current number of rows on the Matrix- gives the number of rows (different grid reference points) currently calculated

Number of extra rows needing to be built - gives the number of different grid reference points needing to be calculated and added to the Matrix

Number of ZERO Grid References - gives the number of calls and depots without a grid reference value.

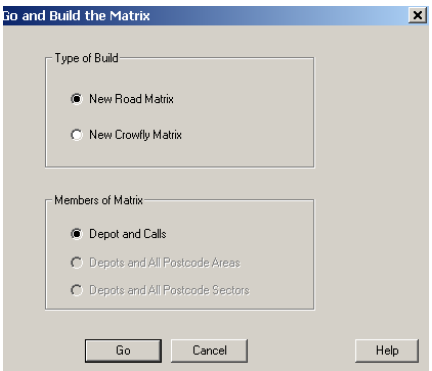
Calls or Depots without a Grid Reference

These appear in the two text panels in Highway mode and may be amended as required. From the List panel use the LHB to double-click an individual call or depot and alter the address details as necessary. In the absence of a postcode, one of the address lines may be used as a lookup with the DiPS Gazeteer to locate the call. Once more than 4 characters are typed into an address line, the lookup function will offer a list-box with all matching locations. Point to the required location and click the LHB to accept it.

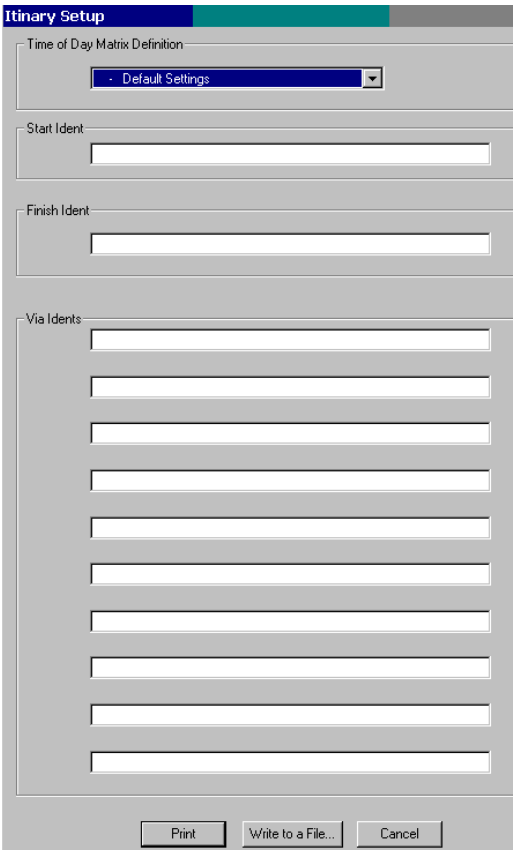
To set the same location information for a number of calls without grid references, in the middle text panel highlight the required calls using the left hand mouse button, click the right hand mouse button to display the menu and choose the Call Details option. Modify the address information as necessary with a postcode or address line lookup to find a longitude/latitude, click OK to save and the same location details will be added to all the highlighted calls.

For more information if necessary see the section on Creating and Changing Callsor Creating and Changing Depots

Once all these have been amended the Run Matrix option will appear -



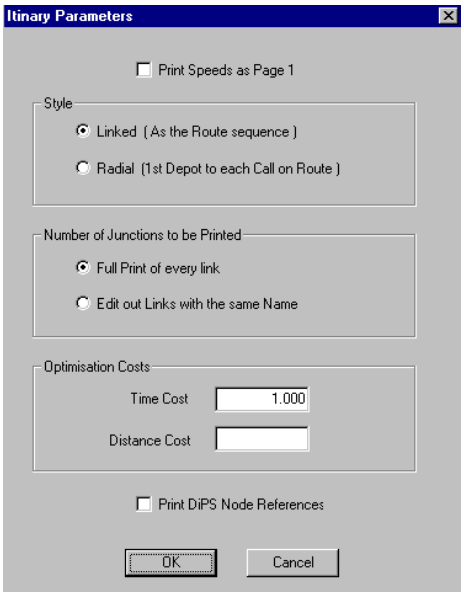
Run Itinary for Travel Directions



One useful by-product of the DiPS UK Road Database and the System's ability to generate travel times and distances is the corresponding capability to generate route detail between given points. Run Itinary is the option provided for this feature. Simply select the menu option and set the calls or postcodes (if a postcoded matrix run has been performed) when the Setup dialog appears. (A shortened version is shown)

Type in the required Start and Finish Idents with any via points as necessary. Then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

Information can easily be produced in either hard copy or in a text output file. Running of the process is however limited in scope to call or depot points that have been included in that run. The Write to a File option can be use to create a file to examine later.



Further options are available when the Parameters dialog appears.

The first section of output (if speeds tick box is set) lists the current road network parameters, including access information, road speeds for all classes of road, and congestion factors. The standard optimisation cost factors shown are also those currently set. For style, if linked is selected the route will be processed as it stands. If radial is selected a separate print will be provided from the origin depot to each of the calls on the route in turn. Every link may be printed or just where the road changes as selected by the radio buttons. Finally optimisation costs may be set for quickest time or shortest distance depending upon the higher cost values input (default is for minimum time). Finally DiPS node references may be printed. This is useful if road links are to be amended in the inidividual links section on road speeds (e.g. to close a section of road)

The output format is standard throughout all the various type of route processed. The first two columns display cumulative time and distance for each link of the route, the third displays a DiPS junction code number, which may be useful in identifying specific links on the road network. For instance the stretch of the M63 between Junction 8 and Junction 9 is identified on the roadfile as J257 to J256. The junction name, country and grid reference (Eastings , Northings or Lat , Lon), link name (which corresponds to road number - A556 (T) denotes a trunk road), and link attribute (DiPS road class number - 1 for motorways, 2 for dual-carriageway, 10 for urban A road for example), provide all relevant information regarding the road link used. Link time and distances will provide a breakdown of each section driven. Further development to the road network has enabled street names for main roads within urban areas to be adopted. Wherever such names are available they are displayed alongside the appropriate link. Total Time and Distance is printed beneath each route, with the appropriate average speed and cost calculations. A further breakdown of the route taken by road class is provided to facilitate any work being done on changing particular road speeds. An edited style print will merely give a line of output where the route has changed roads. In this case the link times and distances will show values for that road (see print example below).

For Linked routes, that is point A to B via C, D , E , and so on, a dotted line is used to separate each particular leg of the journey.

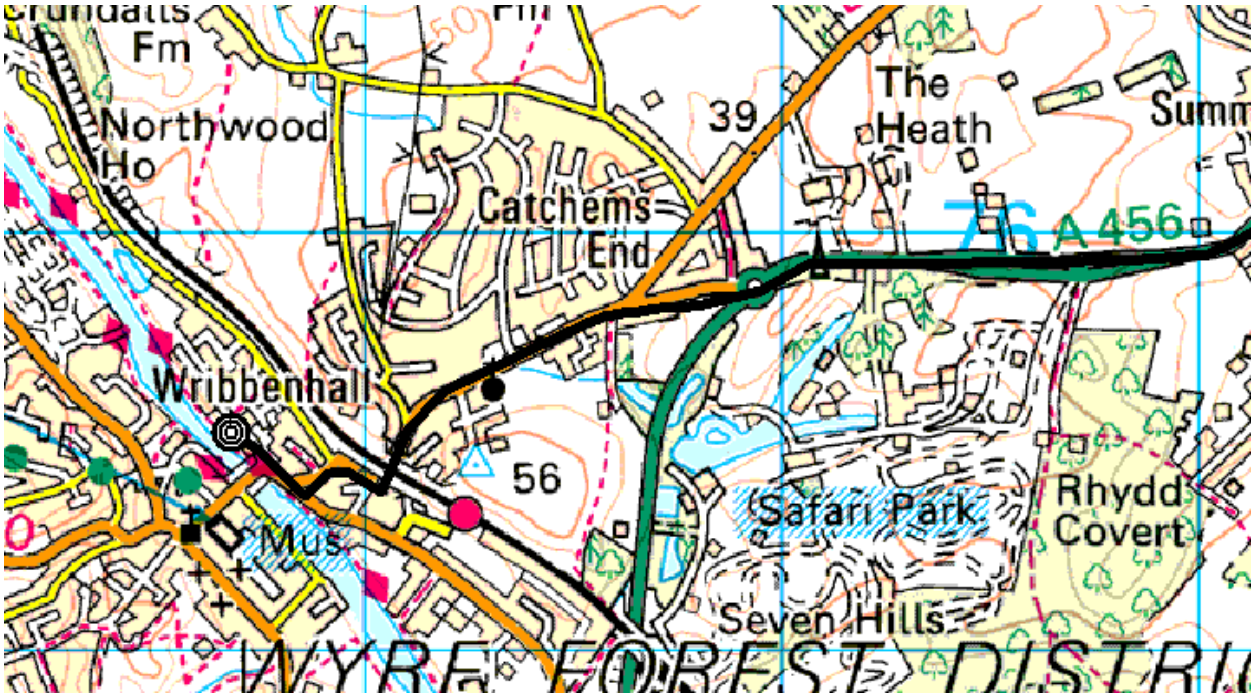
Printing Sub-Junctions

Road network improvements now mean that sub-junctions and sub-nodes along each link are used for time/distance calculation in Matrix. This more detailed information is also now available within printed output from the Itinary program. Selecting the Print DiPS Node References option on the Itinary Parameters dialog will show any sub-junctions used along a link by using a xxx.n Code (e.g. 2451.5 in the example below) to show which of the 10 possible sub-nodes has been accessed.

m EDT x	Stage Time	Stage Dist	DiPS Code	Junction Name		Grid	Ref.	Link Name	Link Attrib	Link Time	Link Dist	Cum. Time	Cum. Dist	Street Name
08:16	1.0	0.01	2451.5	(Kelmarsh)	UK	474584	277142	Access		0.0	0.01	70.8	69.18	
08:18	3.9	2.96	2449	Lamport	UK	475592	274465	A508(T)	3 r	2.9	2.94	73.7	72.13	
08:22	7.9	6.87	2448	Brixworth	UK	474853	270702	A508(T)	3 rU	4.0	3.91	77.7	76.04	
08:28	13.7	12.10	2447	Creaton	UK	470551	271770	C	6 Ur	5.8	5.23	83.5	81.27	
08:31	16.1	14.17	2447.3	(Chapel Brampton)	UK	471358	270065	A5199	4 r	2.4	2.07	85.9	83.34	
08:31	16.7	14.61		8648989		471748	270149	Access		0.6	0.43	86.5	83.78	
10:14	1.6	0.43	2447.3	(Creaton)	UK	471358	270065	Access		0.6	0.43	88.1	84.21	
10:19	6.8	4.79	1820	Chapel Brampton	UK	472930	266333	A5199	4 Ur	5.2	4.36	93.3	88.57	
10:19	6.9	4.90	1820.1	(Boughton Crossing)	UK	473009	266248	A50	4 r	0.1	0.11	93.4	88.69	
10:19	7.0	4.98		1047406		473072	266208	Access		0.1	0.08	93.5	88.77	
11:03	1.1	0.04	20919.10	(Boughton Crossing)	UK	473019	266230	Access		0.1	0.04	94.6	88.81	
11:03	1.2	0.17	1820	Chapel Brampton	UK	472930	266333	A50	4 r	0.1	0.12	94.7	88.94	
11:04	2.6	1.38	1820.4	(Harlestone)	UK	471885	265768	C	6 Ur	1.4	1.20	96.1	90.15	
11:04	3.4	1.94		1035631		472237	265393	Access		0.8	0.56	96.9	90.71	
11:19	1.8	0.54	1855.7	(Harlestone)	UK	471868	265741	Access		0.8	0.54	98.7	91.26	

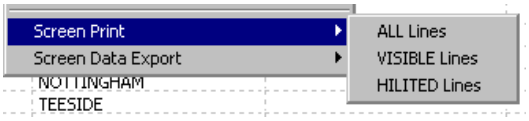
Maps

A black line drawn in the graphics panel on the right hand side of the Highway Mode screen will follow the roads taken by the Itinary run defined. In the example below, the roads used follow out of the DiPS' offices, up to the Bewdley by-pass and past the Safari Park. Zoom into any section of the route to show a more detailed map as required.



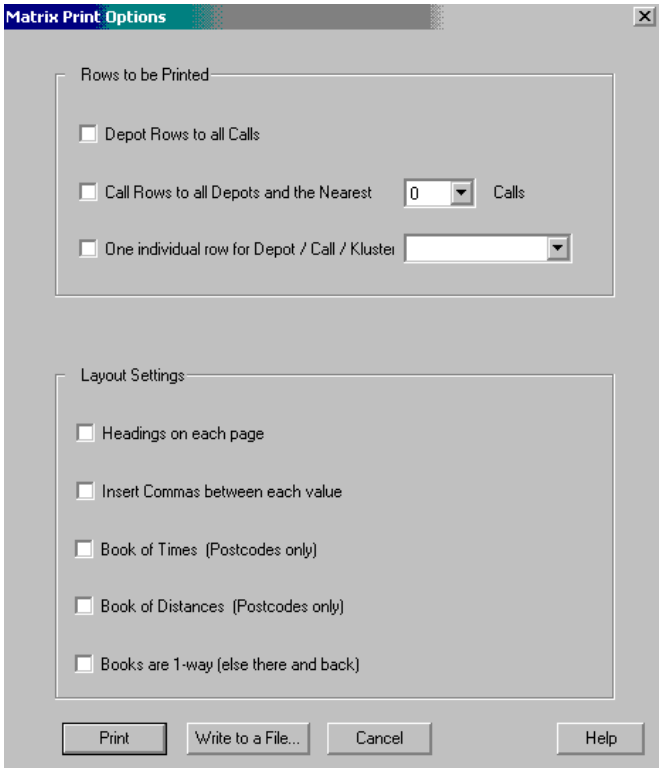
Reports and Printing Output in Highway Mode

Printing Screens



From Text Panels in all modes there are a number of print options for printing the screen as displayed (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB. ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed.

Printing Reports



The File, Print option in Highway Mode may be used to print information calculated by the TTMATRIX operation in which a table of times and distances is constructed between all depots and call points, and between the call points themselves. Information relating to the time and distance between a single location and all other locations can easily be produced in either hard copy or in a text output file. Running of the print is however limited in scope to call or depot points that have been included in that run. The Write to a File option can be use to create a file to examine later.

The Print dialog has a number of options.

At least one of the options in Rows to be Printed section must be selected - either

Depot Rows to all Calls – to print just stem times and distances from depots.

Call Rows to all Depots and the Nearest – select a number from the drop-down box to print times and distances from a call to the nearest……..calls.

One individual row ?- a valid Ident must be input to limit the output to a single origin point. If using data following a postcoded matrix run, ensure that the value you type in is valid. Postcodes are in strictly in the format AAnnxxBBB where AAnn is the area information (eg DY12, AB 1 or B 9), followed by 2 spaces “xx” , and then BBB as the 3 character sector information.

In terms of the output format the Layout settings can be used as follows -

Headings on each Page? - use this option to print headings on the first and every subsequent page of the output.

Insert t Commas between each value ? Select to print a comma between each field (useful if loading output into a database or spreadsheet program).

The other options regarding Books of Times and Distances are specific to certain operations. A Book of Times will print information for return journeys between the depot and all postcode areas or sectors (depending upon the matrix run option selected) based upon minimised time parameters. A Book of Distances will print information for return journeys between the depot and all postcodes based upon minimised distances. 1-way books will only print information for the outward leg of the journey.

Output Format

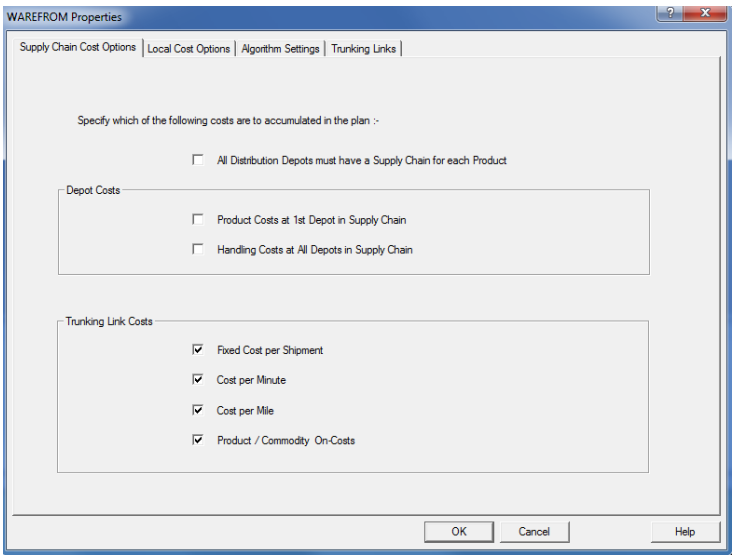
The output itself is a standard ASCII text file that may be imported into spreadsheet or other packages. A sample of the location and time/distance information with headings but without commas is as follows -

DiPS Matrix Print Date 01/01/2000 Page1

From	To	Mins	Miles
DiPS	ASHFORD	223	210.7
DiPS	AVON	96	85.3
DiPS	AYR	337	297.3

Warefrom Menu – Depot Boundaries and Supply Chain

Parameters for the Warefrom module



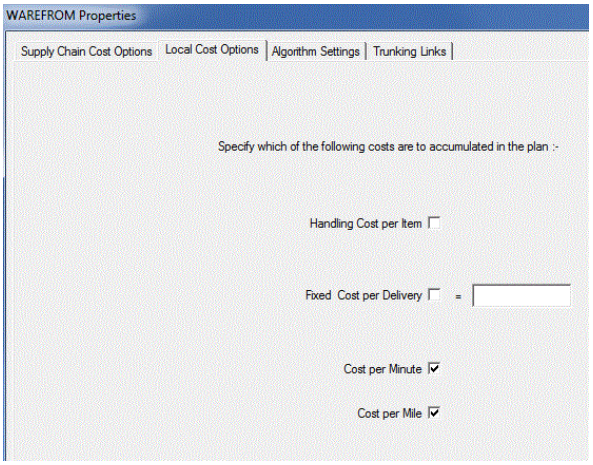
WAREFROM provides a means of simulating a Supply and/or Distribution operation at a global level. The option uses costs to allocate calls to delivery depots or supply chains and delivery depots. This option allows cost parameters to be set for use in the simulation.

To include or exclude costing parameters from the WAREFROM exercise, these fields employ a tick-box notation. If set the costs established on the screens indicated will be used in ascertaining the best depot to serve each call point.

All Distribution Depots Must have a Supply Chain for each Product Parameter is employed when using Trunking Links in a supply chain analysis model. If set, it will mean that single depots (that is depots without a supply chain trunking link feeding them) will be ignored when allocating calls if their Product Cost is set = 0, and other supply chains exist into these depots.

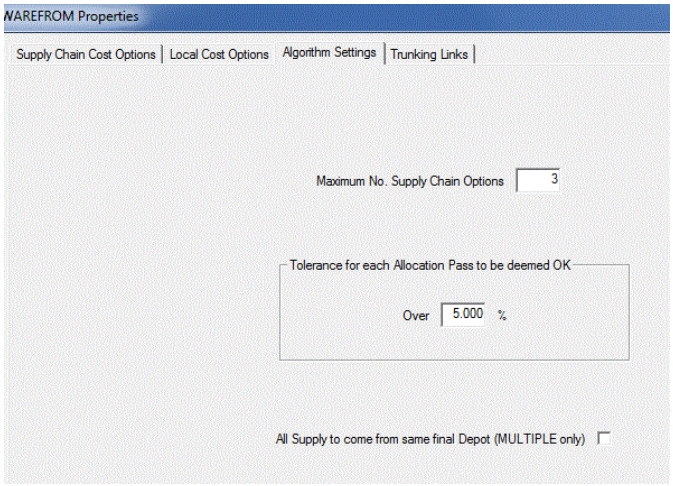
Depot cost parameters are set on each appropriate depot dialog using the Warefrom Parameters tab. Any cost values added to a product will be applied to the solution if the tick-boxes are set. Handling Costs can be applied for each depot at every point in the supply chain, whilst Product Costs are only included for the 1st depot in the supply chain and not subsequent trans-shipment depot points.

The Supply Chain Cost section applies only if supply chain links have been established using the Product Supply Chain option and the values set refer to these links. Fixed cost values per Shipment and per Location can be set on , and in case of Location, a value may be input to apply to ALL locations in the supply chain. If applicable, cost per Minute and Mile values are taken from the appropriate Vehicle Class parameters.



The LOCAL costs apply in all instances as they represent the costs involved with the delivery or collection from the radial distribution depot. By default only vehicle costs per minute and per mile are included and are taken from the appropriate Vehicle Class parameters. If specific depot costs for product and handling have been input it is necessary to set the appropriate fields for inclusion.

Fixed costs per drop may also be added for local considerations. A single value to apply to all depots in the run may be input as required.

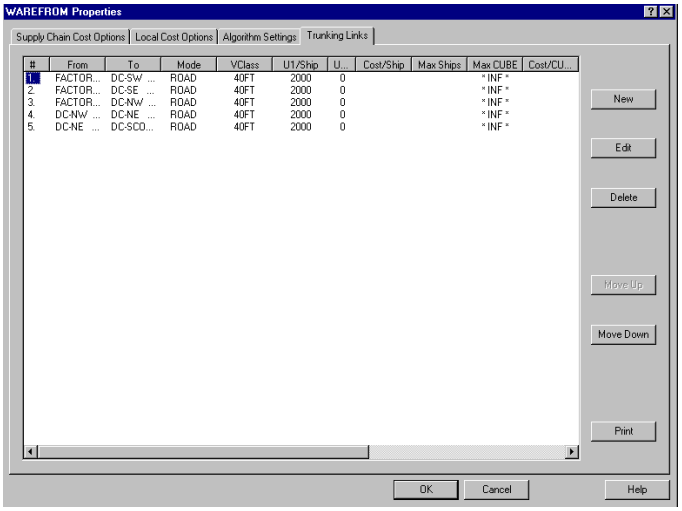


The Maximum Number of Supply Chain Options field must be in place before the Warefrom program can be run. A value of 3 may be considered to be a reasonable starting point and is given as a default, providing each call with a first, second, and third choice depot or supply chain selection. It may also be used in larger studies to reduce processing time by limiting the number of depots that can be tried for each call. The number will restrict choice to the nearest selections.

The Tolerances for allocation passes fields are only employed in situations where because of throughput limitations in supply chains a large degree of swapping between supply chains occurs as a natural sequence of the scenario. The default values will reduce the transferring process as calls are exchanged and minimise the requirement for additional allocation passes in the WAREFROM program. These values should not normally need to be amended; however if you have a study with multiple allocation passes (20 or 30) in WAREFROM you may need contact DiPS for further advice.

For multiple models the All Supply from 1 depot parameter in Warefrom Parameters may be set to YES to ensure that all required commodity items are delivered from a **single** distribution depot and not a range of depots.

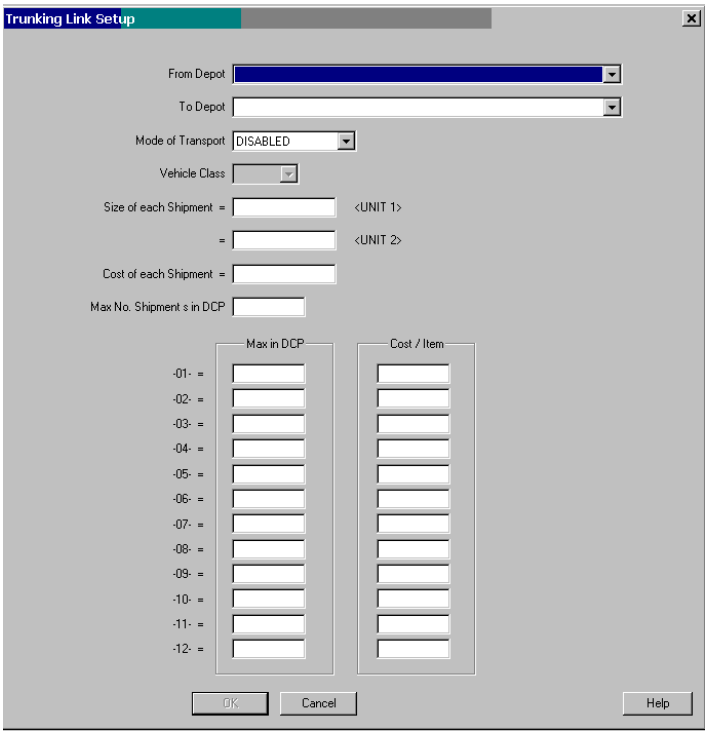
Product Supply Chain Link



Product Supply Chain Links provide a means of analysing the cost of moving a product through each link of its supply until it reaches its final destination or delivery point. So that the WAREFROM program may analyse all the different paths a product may follow each constituent link of the final chain must be specified individually with all relevant cost and constraining features. As an example a product for final delivery in Aberdeen may follow a number of paths from its production point to final delivery, with a number of possible variations. From the factory site in London, the product may be sent via a rail link direct to the delivery depot in Perth; or it may be sent via rail to a sorting centre in Birmingham, then by road to the main Scottish depot in Glasgow and then by road to Perth; or a direct carrier trunk option may exist between the factory and Perth. With each link being expressed individually it is therefore possible to establish a number of different options in order to identify the cheapest method taking into account any maximum quantity limitations that exist to the flow of product through any link of the chain.

Each link must start with an origin and destination depot reference corresponding to an existing depot in the study. A depot need not have any vehicle delivery or storage capability, it may define a transhipment point or intermediate handling centre, or even a factory, packing or production site : any point involved in the movement of products. Where different modes and handling costs are being used be sure to set up all the appropriate depots accordingly. For cases where the same depot may appear with different costs/modes it is perfectly feasible to set up more than one depot sharing the same location information but with different unique idents.

For modes such as RAIL, PIPELINE, SHIP, and CARRIER shipment sizes as well as cost may be employed to evaluate the correct cost per product unit along the link. Constraints such as the maximum number of shipments and maximum product quantities can also be specified to arrive at an accurate picture as all product may not necessarily follow the cheapest path with finite resources involved. The objective with WAREFROM is to produce the cheapest overall network whilst obeying all these constraints.



To create a new Supply Chain Link, click on the New button to display the input screen for a box, type the appropriate values into the fields provided and then click on the OK button. To clear any existing values click on the relevant # no. and click on Delete. To change an existing box select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Link, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button.

From Depot

The origin depot is the starting point for the movement of all specified products along this link of the supply chain. A depot need not have any vehicle delivery or storage capability, it may define a transhipment point or intermediate handling centre, or even a factory, packing or production site : any point involved in the movement of products. The ident used must correspond to an existing depot ident or the link will be deemed invalid. This depot may also contain handling and production costs for any of the products to be moved which are then added to the totals as necessary.

To Depot

The destination depot is the finishing point for the movement of all specified products along this link of the supply chain. A depot need not have any vehicle delivery or storage capability, it may define a transhipment point or intermediate handling centre, or even a factory, packing or production site : any point involved in the movement of products. The ident used must correspond to an existing depot ident or the link will be deemed invalid. This depot may also contain handling and production costs for any of the products to be moved which are then added to the totals as necessary.

Mode of Transport

A drop-down box may be used to identify the mode of travel. Toggle between the available choices of : SHIP, AIR, RAIL, TUNNEL, PIPELINE, CARRIER, and Disabled - which will mean that the link is NOT used in WAREFROM runs being temporarily removed. The mode field (apart from the Disabled flag) has no influence on the choice of supply chain link taken - it is merely a text comment. The choice of links is subject to cost and product throughput limitations. The selection of ROAD as a link mode however does allow vehicle costs for a particular mode to be examined as part of the costing process. The choice of vehicle class is set by the Vehicle Class parameter.

Vehicle Class

The choice of ROAD as a Mode of Transport allows vehicle costs to be examined as part of the costing process. The choice of vehicle class is set by the input of a valid existing class. Using the values specified the total costs for a one-way trunk movement will be included. Remember to double the costs if the vehicle is to run back empty. Also ensure that the relevant YES/NO options to include vehicle costs have been set on the Warefrom Parameters.

Size of each Shipment

Shipment size for non-vehicle modes of transport may be specified in terms of UNIT 1 or UNIT 2. It is designed as a method of limiting the amount of product moved at any one time so that costing issues using the Cost per Shipment may be completed to arrive at a cost per product unit for moving the goods along this particular link of the chain. Where no viable limit occurs (pipelines for example) a blank value may be used to set an infinite capacity for the DCP.

Cost of each Shipment

An integer value may be set for cost of each shipment made through this link of the supply chain. Remember to use units that are appropriate to the other costs employed as all costs are accumulated in the calculations done during WAREFROM. Also ensure that the relevant YES/NO option to include fixed shipment costs have been set on the Warefrom Parameters.

Maximum Number of Shipments in DCP

This parameter can be used to set the maximum number of shipments that can be made in the study period (DCP). To delete a Supply Chain Link enter the figure -1 in this field.
It will default to 1 if left blank, which may have an adverse effect on certain modes such as road. In this way always ensure that a value is input in this field for correct analysis of the chain.

Maximum Product Quantity in DCP

This value sets the maximum amount of product that can flow through this link of the chain in the DCP. The WAREFROM analysis will produce a final solution according to such limitations. Where product quantity values for one link are exceeded, the next best available choice would be used for any remainder. A blank or zero value will assume that the relevant product cannot pass down this supply chain link.

Cost per Item

This value is used to cost the movement of a single unit of product through the supply chain link. Values with up to 5 decimal places may be used if required. A blank or zero value will assume that no cost is involved in the movement. Remember to use units that are appropriate to the other costs employed as all costs are accumulated in the calculations done during WAREFROM.

Running Warefrom

WAREFROM provides a means of simulating a Supply and/or Distribution operation at a global level. The option uses costs to allocate calls to delivery depots or supply chains and delivery depots and thus produce a minimum cost supply structure (subject to restraining influences). As a result, it may be used to investigate multi-depot systems both for supply and radial distribution. It is an ideal tool to examine choices of Depot Location and Depot Area Allocation problems.

In simple models without product supply considerations depot areas may be based upon direct stem delivery from each available depot, with the closest depot serving a call point. However additional factors can easily be included for depot costs (such as handling or storage) or vehicle running costs where appropriate. In this way cost parameters may be quickly and easily incorporated within the model. The user is free to select the costs to be included in any run.

For analysis of complete Supply and Delivery operations Product Supply Chain Links provide a means of analysing the cost of moving a product through each link of its supply until it reaches its final destination or delivery point. So that the WAREFROM program may analyse all the different paths a product may follow each constituent link of a chain must be specified individually with all relevant cost and constraining features.

As an example a product for final delivery in Aberdeen may follow a number of paths from its production point to final delivery, with a number of possible variations. From the factory site in London, the product may be sent via a rail link direct to the delivery depot in Perth; or it may be sent via rail to a sorting centre in Birmingham, then by road to the main Scottish depot in Glasgow and then by road to Perth; or a direct carrier trunk option may exist between the factory and Perth. With each link being expressed individually it is therefore possible to establish a number of different options in order to identify the cheapest method taking into account any maximum quantity limitations that exist to the flow of product through any link of the chain. Different modes of transport such as RAIL, PIPELINE, SHIP, and CARRIER can be employed to provide a true multi-modal analysis of the complete range of supply options available. Shipment sizes as well as cost may can evaluate the correct cost per product unit along each separate link.

Constraints such as the maximum number of shipments and maximum product quantities can also be specified to arrive at an accurate picture as all product may not necessarily follow the cheapest path with finite resources involved. The objective with WAREFROM is to produce the cheapest overall network whilst obeying all these constraints, with all costs being accumulated and used in the analysis.

Normally, because of the 'broad-brush' approach that Warefrom takes, the first few runs should also be undertaken with corresponding Vanguard vehicle scheduling runs. This allows the user to calibrate the model, ensuring that the results produced by Warefrom are realistic and can be readily used to produce comparable results for examining any changes to the Distribution system under consideration.

WAREFROM Parameters should be set up before attempting to run the facility. The Warefrom COST screen may be regarded as the most important to check before using Warefrom, as this screen defines the method and costs to be used by the program in calculating Total Costs and in performing any reallocation of calls between depot areas or supply chains. The Maximum Number of Choices field must have a valid number before the program is run (for normal studies 3 should suffice). The depot screen does contain two other items of data used by Warefrom - the Stem Ratio and Stem Time fields. The Depot Stem Ratio is applied to the times/distances for the depot in question which are produced by Warefrom, giving results which are closer to the more detailed Vanguard runs. Indeed, the Stem Ratio may be obtain by running Vanguard, where it is given as the ratio of total distance driven by all Vanguard routes to the total of stem distances for all calls.

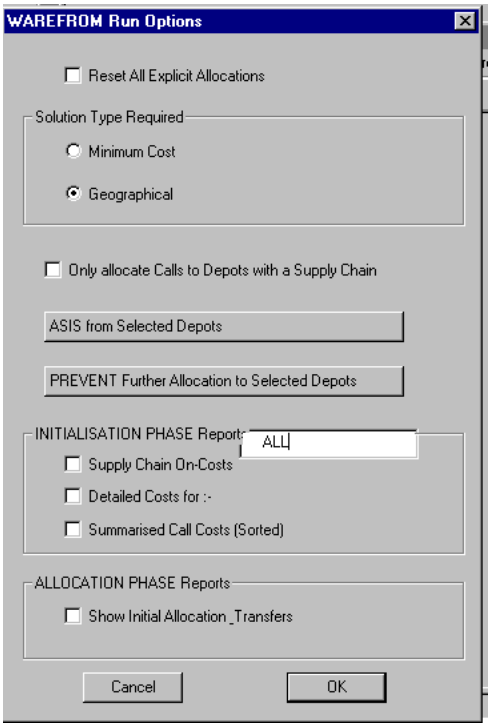
It is important to remember that a depot with a Stem Ratio which is lower than that of another depot will be at an advantage (other things being equal) and will therefore be preferred in the allocation of areas. For example, where a call is equidistant from the two depots, say 100 miles, the depot with a ratio of 0.6 will be preferred to the other with a ratio of 0.7. The relative costs (at 1p per mile) would be 60p and 70p. The main function of the Stem Ratio is to take inter-drop travel into account within Warefrom - the program otherwise produces results based solely on Stem time/distance.

The Depot Stem Time limits the extent to which depot areas may be grown. Calls which are further than this limit from the depot in question cannot be allocated to that depot's area. A common use of this parameter is to ensure that areas can be served by specific one-day or two-day routes. By limiting the area to the equivalent of half of a shift's driving time, calls would not be allocated where deliveries would require a second day out. The possible service levels for specific calls can be investigated in Vanguard/Egotrip. Any vehicle class or class wildcard specified in a Call Banned Vehicle parameter will also prevent that call being allocated to a distribution Depot with that class (or matching for wildcards) set as its Maximum Vehicle. For example a call with a banned vehicle of **A???** would not be allocate to a depot with a maximum set to AR22 or ARIG. If a call cannot be allocated to a depot for this reason the message BANNED VEHICLE CLASS (Wrong Type of Supplier) will appear in the Detailed Call Costs output section.

To allow easier identification of different types of calls, the graphic display shows -
normal deliveries - small circles (as before)
collections - large circles
deferred calls - crosses
carrier calls - small squares

Running Warefrom

To allocate calls to depots for the selected depots and days set in the toolbar, select the Warefrom menu followed by Run Warefrom. The Options dialog will appear.



There are a number of different options relating to the Warefrom process. Click the LHB on the necessary options to select them.

Reset All Explicit Allocations -

If this option is set all calls that have been explicitly allocate to a particular depot are re-set to be available for allocation to any viable depot in this run. Explicit allocation is set either by the parameter on the Call Properties notebook depot page, or by the process of allocating the call to a depot manually in Whatinsq mode following a deferral from an initial Warefrom run.

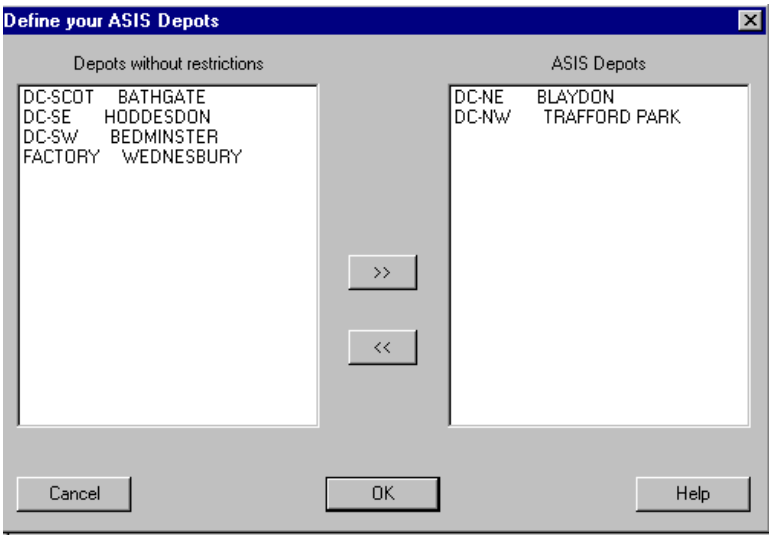
Solution Type Required -

A minimum cost solution will allocate all calls to their cheapest depot option in the solution, irrespective of depot boundary considerations. This may lead to a single call being allocated to one depot in where all others in that area are allocated to another. To smooth depot boundaries use the Geographical solution.

Only Allocate Calls to Depots with a Supply Chain -

If set this parameter will only allow calls to be allocated to a distribution depot if it exists as part of a total supply chain flowing from a production site.

ASIS from Selected Depots -
By clicking this option with the LHB a depot list dialog will appear.



This is used to select and add depots to the ASIS box, and the process will not change their allocation at all (either gain or lose calls).

To select a depot and add it to the current ASIS list, click on the depot with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the without restriction list. Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous run dialog.

PREVENT Further Allocations to selected Depots -

By clicking this option with the LHB a depot list dialog will appear as above.

This is used to select and add depots to the Prevent Allocation box, and the process will allow the depot(s) to lose calls but not allow them to gain extra work by re-allocation.

To select a depot and add it to the current list, click on the depot with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the without restriction list. Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous run dialog.

Initialization Phase Reports -

More detailed cost reports may be requested. These reports are printed on the WAREFROM.OUT file produced by each Warefrom run.

If an in-depth study of the supply and distribution network is being undertaken, a list of the supply chains and delivery depots may be obtained by selecting Initialisation Phase Supply Chain Report. The process will print tables of all the individual Trunking (or Supply Chain) Links with their relevant transport modes and throughput limitations for units and products.

RELEVANT TRUNKING LINKS - MAXIMUM THROUGHPUTS

From	To	Mode	CUBE	PLTS	CTNS
MAIN	BRISTOL	ROAD	**INF**	**INF**	**INF**
MAIN	GATESHEAD	RAIL	**INF**	**INF**	**INF**

Following the initial identification of the supply links each separate supply chain will be listed together with its relevant CHAIN NO. and the costs involved with a single item of each Product and Vehicle Unit passing through each Supply Chain. It is recommended that this output be cross-referenced with existing information to ensure that the correct costings have been applied for the links. The values given here will have a substantial effect on the final solution produced. It is this chain number that is used throughout the print to identify the Supply Chain, so that repetitive lengthy references to chains with many link points are avoided. Where no supply depots exist a single delivery depot will still be given a Supply Chain Number (see Chain 5 below).

```
RELEVANT SUPPLY CHAINS

 Chain        Dist'n Depot      Unit        Product       On-Cost      Supply Chain Links

[     1] : BRISTOL     ******  DISABLED  ******
           PATCHWAY

[     2] : BRISTOL                                                    <- MAIN
           PATCHWAY                                                     ATHERSTONE
                              CUBE                 7.53200
                                        PLTS       0.00000
                                        CTNS       0.00000

[     3] : GATESHEAD   ******  DISABLED  ******
           GATESHEAD

[     4] : GATESHEAD                                                  <- MAIN
           GATESHEAD                                                    ATHERSTONE
                              CUBE                 0.20000
                                        PLTS       0.00000
                                        CTNS       0.00000

[     5] : GLASGOW
           UDDINGSTON
                              CUBE                 0.00000
                                        PLTS       0.00000
                                        CTNS       0.00000
```

An in-depth listing of the calculated costs for calls and supply chain numbers may be obtained by setting the Detailed Call Costs Report. These more detailed cost reports may be achieved for ALL calls (by default = ALL) or a single call ident number, input in the field provided. The format gives a section for each call location with a separate line for each delivery depot and supply chain loaded into the run, so that comparative costs may be examined. The ident with address information is provided along with the vehicle class providing the cost information. This vehicle type is obtained from the Maximum Vehicle field of the Call, being the largest vehicle that may access the call. If any particular vehicle type is not available at a delivery depot, this supply chain option will not be considered for the call and a warning message will be displayed accordingly. The TOTAL COST calculation is the sum of all the constituent parts in use and the call is allocated initially to the cheapest supply chain option.

Calls that are outside of the Depot Stem Time limit will not have calculated costs and will be marked with a TOO FAR AWAY or REQUIRED ROUTE LENGTH > MAX message. Any Carriage Paid calls allocate to the nearest cheapest depot (the appropriate Stem Driving times from each delivery depot location are displayed) with the Vehicle Class set to 3rd to nominate a third party distribution function. Explicitly allocated calls are marked with an **e** and costs not calculated from all supply chains since that call cannot be considered for re-allocation.

Calls that do not meet any valid depot criteria are marked with a DEFERRED - NO DEPOT CHOICES warning message, as in the example below with no possible vehicle choices to meet access restrictions. Cost per Unit (Vehicle Unit 1) are calculated to show the relative cost differences from each chain taking into account the product demand volumes. It is this figure that is compared if the call requires allocation to its second or third choice supply chain with the first choices being over-allocated.

```
 Initialisation Phase

2)  Costs From Each Supply Chain

                  Supply                                          TOTAL      Trunk    ---------- Local Costs ----------  Cost/Unit
  Ident           Depot      Address            P/Code   Chain     COST       Cost    Veh Class      Fixed       Time       Dist

  10020           BRISTOL    PATCHWAY           BS34 5TA           10551       3012     40FT                      5506       2033   26.37750
  BRANCH          GATESHEAD  GATESHEAD          NE10 0YS       TOO FAR AWAY (stem time = 383 mins)
  COALSTREET LANE GLASGOW    UDDINGSTON         G71  7NT       TOO FAR AWAY (stem time = 474 mins)
  READING         HATFIELD   HATFIELD PARK      AL9  7HB            5769          0     40FT                      4397       1372   14.42250
  RG1  2BH        MAIN       ATHERSTONE         CV9  2RY           10679          0     40FT                      7909       2770   26.69750
                  MANCHESTER IRLAM              M44  5BL           16368          0     40FT                     11743       4625   40.92000
```

A summarised list of the Cost per Unit values for all calls and relevant supply chain numbers may be obtained by setting the Initialisation Phase Summarised Call Costs Report = YES. The print gives a line for each call location with Delivery Depot, available Supply Chain No. and Cost/Unit values listed n ascending order (i.e. cheapest option first). This allows the relative unit costs to be easily examined at a glance.

```
Summary of Each CALL's Cost Options (Sorted into Ascending Order)

10020 :    HATFIELD  =    14.422   BRISTOL   =    26.377   MAIN      =    26.697
10021 :    HATFIELD  =    14.504   MAIN      =    17.424   BRISTOL   =    24.311
10025 :    HATFIELD  =     9.502   MAIN      =    26.812   BRISTOL   =    34.335
10026 :    HATFIELD  =    10.590   MAIN      =    21.867   BRISTOL   =    25.787
10029 :    HATFIELD  =    12.737   MAIN      =    23.345   MANCHESTER=    39.795
10030 :    HATFIELD  =    11.830   MAIN      =    25.524   BRISTOL   =    32.108
10032 :    HATFIELD  =    44.932   BRISTOL   =    48.876   MAIN      =    64.280
10035 :    BRISTOL   =    31.966   MAIN      =    49.870
10039 :    MAIN      =    15.660   MANCHESTER=    27.096   BRISTOL   =    41.552
```

An alphabetical or numeric list of the calls being allocated to each depot may be obtained by setting the Allocation Phase Reports. If the allocation is achieved without violating any of the constraints placed upon the supply chain (such as maximum throughput limits) the list gives idents with the first line of address and the supply chain chosen, based upon the costs calculated in the Initialisation Phase.

```
Allocation Phase Trace


Pass = 1

Allocating to first choice


 Added 10020  BRANCH        ,COALSTREET LANE,READING       ,            ,            ,RG1  2BH   to HATFIELD   P1d{6} U1d ok
 Added 10021  BRANCH        ,COCKER AVENUE  ,OXFORD        ,            ,            ,OX1  1ER   to HATFIELD   P1d{6} U1d ok
 Added 10025  BRANCH        ,COWLING BROW   ,KENSINGTON    ,            ,            ,W8   6SA   to HATFIELD   P1d{6} U1d ok
 Added 10026  BRANCH        ,CREWE GATE INDU,GUILDFORD     ,            ,            ,GU1  4AF   to HATFIELD   P1d{6} U1d ok
 Added 10029  BRANCH        ,DOCK ROAD      ,CAMBRIDGE     ,            ,            ,CB2  3NA   to HATFIELD   P1d{6} U1d ok
 Added 10030  BRANCH        ,ELLIS ASHTON ST,CROYDON       ,            ,            ,CR0  1UP   to HATFIELD   P1d{6} U1d ok
 Added 10032  BRANCH        ,FOUL LANE      ,BOURNEMOUTH   ,            ,            ,BH1  1EW   to HATFIELD   P1d{6} U1d ok
 Added 10035  SUPERSTORE    ,RUSHTON ROAD   ,SWANSEA       ,            ,            ,SA1  3QW   to BRISTOL    P1d{2} U1d ok
 Added 10039  SUPERSTORE    ,SUSHTON IND EST,WOLVERHAMPTON ,            ,            ,WV1  4HF   to MAIN       P1d{7} U1d ok
```

Where depots constraints are met the program will still allocate calls to their lowest cost solution but will display the capacity exceeded for each call (in the sample above **P1d** represents product 1 demand). This is the Pass = 1 section. In Pass = 2 and so on the system will exchange calls based upon increasing Cost per Unit value.

The re-allocation process may continue until all constraints are met, that is the under-resourced supply chain now meets limitations after transferring calls to other chains. If, however, all calls cannot be re-assigned the program will give an appropriate warning message :

Pass = 3
One or more SUPPLY CHAINS under-resourced - Allocating to next choice
NOTHING ELSE CAN BE TRANSFERRED

After the required options have been set, finally click with the LHB on OK to start the process or cancel to exit the process.

The graphics screen will display a scaled map of the area in question with coloured dots being used to identify calls allocated to particular depots. Pay particular attention to any error message displayed in bright yellow text (such as Calls were Deferred) as these may prevent the solution being saved for re-allocation runs. In many instances the deferred or un-allocated call points prove to be isolated, lying outside of all depot stem time limits. If this proves to be the case, simply increase the relevant stem time limits and re-run the program. Deferred calls will appear as large crosses on the graphics display. Any Call that has been previously nominated as Carriage Paid will appear as a square.

Deferred Calls

Calls that do not meet any valid depot criteria are marked as DEFERRED - NO DEPOT CHOICES. These are then added to the deferred list which appears as the bottom (green) left hand panel. Possible explanations could include calls that are outside of the Depot Stem Time limit or that have no possible vehicle choices from any depot. The column header **Error** can be added in Style menu, Warefrom Headings. This will now provide a fuller description as to why the call is displayed. It can be used as well as the usual Reason Code column that provides a shortened description of the issue.

Time	Error	Reason Code
273	Exceeds Max Depot Route Length (Indays)	>MaxRouteLeng
102	Only Valid Vehicle Classes are banned at this Depot	DepBanVclass
229	Outside Max Depot Stem Time	OutDepStem
159	This Depot has no Supply Chain for Product # 1	DepP1

These calls may then be manually allocated in Whatinsq mode. Calls allocated in this way will have the Explicit Allocation field set, so that subsequent Warefrom runs will not defer them continuously. This may be re-set on the Warefrom run dialog if necessary or for an individual call by double-clicking the LHB on it.

Finding Ideal Depot Locations with Anyware

The Anyware option provides the means for locating optimum sites for a number of delivery points.

To analyse a number of depots' calls, first set the required depots and days in the toolbar, then select the Warefrom menu followed by Run Anyware. In reality the location of the depot ident loaded does not influence the analysis of the ideal location - it merely acts as a convenient way of loading a set of call data. a number of depots may be input to identify the location of an ideal new regional or national distribution or production centre.

When Anyware is run the graphics screen will display a scaled map of the area in question with coloured dots being used to identify calls. The first pass will calculate the Centre of Gravity for the call data with the logic using not just the locations of individual calls but also employs “drop-size”. Hence if some of the calls are more than a vehicle load for example, the logic would include multiple visits to that location in the first phase centre of gravity analysis.

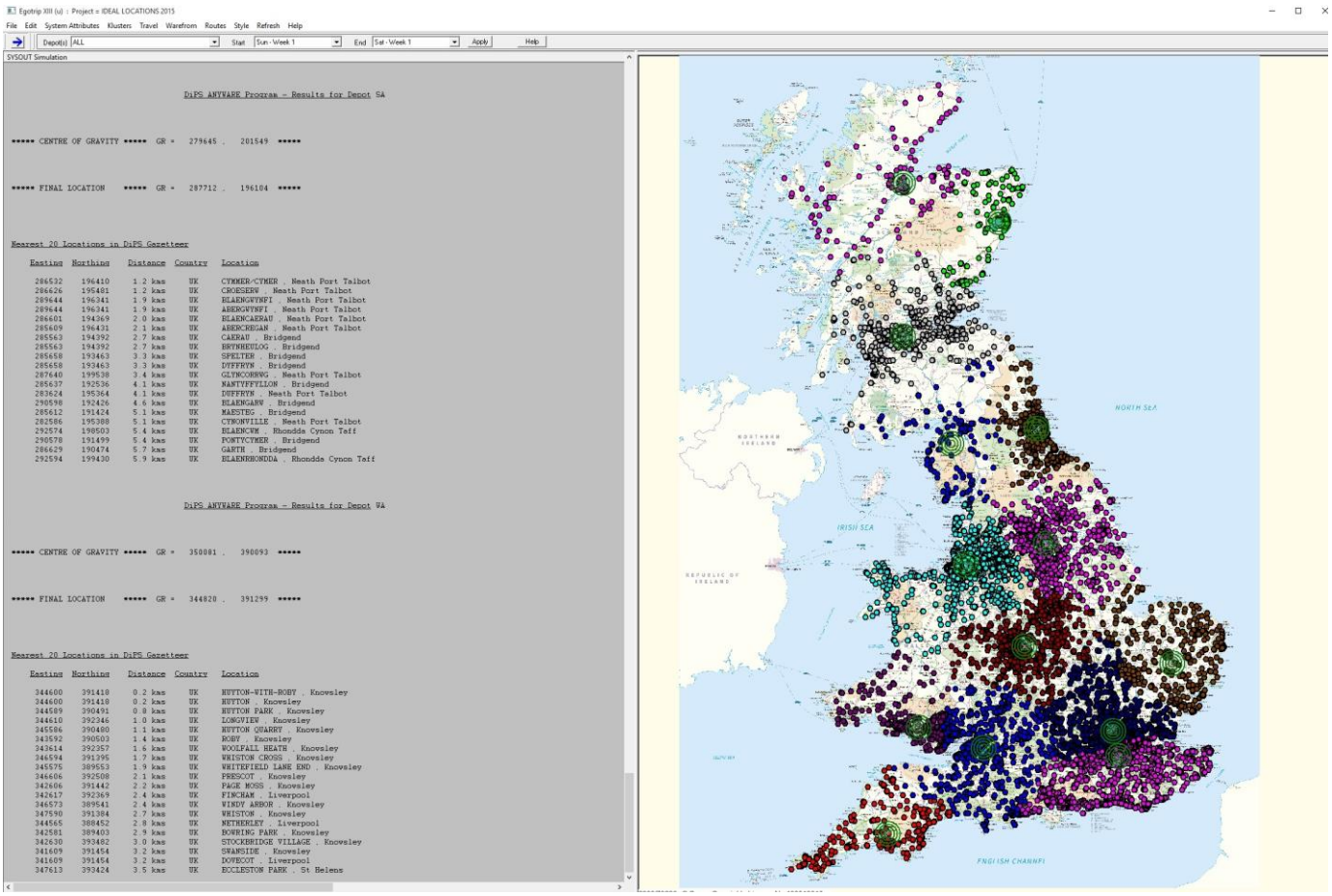
Once this initial sum is done a further convergence calculation runs to take into account visit frequency and vehicle units to arrive at an ideal location. Each intermediate location is displayed as an X - cross. The final ideal location is displayed as a circle. Ordnance Survey grid references or Latitude/Longitudes are used to arrive at a numeric grid location and the text panel then uses the DiPS Gazeteer to list the nearest places to this point.

These routines are employed in all of the three menu options.

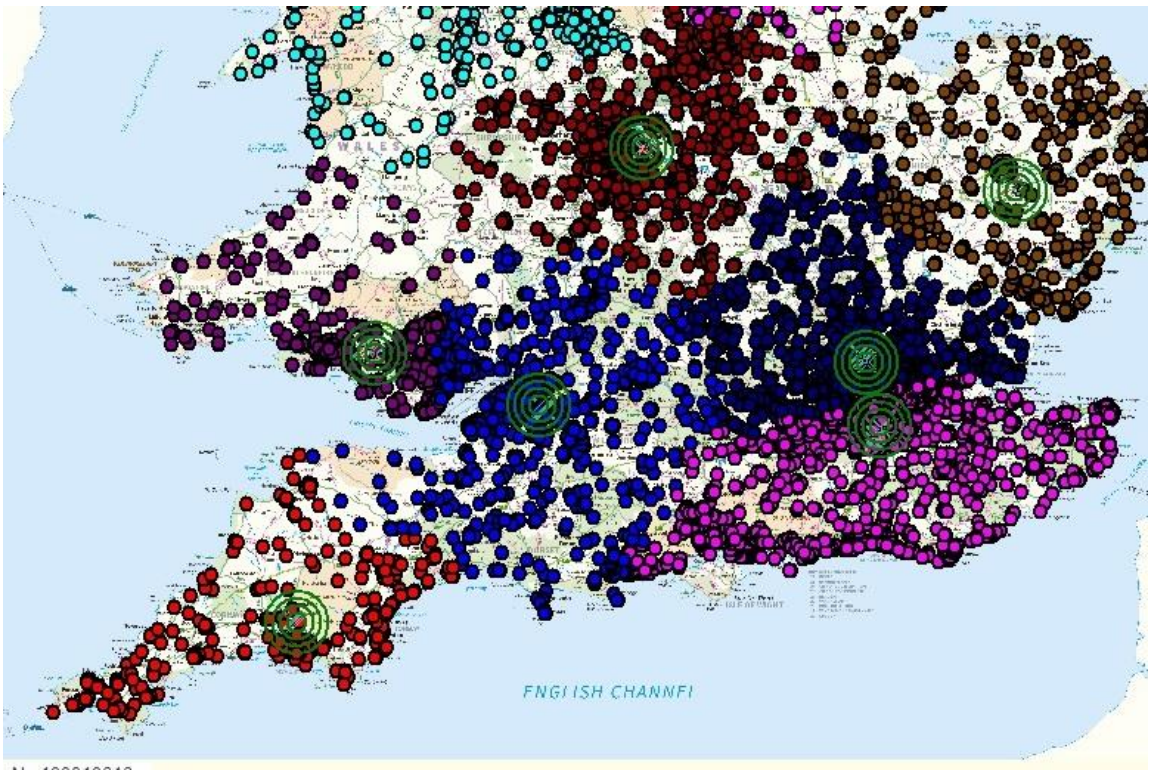
The **Multiple Locations** function will choose an ideal location for each of the depots in turn. Every depot’s data is examined individually and in turn with a new greenfield depot location suggested for the calls belonging to each one. If a depot does not contain any calls a message box will appear to indicate that there is no Valid Demand data.

The **Locations by Call Tag** option will process calls analysing each call’s tag field and produce an ideal location for each tag field group. As an example to define a couple of regions to analyse you might set the Call Tag field of a group of calls to be NORTH and others to be SOUTH, and the program will select two new ideal depots in these regions. Call Tag fields can be loaded by using the >A11 spreadsheet header or added manually by sorting data on the Calls tab in Kingpin Mode and entering required text using the entry field on highlighted cells.

For both options the text display panel will list the location details for each greenfield site in turn, giving the nearest 20 locations in the Gazetteer to the calculated point.



Graphically the map display will show a circle for each greenfield site. As with the standard Warefrom display calls are shown in different colours by depot so that the ideal site is easily identifiable. Existing depot locations are also shown to quickly visually how far from the current site the proposed location lies.



Additional logic has been added into the routine to enable results to be factored by modifying call data. This enables certain areas to be less significant in working out ideal locations. Examples would be where the ideal depot location may be pulled towards urban city areas because of call density (such as the centre of London) but cost, restrictions on land availability and workforce may also need to be accounted for.

To analyse a number of depots' calls, first set the required depots and days in the toolbar, then select the Warefrom menu followed by Run Anyware (the depot ident loaded does not influence the analysis of the ideal location).

When Anyware is run the graphics screen will display a scaled map of the area in question with coloured dots being used to identify calls. The first pass will calculate the Centre of Gravity for the call data with the logic using not just the locations of individual calls but also employs “drop-size”. Hence if some of the calls are more than a vehicle load for example, the logic would include multiple visits to that location in the first phase centre of gravity analysis.

To exclude calls from all of the Anyware process, tick or set the Carriage Paid flag on a Call’s address page. This can also be done in blocks either by displaying the CarrPaid column in Kingpin Mode and using the Yes entry field or by loading spreadsheet/CSV files with the >C9 column set to PAID.
Any such Calls will then be shown as a small square on the Map display and excluded from planning routines (Anyware, Warefrom, Vanguard etc). Set them back to Carriage Paid = No after Anyware to do vehicle routing if required.

Once this initial sum is done a further convergence calculation runs to take into account visit frequency and vehicle units to arrive at an ideal location. Each intermediate location is displayed as an X - cross. The final ideal location is displayed as a circle. Ordnance Survey grid references or Latitude/Longitudes are used to arrive at a numeric grid location and the text panel then uses the DiPS Gazeteer to list the nearest places to this point.

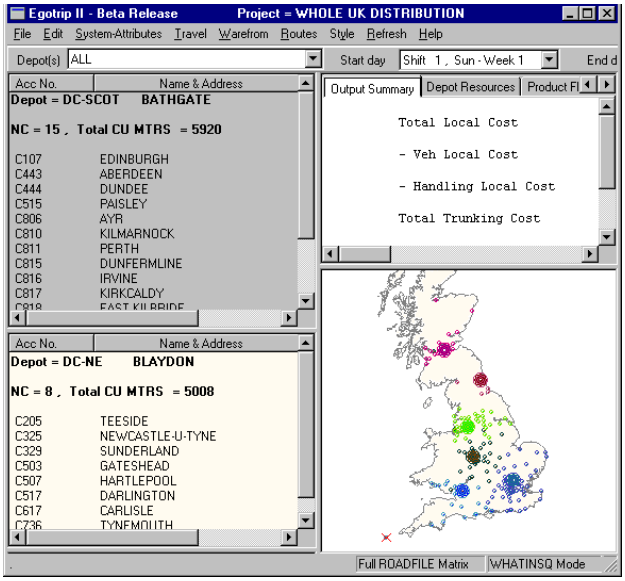
To include calls in the initial centre of gravity analysis but then reduce their effect in the convergence calculations, first create a single or range of Work Factors between 999 and 990 in the Products, Units and Work dialog and then modify each call’s Default Work Class on the Call’s Work tab.

This can also be done in blocks either by displaying the Wdiff column in Kingpin Mode and using the 999 entry field for example or by loading spreadsheet/CSV files with the >R9 column set to the required value such as 999.

Once the relevant Call settings have been done, simply run the Anyware menu options as necessary to produce the required location results. All 3 menu routines include the new coding (by Call Tag or Multiple Locations too). See below for examples of the different run options.

Using work factor values between 990 and 999 will have an increasing effect upon the results with 990 being the smallest influence and 999 having the greatest influence on results. Start with 999 and reduce the values as required

.Allocating Calls to Depots with Whatinsq



WHATINSQ mode provides the means for calls to be transferred from depot to depot and depot boundaries changed by manual interaction using the mouse pointer. The program will load all depots and calls selected and construct a scaled graphical image of the area to be examined (displayed on the graphics panel).

Initially depots must be set so that any calls identified by mouse actions may be transferred. To set the depot click the RHB on either of the text panels to display the menu and select the depot using a single click of the LHB on the relevant cascade menu option. Depots with a pre-set blank (or zero) throughput limit set will be greyed-out and are unavailable at this time.

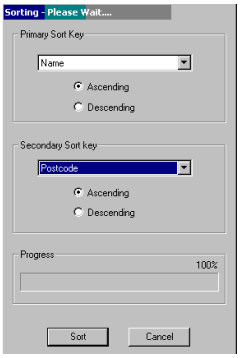
Alternatively from the graphics panel to choose a depot click with the LHB as follows -
single click - display the depot in the top text panel
double click - display the depot in the middle text panel
click three times - display the depot in a pop-up window (repeat for multiple depots)

Graphically the calls will be displayed in appropriate depot colours (similar to the Warefrom module). To change the allocation of calls follow the options below.

From the Text Panels

Click with the LHB on the necessary call or calls in any depot list to select them and drag the highlighted calls into the required new depot list. A red bar will appear in the required route to indicate the position between existing calls or depots. Multiple transfers may be achieved either by holding down the LHB and dragging over the required objects or using CTRL key to click on and thus select individual calls. All reports will be updated as activity occurs.

Use the Matrix / Warefrom Headings option in the Style menu to set the required columns and positions for the text panels in Warefrom, Whatinsq or Highway mode. Select the option by clicking the LHB on the mouse to display the dialog window. For more information see the section on Creating and Changing Styles.



Sorting the List of Calls

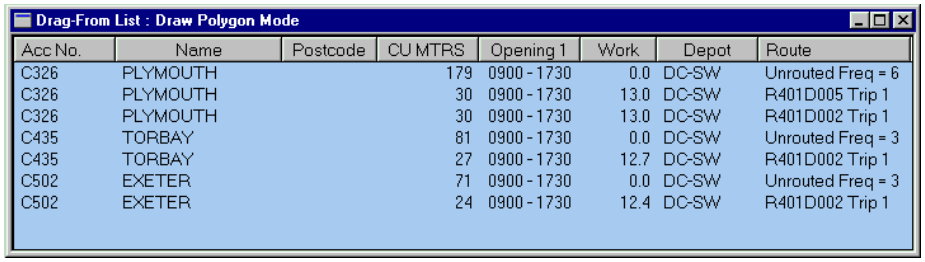
To sort Data lists by any column click once with the LHB on the column heading. Use a double click to show a dialog will appear offering the choice to sort by any of the columns in the data list using Ascending or Descending priorities (the default is ascending). A secondary sort key may also be selected using the list box option. Data will be sort firstly on the primary key and then within equal values by the secondary key. Click on the Sort option button with the mouse LHB and the progress indicator will start. It is possible to interrupt a long sort by clicking the LHB on the Cancel option, and just display the initial re-ordering already completed.

From the Graphics Panel

Click with the RHB on a graphics window to display the pop-up menu. From the list of options select either Draw Area Mode or Click Call Mode using the LHB.

Working with Lists in Draw Area Mode

Draw Area Mode allows the mouse to be used to draw freehand a line around a group of calls, which are then added to a list-box for dragging onto depots in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Draw Area Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.



Acc No.	Name	Postcode	CU MTRS	Opening 1	Work	Depot	Route
C326	PLYMOUTH		179	0900 - 1730	0.0	DC-SW	Unrouted Freq = 6
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D005 Trip 1
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D002 Trip 1
C435	TORBAY		81	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C435	TORBAY		27	0900 - 1730	12.7	DC-SW	R401D002 Trip 1
C502	EXETER		71	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C502	EXETER		24	0900 - 1730	12.4	DC-SW	R401D002 Trip 1

On the graphics screen, then **click and hold down the LHB** and begin to draw the boundary area line as required. Once the LHB is released any calls within that area will be added into the list-box (including those already at a depot). Summary field on the top line shows a total sum for all of the primary vehicle units of the calls to provide a useful guide when moving

drops. Click with the LHB on the necessary call or calls in this list to select them and drag the highlighted calls into position in the required depot text panel using the RHB. A red bar will appear in the required depot to indicate the position.

Working with Lists in Click Call Mode

Click Call Mode allows the mouse to be used to click on groups of calls, which are then added to a list-box for dragging onto depots in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Click Call Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.

Dragging functionality is as above for Draw Area mode.

Illegal Depots when moving Calls manually in Whatinsq

When dragging calls in Whatinsq mode to change their depot allocation, the movement of calls into an "illegal" depot will not be allowed. This is to prevent the accidental allocation of a call to a depot that cannot handle it. A warning icon will appear appropriate to the restriction found. The following issues will stop a call being allocated to a depot. – call does not have a grid reference (this is not a problem if the call is carriage paid); depot cannot handle the call's product or commodities; required stem time exceeds depot's limit; required route length exceeds depot's limit; and call's maximum vehicle class banned at this depot.

Since all calls must belong to a depot in DiPS, any calls that violate depot parameters will be displayed in the green deferred panel (bottom left of screen). Adding the style heading "Reason Code" will display an explanation of the problem. Calls may be moved to acceptable depots from this list and will be marked as explicit once moved into a new depot (shown as with a ***** preceding the depot name under the heading). Moving an explicitly allocated call onto another depot will remove the explicit indicator. Calls cannot be dragged from a depot into the deferred list.

Deferred Calls

Calls that do not meet any valid depot criteria in an initial Warefrom run remain allocated to their original depot and are added to the green deferred list which appears as the bottom left hand panel. Possible explanations could include calls that are outside of the Depot Stem Time limit. The column header **Error** can be added in Style menu, Warefrom Headings. This will now provide a fuller description as to why the call is displayed. It can be used as well as the usual Reason Code column that provides a shortened description of the issue.

Time	Error	Reason Code
273	Exceeds Max Depot Route Length (Indays)	>MaxRouteLeng
102	Only Valid Vehicle Classes are banned at this Depot	DepBanVclass
229	Outside Max Depot Stem Time	OutDepStem
159	This Depot has no Supply Chain for Product # 1	DepP1

Basic information displayed includes Account No. Address, Postcode, Quantity in terms of vehicle units, and work time. These defaults may be changed using the Style menu option for Warefrom headings if required. To add a call to a depot once set, click with the LHB on the necessary call or calls in the deferred list to select them and drag the highlighted calls into the depot list using the RHB. The calls will then be displayed using the Sort criteria last employed on a depot. Calls allocated in this way will have the Explicit Allocation field set, so that subsequent Warefrom runs will not defer them continuously. This may be re-set on the Warefrom run dialog if necessary or for an individual call by double-clicking the LHB on it.

Radial Lines

Click with the RHB on a graphics window to display the pop-up menu. From the list of options select either Display Radial Lines to display a line linking each depot with all its allocated calls, or Remove Radial Lines to re-set. Depot colours may be changed as necessary using the menu option from the relevant text panel.

Reports in Whatinsq Mode

The Summary Panel can be used to display a number of different summary reports for the all the current depots displayed. Each report may be selected by clicking the LHB of the mouse on the appropriate tab. It will then be displayed in the panel until another is selected. By default the Output Summary is given priority appearance. All reports are updated as calls are swapped between depots or basic cost parameters altered.

Transferring Calls or Orders between Depots in Warefrom

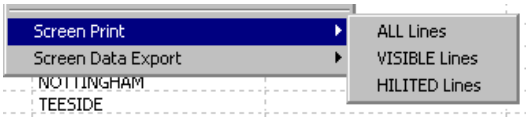
The System Attributes menu has a parameter **Transfer Calls not Orders** that may be set to define how orders are moved between depots in Whatinsq mode. Tick and set this option if all orders for a call are required to be moved together between depots. In this instance moving one order will automatically move the call and hence all others for that call. The default case will allow orders to be moved individually (i.e. orders can be delivered from different depots to the same call location.

Exporting Information from Warefrom

The file ALLOCS.TXT in the DiPS folder is produced every time Whatinsq mode is activated or the Warefrom option is run. The fields are as follows and are all comma separated - Account No , Tag , Name , Address1 , Address2 , Postcode , Easting , Northing , Longitude , Latitude , Stem Time , Stem Miles , Supply Chain No , Product Code , New Depot , Old Depot , Products 1-12 , Frequency , Total Visits. New and Old depot information is applicable to Warefrom runs ; where the call is re-allocated to a new depot location. Stem Times and Mileages are given to the owning depot. Product Code is for multiple models. The file is over-written every time the option is taken.

Reports and Printing Output in Warefrom or Whatinsq Mode

Printing Screens



From Text Panels in all modes there are a number of print options for printing the screen as displayed (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB. ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed.

Printing Reports

The Summary Panel can be used to display a number of different summary reports for the all the current depots displayed. Each report may be selected by clicking the LHB of the mouse on the appropriate tab. It will then be displayed in the panel until another is selected. By default the Output Summary is given priority appearance.

The Output Summary

An overall total is maintained and displayed by default, giving the sum of all depots loaded. The Grand Total is broken down into trunking costs for supply chain link movements, and local costs for vehicle delivery costs and distribution depot costs. The values for Shift Time, Travel Time, and Driving Distance are estimates based upon stem values and the Stem Ratios fields for depots and should not be taken as accurate values. Such information is available to a much higher degree of accuracy from Routes mode. The Cost over the Optimum value is representative of the additional cost over the minimum cost solution that was necessary due to re-allocation because of supply chain constraints being broken (chain is under-resourced).

Output Summary | Depot Resources | Product Flows | Trunking Used | Manufacturing

```
Total Production Cost       =         0

Total Local Cost            =    993937
- Veh Local Cost            =    993937
- Handling Local Cost       =         0

Total Trunking Cost         =     48788
- Veh Trunking Cost         =     48788
- Handling Trunking Cost    =         0

Grand Total Cost            =   1042725

Cost over the Optimum       =     37486

Total Vehicle Deliveries    =     56800 CUBE

Total No. Calls Allocated   =       184 (184 Drops)
Total Local Shift Time      =       212 hrs 13 mins
Total Local Driving Time    =       172 hrs 48 mins
Total Local Driving Dist.   =      6713 miles

Total Trunked               =     11150 CUBE

Total No. Calls Deferred    =         7 ( 7 Drops)
Total Delivery Q Deferred   =      2200 CUBE
```

Depot Resources

The Depot Resources tab gives a depot by depot listing of maximum deliveries, calls, shift/travel time, and distance, with the estimated amounts used according to the final allocation of call points. This is split into delivery and collection data. A Total Depot Cost is also printed. The maximums displayed are governed as follows :-

Total Units - sum of available vehicle capacities x no. shifts x average utilisation of vehicle class
No. Calls - no. of vehicles available x no. shifts x maximum no. of drops per shift
Shift Time - no. of vehicles available x no. shifts x maximum shift time
Travel Time - no. of vehicles available x no. shifts x maximum travel time
Travel Distance - no. of vehicles available x no. shifts x maximum driving distance

In such a way the use of vehicles at delivery depots will constrain the eventual solution. In the absence of actual vehicles the following calculation is employed to estimate the numbers :
Maximum UNIT 1 limit (as converted from Product Throughput limit) = No. Vehicles
No. Shifts x Maximum Vehicles Size restriction of Depot

The Maximum Number of Drivers field on the Depot if set will also limit the Number of Vehicles available.

Estimates of actual Times and Distances are calculated using the Stem Ratio factor for each depot. For example, the Travel Distance = Stem Distance x frequency x Stem Ratio.

Any depots which prove to be under-resourced following the Allocation Phase will display % Resource values greater than 100 for the parameter exceeded (See DC-SW below). If there are any broken constraints the SUPPLY CHAIN RESOURCE warning messages are displayed on the status bar line at the bottom of the screen. These depots will also be displayed in blue text. Details are sub-divided into Local Work, that is Deliveries, Collections and Trunking (outward onto other depots or transshipment centers forming part of a supply chain) completed by the depot vehicle fleet; and Carrier work (incoming to be received and outgoing to be handled) to be completed by non-fleet resources.

Total Estimated Resources Used by Each Relevant Depot

Depot Ident	Total Costs		Quantity-1 CUBE	Quantity-2	No. Calls	Shift Time	--- Travel --- Time	Dist
BRISTOL		Maximum Throughput	** INF **		** INF **	** INF **	** INF **	** INF **
	137453	Local Deliveries	6350		20	1730	1472	994
		%			0.0	0.0	0.0	0.0
GATESHEAD		Maximum Throughput	** INF **		** INF **	** INF **	** INF **	** INF **
	83578	Local Deliveries	4800		13	1071	897	564
		%			0.0	0.0	0.0	0.0
GLASGOW		Maximum Throughput	** INF **		** INF **	** INF **	** INF **	** INF **
	78786	Local Deliveries	3650		15	1016	833	520
		%			0.0	0.0	0.0	0.0
HATFIELD		Maximum Throughput	** INF **		** INF **	** INF **	** INF **	** INF **
	379810	Local Deliveries	21900		71	4911	4000	2479
		%			0.0	0.0	0.0	0.0
MAIN		Maximum Throughput	175000		11088	73920	60480	1118880
	197379	Local Deliveries	11650		36	2500	2030	1389
		%	6.7		0.3	3.4	3.4	0.1
	48788	Trunking Outwards	11150					
		%	6.4					
	197379	Total Throughput	22800		36	2500	2030	1389
		%	13.0		0.3	3.4	3.4	0.1
MANCHESTER		Maximum Throughput	** INF **		** INF **	** INF **	** INF **	** INF **
	116931	Local Deliveries	8450		29	1505	1136	767
		%			0.0	0.0	0.0	0.0

Product Flows

Product Totals for each delivery depot are displayed for all Product Types used. The maximums are as set on each depot screen, with the appropriate actuals, and percentage of maximum values. Any actuals higher than maximums may be seen as a percentage value greater than 100. As with the Resources print all details are sub-divided into Local Work (Deliveries, Collections and Trunking) and Carrier work to be completed by non-fleet resources. The Total Throughput line summarises all the activities.

Total PRODUCT Flowing Through Each Depot

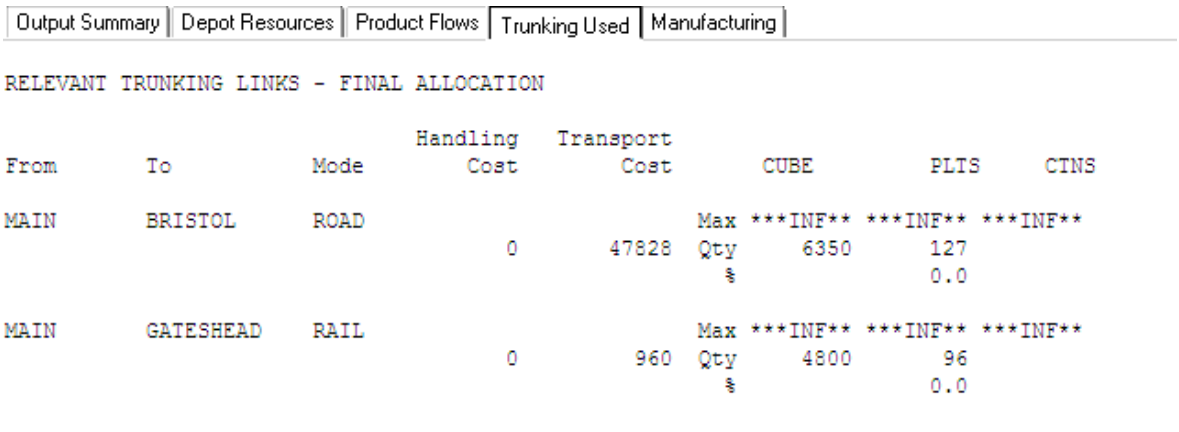
Depot		PLTS	CTNS
BRISTOL	Maximum Throughput		
	Local Deliveries	127	
	%		
GATESHEAD	Maximum Throughput		
	Local Deliveries	96	
	%		
GLASGOW	Maximum Throughput		
	Local Deliveries	73	
	%		
HATFIELD	Maximum Throughput		
	Local Deliveries	438	
	%		
MAIN	Maximum Throughput	** INF **	
	Local Deliveries	233	
	%		
	Trunking	223	
	%		
	Total throughput	456	
	%		
MANCHESTER	Maximum Throughput		
	Local Deliveries	169	
	%		

List of Calls Allocated by Depot

By depot this will print all calls currently belonging to that depot, listing - call ident, grid reference, name and address details, supply chain no., old depot and Time and Distance from the depot.

Trunking Used

For any Supply Chain links that were set up and included in the analysis, a summary of the product totals allocated to each link is provided.



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Manufacturing

In the Manufacturing tab summary details for each product are given by each source depot of a supply chain.

SUPPLY	OXFORD			
CUBE	CUBE Explicitly Defined	Q=	12626	Max= ***INF***
KGS	KGS Explicitly Defined	Q=	34	Max= ***INF***
CASE	CASE Explicitly Defined	Q=	345	Max= ***INF***

Printing Standard Output Reports in Warefrom/Whatinsq

Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports.

To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

Exporting Call Information from Warefrom

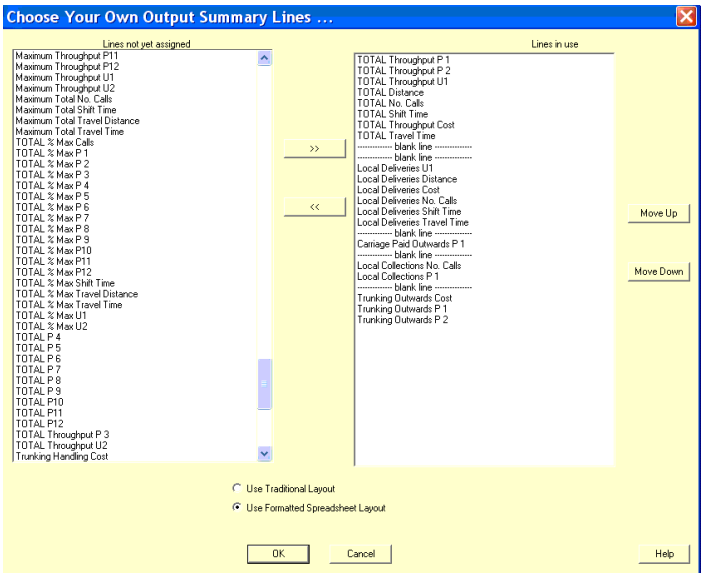
The file ALLOCS.TXT is produced every time Whatinsq mode is activated or the Warefrom option is run. The fields are as follows and are all comma separated - Account No , Tag , Name , Address1 , Address2 , Postcode , Easting , Northing , Longitude , Latitude , Stem Time , Stem Miles , Supply Chain No , Product Code , New Depot , Old Depot , Products 1-12 , Frequency , Total Visits. New and Old depot information is applicable to Warefrom runs; where the call is re-allocated to a new depot location. Stem Times and Mileages are given to the owning depot. Product Code is for multiple models. The file is over-written every time the option is taken.

Customised Output Headings

A user defined output summary section is available from the Style menu option – Warefrom Output Headings.

The dialog can be used to set the required layout and columns and positions for the Depot Resources summary panel (which replace both traditional depot resources and product flow reports). Select the option by clicking the LHB on the mouse to display the dialog window. The selection options can be used to define the layout style preferred : either using the traditional layout (see above), or the formatted spreadsheet choice.

The spreadsheet layout will display information in rows of cells. If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel. The available column headings are displayed in the left hand selection box and include totals such as Total Throughput for each product, Local deliveries Cost, Trunking Outwards quantities and so on.



Output Summary | Depot Resources | Trunking Used | Manufacturing

	HATFIELD	NDC	NW	TOTAL	Units
TOTAL Throughput P 1	4930	11480	3560	19970	BOX
TOTAL Throughput P 2	790	1860	600	3250	CASE
TOTAL Throughput U1	5720	13340	4160	23220	PALLETS
TOTAL Distance	3157	3330	5280	11767	miles
TOTAL No. Calls	77	51	59	187	
TOTAL Shift Time	6085	5106	7727	18918	mins
TOTAL Throughput Cost	612726	513094	775489	1901309	
TOTAL Travel Time	5146	4458	7023	16627	mins
Local Deliveries U1	5210	3930	3870	13010	PALLETS
Local Deliveries Distance	3000	3330	5144	11474	miles
Local Deliveries Cost	583132	513094	753347	1849573	
Local Deliveries No. Calls	74	51	57	182	
Local Deliveries Shift Time	5790	5106	7507	18403	mins
Local Deliveries Travel Time	4899	4458	6835	16192	mins
Carriage Paid Outwards P 1	160	70	60	290	BOX
Local Collections No. Calls	3	0	2	5	
Local Collections P 1	300	0	200	500	BOX
Trunking Outwards Cost	0	221798	0	221798	
Trunking Outwards P 1	0	7990	0	7990	BOX
Trunking Outwards P 2	0	1340	0	1340	CASE

With this report type, an overall total will appear as the last column preceded by a sub-total for each depot applied. Finally the units column will display the relevant description names employed for each product and vehicle unit.

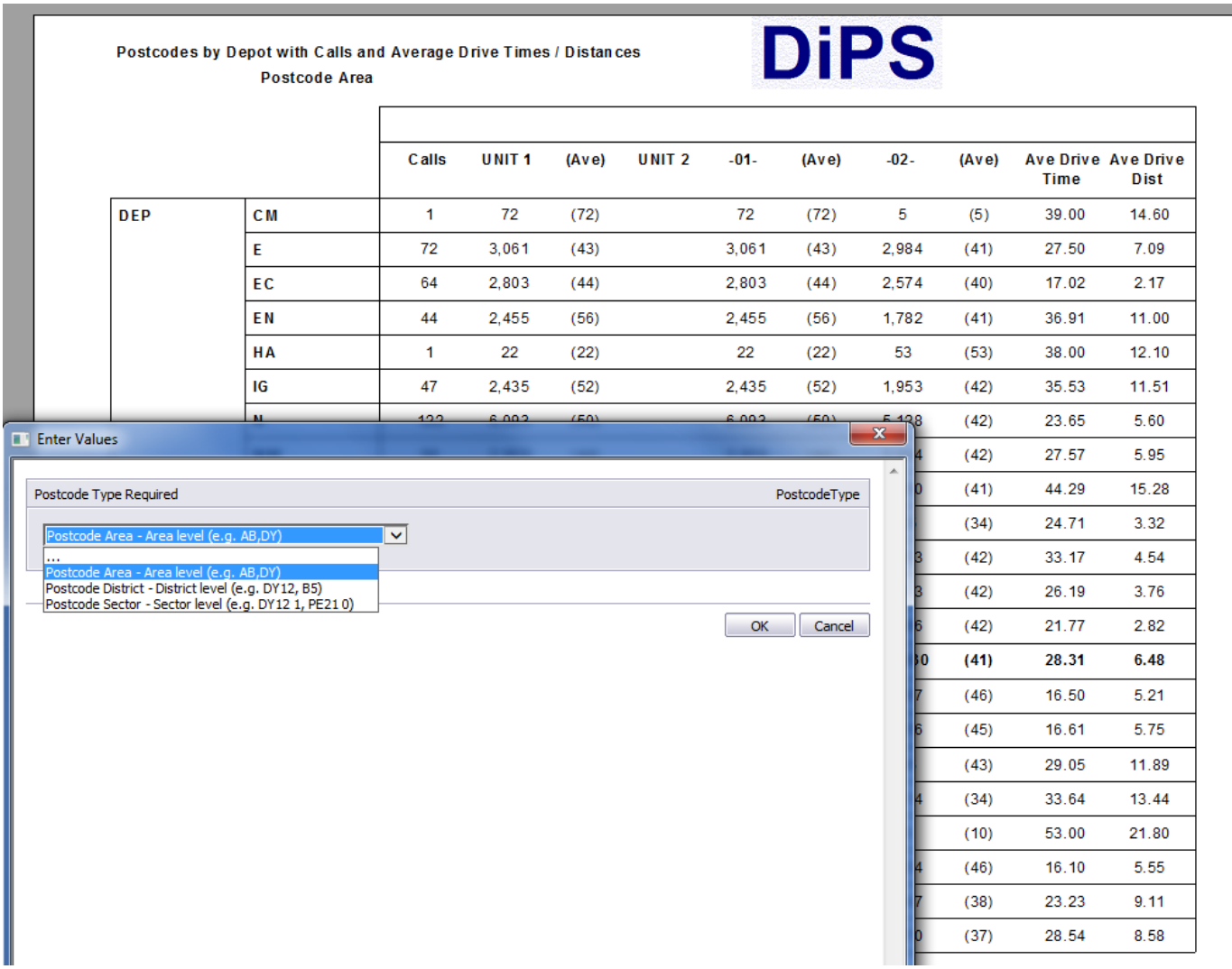
When using the Spreadsheet styles, the Summary information can also be printed or exported into spreadsheet or database from the menu (accessed by clicking the right hand mouse button and choosing Screen Data Export or Print).

Using Customised Reports for Postcode Analysis in Warefrom

The report file “DiPS Warefrom Analysis” offers the ability to summarise information such as Units/Products and Driving Times to a defined Postcode level from each depot. From this information it is possible to see quickly how much is to be delivered to an area and how far it is from that depot.

An initial dialog is used to select the postcode level required for the report. The 3 options are Postcode Area (e.g. AB, DY), Postcode District (e.g. DY12, B5) or Postcode Sector (e.g. DY12 1, PE21 0) and the report will then display the call details by depot at that level.

The table lists each postcode on a separate line with columns for Calls (total in that postcode), Total and Average figures for Vehicle Units and Products, and Average Drive Time and Distances to that Postcode from the depot in question. The Average figures will provide an indication of drop size within the area.



		Calls	UNIT 1	(Ave)	UNIT 2	-01-	(Ave)	-02-	(Ave)	Ave Drive Time	Ave Drive Dist
DEP	CM	1	72	(72)		72	(72)	5	(5)	39.00	14.60
	E	72	3,061	(43)		3,061	(43)	2,984	(41)	27.50	7.09
	EC	64	2,803	(44)		2,803	(44)	2,574	(40)	17.02	2.17
	EN	44	2,455	(56)		2,455	(56)	1,782	(41)	36.91	11.00
	HA	1	22	(22)		22	(22)	53	(53)	38.00	12.10
	IG	47	2,435	(52)		2,435	(52)	1,953	(42)	35.53	11.51
									(42)	23.65	5.60
									(42)	27.57	5.95
									(41)	44.29	15.28
									(34)	24.71	3.32
									(42)	33.17	4.54
									(42)	26.19	3.76
									(42)	21.77	2.82
									(41)	**28.31**	**6.48**
									(46)	16.50	5.21
									(45)	16.61	5.75
									(43)	29.05	11.89
									(34)	33.64	13.44
									(10)	53.00	21.80
									(46)	16.10	5.55
									(38)	23.23	9.11
									(37)	28.54	8.58

As normal, use the toolbar icons to move around the pages of the report and Zoom or Find Text. Hover over the buttons to display help. Icons can also be used to Toggle a Tree View and Print or Export the report.

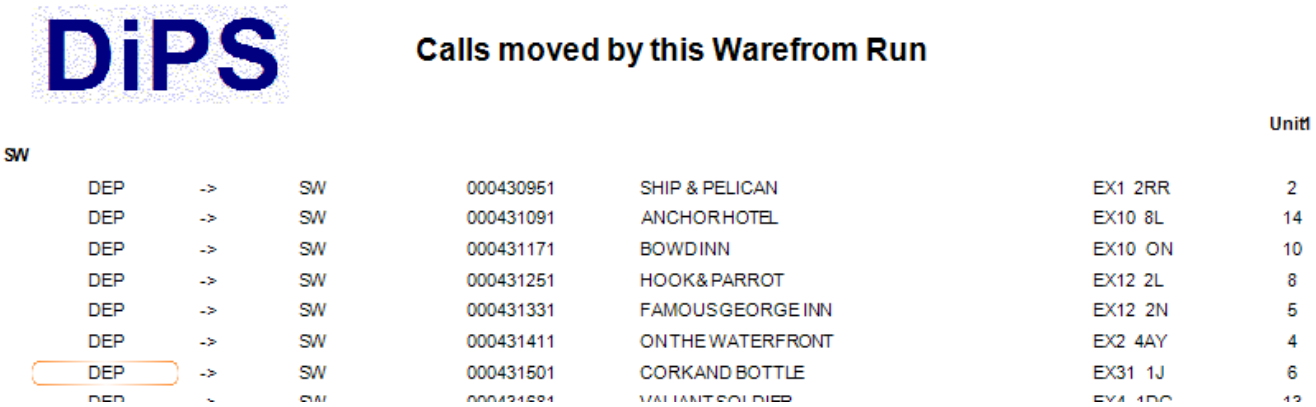
Exported data can be passed into Excel, Adobe and Word formats using the Save as File type option. Spreadsheet options will allow further analysis on the data as required.

Press the APPLY button just before the Warefrom, Customised Reports option is run and the report will employ the latest depot boundaries and call allocation as they stand at that point in time.

New Custom Reports for Warefrom

A number of new basic reports have been developed initially for the new Custom reports facility in Warefrom. All reports can be accessed when the Choose Report button is clicked. Details of the available functionality are listed below :

DiPS Calls Moved by Warefrom - is designed to be run just after a Warefrom run and will provide details for all calls that have moved depot as a result of the last Warefrom run.



DiPS

Calls moved by this Warefrom Run

							Unitl
SW							
	DEP	->	SW	000430951	SHIP & PELICAN	EX1 2RR	2
	DEP	->	SW	000431091	ANCHOR HOTEL	EX10 8L	14
	DEP	->	SW	000431171	BOWD INN	EX10 ON	10
	DEP	->	SW	000431251	HOOK & PARROT	EX12 2L	8
	DEP	->	SW	000431331	FAMOUS GEORGE INN	EX12 2N	5
	DEP	->	SW	000431411	ON THE WATERFRONT	EX2 4AY	4
	DEP	->	SW	000431501	CORK AND BOTTLE	EX31 1J	6

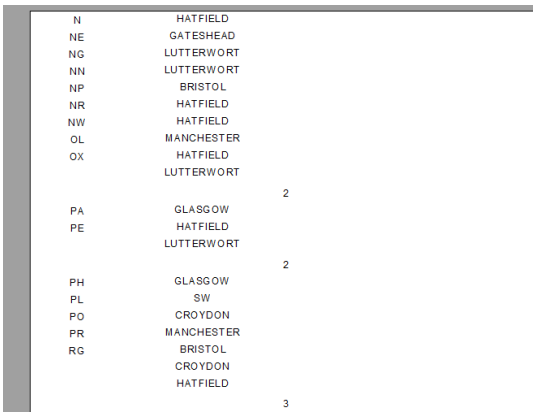
"DiPS Warefrom Calls by Depot" offers a list of all calls belonging to each depot in turn with Account No., Name, Postcode, Quantity and Drive Time/Distance from the depot

DiPS

Call Details by Depot

							Unitl	Drive Time	Distance
BRISTOL	10031	Superstore	Theberton Airfield	EXETER	Devon		446	102	80.7
BRISTOL	10034	Superstore	Winship Ind Est	WORCESTER	Worcestershire		448	74	58.5
BRISTOL	10133	Superstore	Langford Lane	YEOVIL	Somerset		332	94	59.6
BRISTOL	10076	Branch	Nile Street			BA1 1NE	450	40	24.7
BRISTOL	10032	Branch	Foul Lane	Bournemouth		BH1 1EW	329	151	87.9
BRISTOL	10183	Superstore	Sinks Street	Poole		BH15 1SS	324	140	83.5
BRISTOL	10608	Branch	Atlantic Street	Bristol		BS1 3XF	870	21	12.4
BRISTOL	10191	Branch	c/o Bromfield Sand & Gravel Co	Weston Super Mare		BS23 1HL	385	37	23.6
BRISTOL	10602	Branch	St Albans Road	Cardiff		CF14 DQ	942	66	41.2
BRISTOL	10174	Franchise	Easton Lane	Weymouth		DT4 8PN	198	146	88.0

"DiPS Warefrom Split Postcodes" uses the postcode choice dialog to select the postcode level required (Postcode Area (e.g. AB, DY), Postcode District (e.g. DY12, B5) or Postcode Sector (e.g. DY12 1, PE21 0) and the report will then display by postcode and depot name if more than one call with the same postcode level is allocated to different depots. As an example see OX postcode area below that is split between HATFILED and LUTTERWORT depots.



N	HATFIELD
NE	GATESHEAD
NG	LUTTERWORT
NN	LUTTERWORT
NP	BRISTOL
NR	HATFIELD
NW	HATFIELD
OL	MANCHESTER
OX	HATFIELD
	LUTTERWORT
	2
PA	GLASGOW
PE	HATFIELD
	LUTTERWORT
	2
PH	GLASGOW
PL	SW
PO	CROYDON
PR	MANCHESTER
RG	BRISTOL
	CROYDON
	HATFIELD
	3

"DiPS Warefrom by Call Tag" uses the tag fields of each call and produces a table by depot with sub-totals for the number of Calls (total by tag), Total and Average figures for Vehicle Units and Products, and Average Drive Time and Distances to calls with that tag from the depot in question. The Average figures will provide an indication of drop size for each drop classification.

DiPS

Call Tag Fields Analysed by Depot

		Calls	UNIT 1	(Ave)	-01-	(Ave)	-02-	(Ave)	-03-	(Ave)	Ave Drive Time	Ave Drive Dist
BRISTOL	3550	45	705	(16)	2530	(56)	140	(3)	265	(6)	115.11	88.27
	3666	1	11	(11)	20	(20)	1	(1)	8	(8)	105.00	84.60
	3950	12	179	(15)	750	(63)	31	(3)	58	(5)	133.00	100.84
	BR	9	2822	(314)	447	(50)	46	(5)	2680	(298)	62.44	38.99
	FR	5	1502	(300)	230	(46)	23	(5)	1380	(276)	103.40	69.64
	SS	8	2347	(293)	360	(45)	37	(5)	2160	(270)	94.00	66.96
	Depot Total	**80**	**7,566**	**(95)**	**4,337**	**(54)**	**278**	**(3)**	**6,551**	**(82)**	**108.90**	**81.27**
CROYDON	BR	12	3446	(287)	542	(45)	55	(5)	3250	(271)	59.33	35.15
	FR	17	4726	(278)	737	(43)	75	(4)	4420	(260)	51.71	26.75
	SS	11	3121	(284)	485	(44)	51	(5)	2910	(265)	70.82	43.55
	Depot Total	**40**	**11,293**	**(282)**	**1,764**	**(44)**	**181**	**(5)**	**10,580**	**(265)**	**59.25**	**33.89**
GATESHEAD	BR	1	188	(188)	30	(30)	3	(3)	180	(180)	32.00	19.00
	FR	3	730	(243)	110	(37)	11	(4)	660	(220)	90.67	56.87
	SS	4	1371	(343)	215	(54)	22	(6)	1290	(323)	30.00	15.45
	Depot Total	**8**	**2,289**	**(286)**	**355**	**(44)**	**36**	**(5)**	**2,130**	**(266)**	**53.00**	**31.43**

"DiPS Warefrom Product by Postcode" uses the postcode choice dialog to select the postcode level required (Postcode Area (e.g. AB, DY), Postcode District (e.g. DY12, B5) or Postcode Sector (e.g. DY12 1, PE21 0) and the report will then display by postcode totals for calls, vehicle units an each of the 12 product groups.

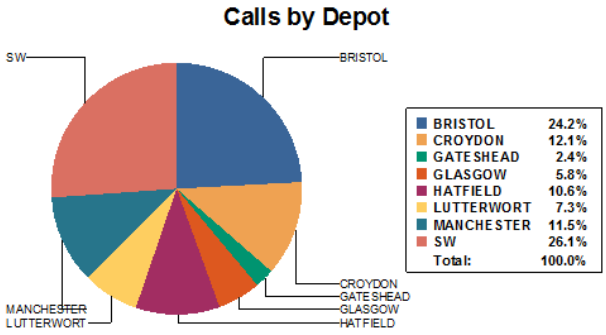
DiPS

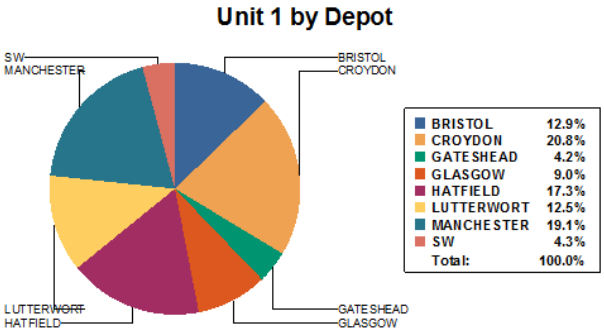
Postcodes by Depot with Product Totals

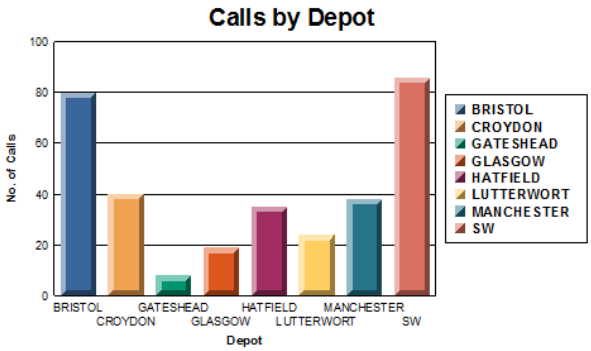
Postcode Area

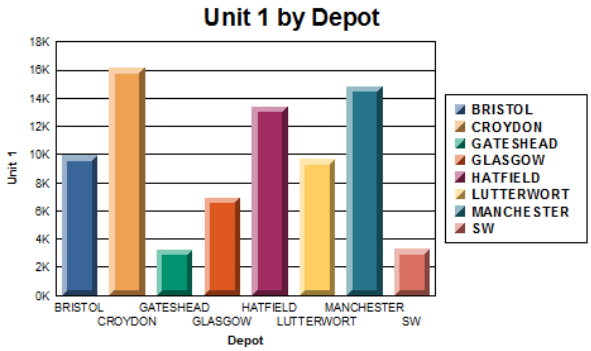
		Calls	UNIT 1	UNIT 2	-01-	-02-	-03-	-04-	-05-	-06-	-07-	-08-	-09-	-10-	-11-	-12-
DEP	B	178	2724	1091	9932	685	1091	1113	0	0	0	0	0	0	0	0
	BA	26	417	155	1592	92	155	181	0	0	0	0	0	0	0	0
	BS	136	2151	851	7845	532	851	885	0	0	0	0	0	0	0	0
	CF	38	545	229	1994	117	229	228	0	0	0	0	0	0	0	0
	CV	66	1047	419	3773	244	419	424	0	0	0	0	0	0	0	0
	DE	39	628	246	2282	148	246	249	0	0	0	0	0	0	0	0
	DY	35	593	203	2397	134	203	266	0	0	0	0	0	0	0	0
	GL	40	600	232	2206	159	232	254	0	0	0	0	0	0	0	0
	HR	3	42	11	210	9	11	22	0	0	0	0	0	0	0	0
	LE	79	1254	515	4327	305	515	483	0	0	0	0	0	0	0	0

"DiPS Warefrom Charts" is a more graphical report showing pie charts and bar charts for overall calls and vehicle unit totals by depot (giving the % split by each depot in the model. By each individual depot it is also possible to see the range of calls by drive time (stem time from depot) and vehicle units 1 in a similar fashion.





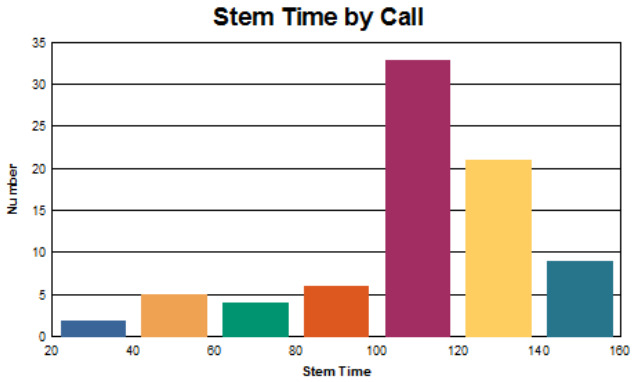


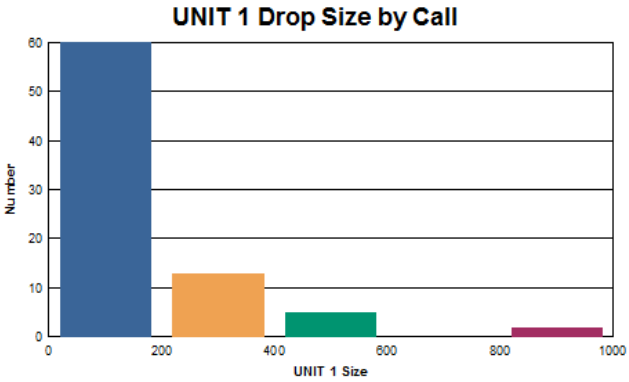


Warefrom Depot Charts

DiPS

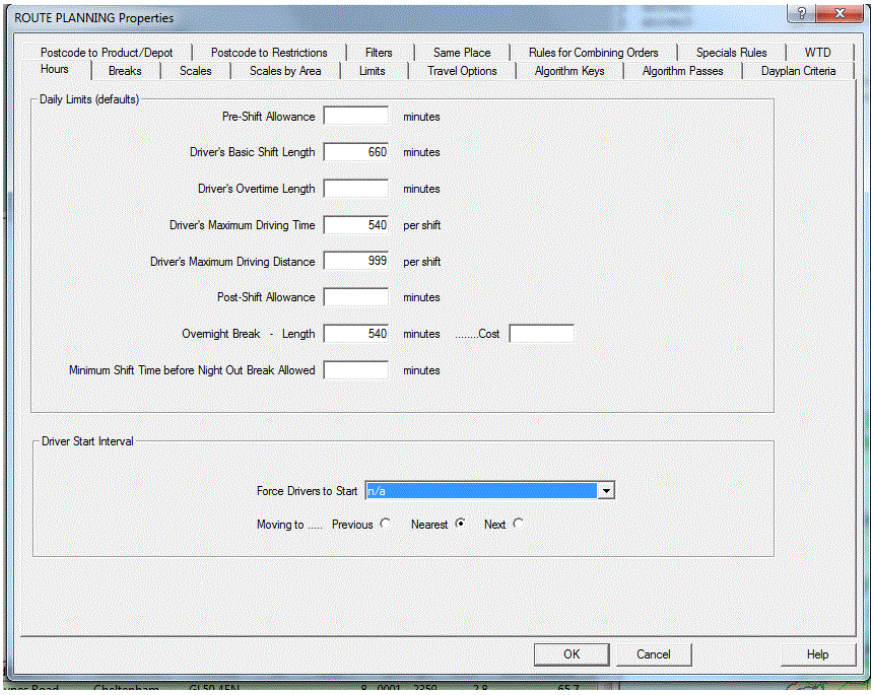
Depot - BRISTOL





Routes Menu – Set Scheduling Rules and Route Vehicles

Parameters for Routing Modules



The Routes menu option provides a means of planning vehicles to meet delivery criteria. Routing control parameters are available to influence the type of routes produced by the program, normally defined using the Routes , Parameters menu option which reveals the Route Planning Properties notebook. For example Scales settings govern the general shape and detour of routes, Hours govern driver's shift and driving formats, and Limits settings govern trip and call maximum limits.

Hours

Pre-Shift and Post-Shift Allowances - The Pre-Shift Allowance time which is specified in minutes provides for the time between a driver starting his working day and actually leaving the depot. The value may be used to reflect time taken to check the vehicle is in order mechanically, to collect delivery documentation from offices, or to re-fuel for example. The time appears on route output prints as depot time before the first trip. It will be added to any additional depot working time that has been set. The Post-Shift Allowance time which is specified in minutes provides for the time between a driver finishing his working day and actually leaving the depot. The value may be used to reflect time taken to check the vehicle is in order for the following day (to re-fuel), to de-brief, or to return delivery documentation to offices for example. The time appears on route output prints as depot time after the last trip. It will be added to any additional depot working time that has been set. Note: Both Allowance times are taken off the maximum shift time available for a route. It is not an extra time for addition onto the working day.

The Force Drivers to Start fields will make all route start times in DiPS to be at a specific fixed time within the hour. Three values may be chosen from the selection box: On the Quarter Hour, On the Half Hour, or on the Hour and will modify every route start time to be at 15minute, 30 minute or 60 minute intervals. As an example, using the parameter “On the Quarter” Hour with a depot opening or driver class start time of 07:00 will lead to routes departing at 07:00, 07:15, 07:30, 07:45, 08:00 and so on. The “Moving To” selection enables control of the modified start time. Using “Previous” will move the start time backwards to lie at the previous interval (e.g. an original start time of 08:22 would be modified to 08:15), “Next” will move the time forwards and re-align any call arrival times accordingly (08:22 would be modified to 08:30), whilst “Nearest” would use the nearest interval to the original time (08:21 would be modified to 08:15 and 08:23 would go to 08:30). This start time logic is employed throughout the program: within the automated planning routines such as Dayplan or Vanguard, whilst routes are being manually changed in Egotrip mode and also when any new manual routes are created.

Driver's Basic Shift Length value is intended to establish a normal maximum working shift for any driver from any depot entered into a scheduling program. Where the route is extended into 2 or more days the maximum shift time will simply be multiplied accordingly, with a 660 minute max shift being increased to 1320 minutes for a 2 day route, and if Driver's Overtime is used this value may be added to the maximum shift time if conditions are acceptable. It is useful to note that as a maximum limit this should not represent the normal working day but should be a value just in excess of this norm to enable the planning program more flexibility in scheduling. Just because the maximum has been set at a limit does not imply that all routes planned will be for that time. It is likely that an average overall time utilisation value for an acceptable solution will in the region of 90 - 95% of this maximum limit. The maximum shift time also includes any Pre-Shift Allowance or driver's Break. These values are taken as been part of any working shift and are NOT additional times. As the basic shift time is inclusive of any break, low shift times and high break times severely restrict the route building process. This constraint is also greatly magnified if call premises are closed for lunch. In practice it has been found that either a break is specified or lunchtime closing is used but not both since in practice they add together instead of cancelling each other out.

Driver's Overtime Length in minutes may be specified to be added onto the maximum shift time if parameter criteria are met. The time is intended to be **added to long distance routes** to allow for more shift time to deliver goods once the vehicle has arrived in a remote area. It cannot be used automatically in the algorithm to extend local routes to provide more time to deliver deferred local calls. The Maximum % Shift Utilisation (1st Insertion) is used to define the % of basic shift time that must be exceeded by the first call if the route is to be allocated overtime. The default value is 85 %. As an example for a maximum shift of 10 hours duration if the first call on the route was 3 hours driving away from the depot and took 30 minutes to unload, the combined shift time of 6 hours 30 minutes, being 65 % of the available shift time (i.e. less than 85 %), would not lead to any overtime being added. However a combined first drop time of 9 hours would mean the overtime value (say 120 minutes) being added to produce a new maximum shift time of 12 hours. In such a way the lower the percentage figure is the more likely the planning program is to add overtime. If overtime is used and multi-day routes are being planned the basic decision making process remains the same but the maximum shift time compared to the time taken for the first drop is inclusive of the overtime value set; that is the shift time used would have to be greater than the sum of the basic maximum shift plus the overtime value for the program to extend the route to another day.

Driver's Maximum Driving Time limit is used to reflect legislation concerning driving hours for heavy goods vehicles. The default time of 540 minutes per shift is representative of this factor. It will limit the amount of driving within any shift to the level indicated, where a driving time limit is reached before a shift time limit the route building process will cease, and vice-versa. In the case of multi-day routes each shift of each day will have the same driving time limit.

Driver's Maximum Driving Distance will limit the distance traveled within any shift to the level indicated, where a driving distance limit is reached before a shift or drive time limit the route building process will cease. In the case of multi-day routes each shift of each day will have the same driving time limit. The default value of 999 miles or kilometers is designed to have negligible effect. Reduce the value as required.

Driver's Overnight Break Length parameter is used to ensure that there remains enough time between the finish of one shift on a multi-day route and the start of the next shift. This is particularly important in instances where the whole of the first day is taken up in driving to a delivery area to ensure that the vehicle is not set to start delivering as soon as calls open on the following day without taking adequate rest. The time value is specified in minutes and must be used if multi-day routes are envisaged. In normal circumstances use 540 minutes for best results.

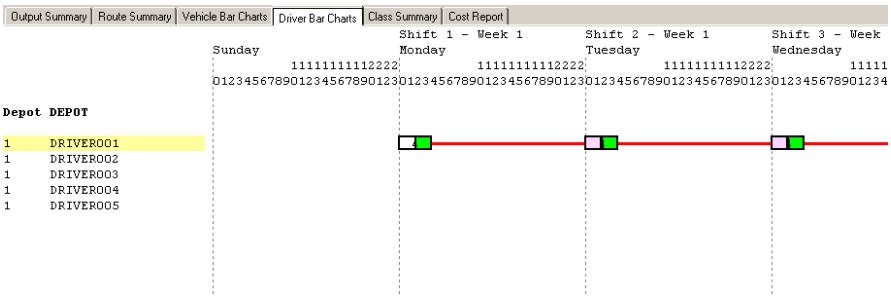
Driver's Night Out Cost can be specified in whole units of cost for whatever costing system is in use. Decimal places will be ignored. The cost is added to the route cost calculations, which might be made up of Vehicle Costs, and Driver Wage Schemes whenever night outs are taken.

WTD - Working Time Directive

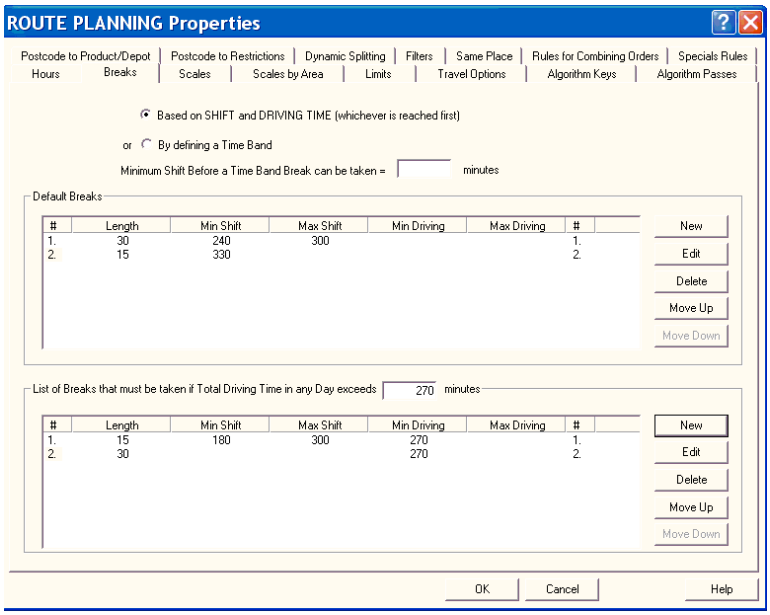
Working Time Directive parameters may be set in DiPS as default on the Route Parameters' WTD page or specifically for individual drivers or driver classes in Depot Properties. They are intended to work in conjunction with each other to enable planning programs to produce a schedule that reflect any current or prospective legislative working practices that may be in place within a company's operation. Planning programs will not violate any parameters input, and any manual intervention in the plan will produce errors indicated by yellow highlighting in Route panels, in the Summary section, and in the Driver Bar Charts as detailed below.
The parameter **No. Days in WTD Period** is now used to limit the values defined by setting the number of days to be analysed. When used with driver statistics in daily planning, this is the number of days in the past that any statistics will be considered (i.e. if set at 7, any statistics more than 7 days ago will be ignored).
The **Maximum Number of Days in WTD Period** is set to limit the number of distinct days a driver can work within the planning period. For example if the depot he operates from is open 7 days per week (Sun-Sat inclusive) if this parameter is set to 5, the standard driver will work for any 5 days out of 7. Bank default values in all fields in this section infer no limit.
Maximum Shift / Driving Time in WTD Period is intended to establish a normal maximum working week or driving time alone in minutes for any driver from any depot entered into a scheduling program.
The Minimum Shift Time remaining in WTD Period to start another day field is intended to stop short routes being created by planning programs where a few hours may be left at the end of the working period. For example, if a driver has 2 hours left at the end of a week from his maximum 42 hours in DCP after 4 planned days of 10 hours each, setting this parameter at 180 mins would stop a route being created with the remaining 2 hours.
Maximum Cumulative Shift or Driving Time parameters allow a maximum time to be set over a period of days to ensure that a driver is not working for more than an acceptable time over the set number of days. Define both the consecutive days as a number and then the maximum shift. For example 2 consecutive days and 1000 minutes would allow consecutive shifts of 600+400 or 500+500, but not 600+540 or 580+580.

Errors

On Route Summary Section errors are displayed in yellow. On Driver Bar charts errors are displayed in route boxes for each day as appropriate – green = total shift exceeded, pink -= maximum no. of days exceeded, red links between routes = cumulative shift over days exceeded.



The use of driver classes (set on a depot parameters page) will mean that the parameters provided for that class are used rather than the general limits set here.

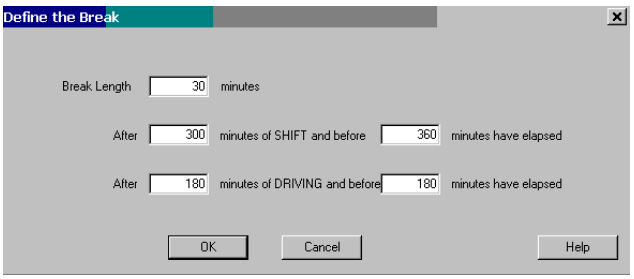


Breaks

The Driver's Break Length options are intended to reflect legislation (including Working Time Directive) concerning driving hours for vehicles and break allowances within shifts. Up to 6 breaks may be recorded for a single shift, with each required break being set up individually. Breaks will repeat for on subsequent days for routes spanning multiple days. Al breaks are accounted for within the maximum shift time limit - NOT added onto the maximum shift time allowable.

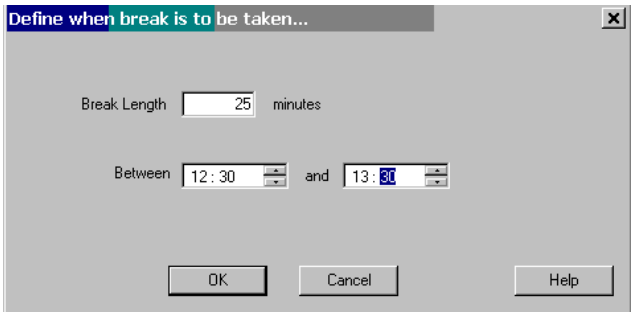
Two methods of defining a period may be used. Use the radio button option above the list to set either (a) limits for shift and driving time in minutes between which the break must be taken, **OR** (b). a time band during the day using the two hhmm fields (for example between 1200 and 1330).

Modifying the basic break parameters will lead to the re-calculation of breaks in all existing routes.



To create a new break, click on New and fill in the relevant fields followed by OK. To delete or modify a break highlight the appropriate number and click either Delete or Edit. Multiple breaks will always be sorted in ascending time order after input.

For a value to be taken within shift or driving, it is possible by defining the initial **After** time to set the earliest point the break will be taken and combine this with the **Before** time to set the time when the break must be completed. Values can be input for shift, driving or both shift and driving; and the break is taken when the **first** of these criteria are met.



All individually defined breaks are considered valid and may be taken within a route. Breaks consisting of both shift and driving limits are taken only once and considered satisfied once the first drive or shift limit is passed. Please note that if a driver's total shift or driving does not exceed the BEFORE time, this break will not be taken as the route is deemed too short.

In the case of (a) shift/driving limits, it is possible if required to define 2 distinct break settings dependent upon the total driving (travel) time for a route. Normally only the default breaks are used, but if a driving time value is defined within the second section it is possible to input another set of break values that are only taken whenever the route travel time exceeds the value defined and will be used instead of the default breaks. This can be used for example in instances where 2 breaks are required but driving legislation says that a driver must take his longer break after the shorter one if he drives over 4.5 hours. As in the example above, the breaks are no longer taken as 30 minutes followed by 15 minutes, but rather 15 minutes followed by the subsequent 30 minute break. The route displays will show such breaks as Type 1 and Type 2.

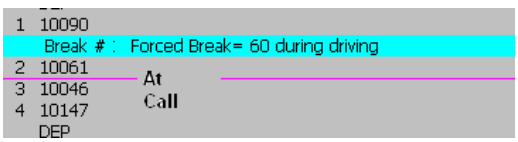
For a break to be taken in a time window, the dialog provides merely a break length in minutes and two between times to be set to govern the earliest time a break will be considered and the latest time that a break may be started. A further parameter – Minimum Shift Time Before a Time Band break may be taken can also be employed ; preventing a driver starting at 11:45am and taking a break at 12:30.

The break will be dynamically positioned in the route to minimize shift time. An additional break time line is shown to display the amount of break taken and position within the route (similar to a call or order). The break will display the minutes taken, and point in the day (EAT) the break is due. Night-Out lines will also be displayed for multiple day routes in a similar fashion. Any changes to the route will cause breaks to be re-calculated. Breaks can also be re-calculated using the menu option on individual route panels or for all routes using the Routes menu option – *Recalculate Breaks in all Routes*. Modifying the basic break parameters will lead to the re-calculation of breaks in all existing routes. As the basic shift time is inclusive of any break, please note that low shift times and high break times severely restrict the route building process.

Note: It is important to remember that if the usual Delivery Windows are Arrival Times only parameter is not set, the unloading time window available at any call point must be greater than or equal to the calculated Unloading Time + Break Length for the call to be scheduled. Otherwise it will be deferred in the routing process with reason code -3 (call is never open).

Dragging Breaks

Breaks can now be moved within a route using the RHB (similar to any other call or order).

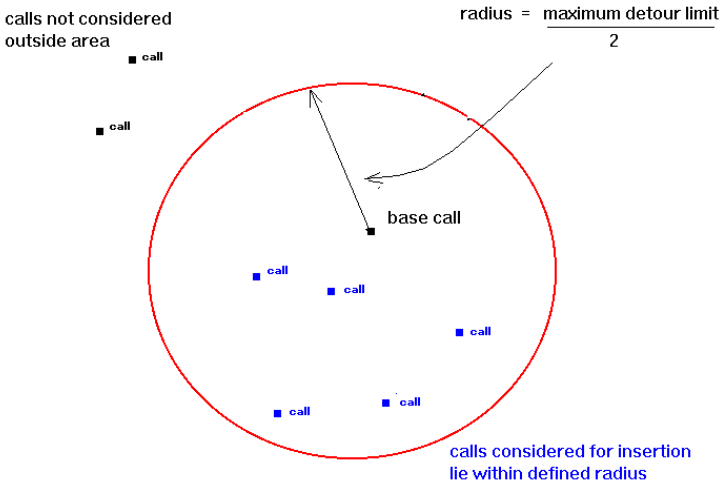


When moving breaks a purple line marker showing **At Call** or **In Travel** will indicate at what point the break is to be taken. The route will be re-calculated when a break is dropped in a new position. Errors such as Too Late or Too early are shown when set parameters for break times are violated. To re-set breaks back to default positions, click Re-calculate Breaks from the route panel menu.

Night Outs can also be moved in the same fashion. Illegal moves will be prevented (e.g. placing a break after a night out).

Scales

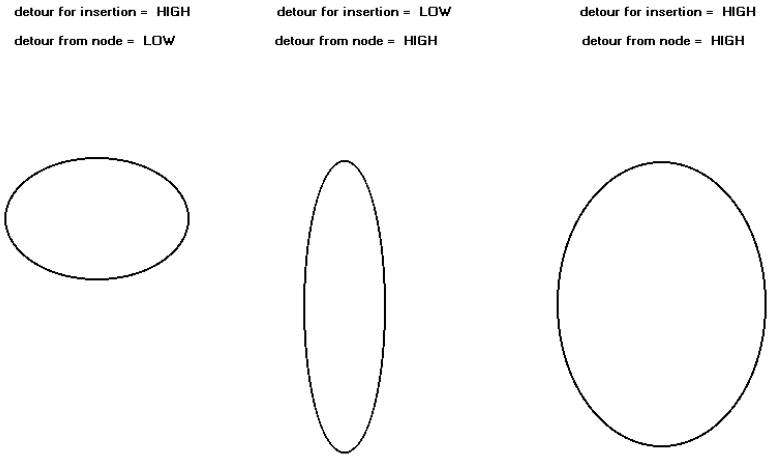
The primary function of the SCALES MACRO is to dictate to the planning program algorithm the construction of the routes. The Detour and Time from Node limits will dictate the basic width and length of the shape, whilst the percentage values for Load and Shift Utilisation combine together to govern decisions such as new trips or multi-day routes. The parameters expressed, along with the VANGUARD ALGORITHM factors, have most control over the acceptability of the output produce by the automatic scheduling tools. In such a way it may be possible with a little thought beforehand to set guide-lines for routing that will match the data in question. As an example a small fleet covering an area would need a higher mileage between drops than a larger fleet in the same area and so higher detour limits may be required; or vehicle routes in a study with a high density of drops in Inner London would need smaller detours than for a nationwide study of say 100 delivery points. It has been found that the default settings will suffice for many studies and so major changes are often unnecessary. Whenever changes are made try to keep changes simple so that the effect of parameter movements is apparent rather than relying on a random selection of changes to stumble upon the correct result by accident.



Maximum Detour Limit parameter is used by the route scheduling programs such as VANGUARD to test the proximity of a delivery or collection point to each link of a route that the program has started. If the extra travel time is less than or equal to this value then the insertion will be considered (subject to all other restriction and parameter criteria).In simple terms this parameter may be considered as an attempt by the program to identify call points within a tolerable drive time area of the first call placed on a route. These calls may also then be placed on that route. This process is known as the LOLLIPOP phase. It is important to remember that the maximum detour time value used will define the WIDTH of the circle and NOT the radius, which is represented by the detour limit divided by 2. The lollipop insertion phase will continue either until all calls within the area have been considered (and added to the route if possible) or a pre-defined limit of the number of failed insertions has been reached. This number is governed by the Maximum Number of Lollipop Failures parameter, and takes account of all reasons why a call cannot be added to the route in question. Common reasons include time restrictions, vehicle access, vehicle load constraints, product mixing ability, and so on. When the lollipop phase is completed for one route a new phase will start for the next. In looking for an insertion point in a route, the algorithm process first identifies the smallest detour possible and then only accepts insertions into links that lie within a defined percentage of this value. The percentage used is defined by the Additional % Tolerance of Detour in Route parameter to prevent the links crossing too much. By increasing or decreasing the value for Maximum Detour, it is possible to affect the shapes of the routes produced by the scheduling program. When used in conjunction with the Maximum Time from Node Call parameter it is possible to produce most shapes as the Maximum Detour for Insertion will determine the width of the "petal" whilst the Maximum Time from Node Call value will govern the length of the petal.

Maximum Time from Node Call parameter is used by the route scheduling programs such as VANGUARD to add drop points to a route that the program has started in the return arc back toward the starting depot point. In simple terms this parameter may be considered as an attempt by the program to identify call points to be used as "fillers" (i.e. calls to be done on the way back to the depot) after the lollipop phase has located all calls within a tolerable drive time area of the first call placed on a route (see the Maximum Detour Limit value). If the extra travel time when compared to the original stem driving time from depot to node call point is less than or equal to this value then the insertion will be considered (subject to all other restriction and parameter criteria). The higher the value is the longer the shape for the routes will appear but beware that values set too high may lead to calls on either side of a depot being placed together on a single trip with the vehicle in effect driving past the depot.

ROUTE SHAPES AND RELATIVE DETOUR SETTINGS



By increasing or decreasing the value for Maximum Time from Node Call, it is possible to affect the shapes of the routes produced by the scheduling program. When used in conjunction with the Maximum Detour Limit parameter it is possible to produce most shapes as the Maximum Time from Node will determine the length of the "petal" whilst the Maximum Detour Limit value will govern the width of the petal.

The detour and maximum time from node when expressed as part of the basic scales macro parameters will apply for all geographic areas in the scheduling run. To express

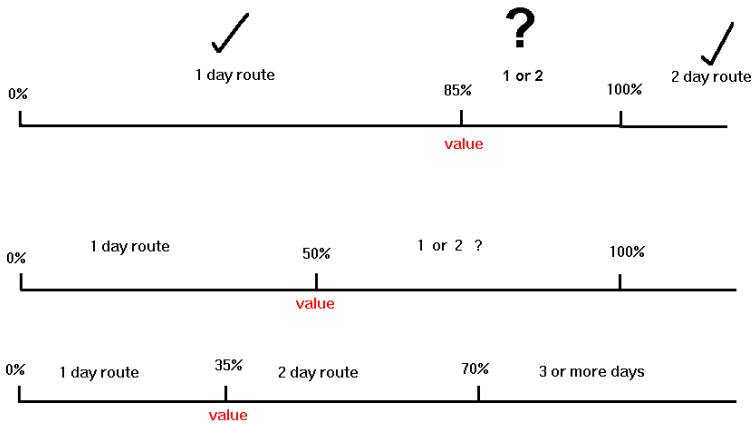
particular values for certain areas of the country the Scales Macro by Area facility may be used to define a boxed area (using mouse or Latitude / Longitude values) with particular values for Maximum Detour for Insertion and Maximum Time from Node Call.

The Minimum % Load Factor is used in conjunction with the Maximum % Shift Utilisation Factors to control the extension of routes to additional days or overtime, and to control the start of new additional extra trips for a route.

The Extension of Routes - There are two scales parameters that work together in the routing programs to control the extension of routes to two or more shifts or to overtime if applicable. These values are the Maximum % Shift Utilisation (1st Insertion) and the Minimum % Load Factor. The Minimum % Load Factor value is used to compare the vehicle utilisation should the route be considered for a possible two-day trip; that is the Maximum % Shift Utilisation (1st Insertion) value has been exceeded but is less than 100% of the shift and so does not automatically require two days. In this case the % load value for UNIT 1 of the vehicle is compared to see if the vehicle load is adequate and so does not warrant a further day to provide more time to utilise the remaining capacity on the vehicle.

Additional Trips on a Route - There are two scales parameters that work together in the routing programs to control the addition of new extra trips onto routes (if applicable). These values are the Maximum % Shift Utilisation (New Trips) and the Minimum % Load Factor.
The Minimum % Load Factor value is used to compare the vehicle utilisation should the route be considered for a possible extra trip; that is the Maximum % Shift Utilisation (New Trips) value has not been exceeded but the spread of drops geographically suggests additional trips may be worthwhile. In this case the % load value for UNIT 1 of the vehicle is compared to see if the vehicle load is adequate If the load is lower than the value the route will not be considered for a return to the depot and re-load and more allowance is given to utilise the remaining capacity on the original trip by use of "filler" deliveries on the way back to the depot. The Load Factor must be satisfied by EACH existing trip of a route before an additional trip can be started for a given route.

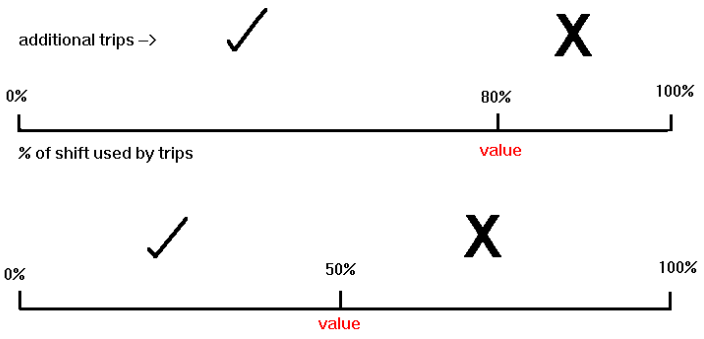
Maximum % Shift Utilisation (1st Insertion) - There are two scales parameters that work together in the routing programs to control the extension of routes to two or more shifts or overtime if applicable. These values are the Maximum % Shift Utilisation (1st Insertion) and the Minimum % Load Factor. The values employed in these two fields are intended to reflect the planning policy decision on nights-out for drivers. The Maximum % Shift Utilisation (1st Insertion) is used to define the % of shift time that may be taken up by the first call if the route is to be accepted as a one-day route irrespective of the vehicle capacity utilisation figure.



The default value is 85 %. As an example for a maximum shift of 10 hours duration if the first call on the route was 3 hours driving away from the depot and took 30 minutes to unload, the combined shift time of 6 hours 30 minutes, being 65 % of the available shift time (i.e. less than 85 %), would lead to a single day trip being established in the routing process. In such a way the lower the percentage figure is the more likely the planning program is to create multi-day routes. This may have an adverse effect if the values are too low as the parameter will use the same criteria in choosing three day routes if the shift exceeds twice the given % figure. In conjunction with this test the Minimum % Load Factor value is used to compare the vehicle utilisation should the route be considered for a possible two-day trip; that is the Maximum % Shift Utilisation (1st Insertion) value has been exceeded but is less than 100% of the shift and so does not automatically require two days. In this case the value is compared to see if the vehicle load is adequate and does not warrant a further day to provide more time to utilise the remaining capacity on the vehicle.

Maximum % Shift Utilisation (New Trips) - There are two scales parameters that work together in the routing programs to control the extension of routes to two or more shifts. These values are the Maximum % Shift Utilisation (New Trips) and the Minimum % Load Factor. The values employed in these two fields are intended to reflect the planning policy decision on extra trips for routes.

The Maximum % Shift Utilisation (New Trips) is used to define the maximum % of shift time that may be taken up by the route in question before the addition of a new trip is to be rejected as a feasible option. The default value is 80 %. As an example for a maximum shift of 10 hours duration if the first trip was of 7 hours duration an additional first or second trip may be considered as an option on return to the depot. The Minimum % Load Factor value is used to compare the vehicle utilisation should the route be considered for a possible extra trip; that is the Maximum % Shift Utilisation (New Trips) value



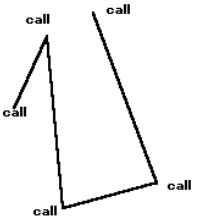
has not been exceeded but the spread of drops geographically suggests additional trips may be worthwhile. In this case the % load value for UNIT 1 of the vehicle is compared to see if the vehicle load is adequate If the load is lower than the value the route will not be considered for a return to the depot and re-load and more allowance is given to utilise the remaining capacity on the original trip by use of "filler" deliveries on the way back to the depot. The Load Factor must be satisfied by EACH existing trip of a route before an additional trip can be started for a given route. In such a way the higher the percentage figure is the more likely the planning program is to create new trips. This may have an adverse effect if the values are too high as the parameter will use all the remaining shift time to complete a small second trip of negligible time and vehicle load.

In terms of turn-round time at a depot between trips the Extra Time parameter may be specified for every depot. This field represents a fixed time in vehicle minutes for turn-round in between trips of the same route, allowing for unloading/re-loading/driver de-brief etc. This may also be used in conjunction with a Depot Rate to allow for variable turn-round time dependent upon product or vehicle unit values. A value of 999 minutes would have the result of effectively disallowing new trips at a depot as the addition of the depot time would cause the maximum shift time to be exceeded. This is a way of limiting certain depots to a single trip whilst enabling others to complete as many trips as the Maximum Number of Trips per shift parameter allowed.

The Maximum Wait Time constraints define the maximum slack time allowable between two calls on a route if the restrictions dictate that the driver must wait at his next call point for access. Different values may be used for when the vehicle is loaded with product or when it is empty (perhaps waiting for a collection). In this way the route planning programs, such as VANGUARD, will not insert calls into routes which cause excess waiting times. The default value for this is 120 minutes but may be changed according to the working practices required. As an example if a driver has adjacent delivery points with differing booked times - one at 0900 and one at 1200, if he has finished at the first delivery by 0930 the maximum wait time parameter of 120 minutes will prevent the 1200 delivery being placed immediately behind the 0900 delivery as the wait time would be 180 minutes. In this instance another insertion into the route may be made as an intermediate step with the vehicle remaining in the area and returning to complete the 1200 booking within the parameter limits set. It should be remembered that wherever possible the scheduling program will attempt to take up all the slack times in any route by using the opening time bands available, and only in cases where it is prevented from doing so by timing constraints will this parameter be effective.

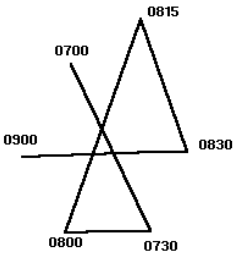
The Additional % Tolerance of Detour in Route value will prevent to varying degrees the criss-crossing of links in any route. The default value of 20 % has been selected to provide for most study types. Higher values can lead to a marked increase in crossing links in a route, which may be useful when attempting to schedule delivery points with a high ratio of booked delivery times or heavily constrained opening times. Values of up to 200 % have been used in these cases.

The value works in conjunction with the Maximum Detour Limit in accepting insertions into links (within the lollipop phase) that lie within this percentage value of the Maximum detour time. Therefore the higher the value is, the wider the possible insertion tolerance.



normal route pattern
with few constraints
and no crossing links

use default value (20%)



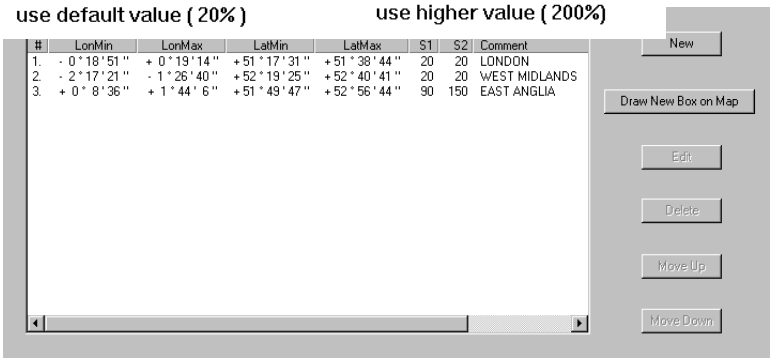
route with booked delivery
times requiring crossing links
for satisfactory route pattern

use higher value (200%)

Scales By Area

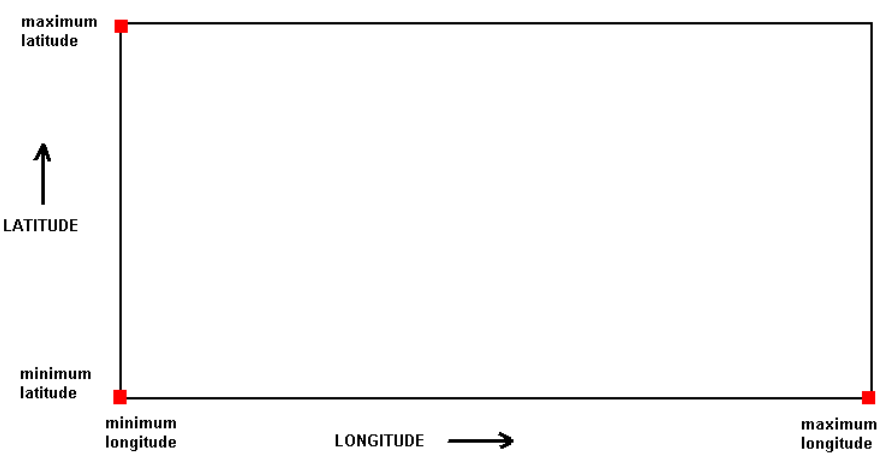
The scales macro detour time parameters will apply for all geographic areas in the scheduling run. To express particular values for certain areas of the country the Scales Macro by Area facility may be utilised in order to specify particular values for Maximum Detour Limit and Maximum Time from Node Call

To add Box areas using the mouse to draw a rectangle , first draw a pop-up window around the area in question on the graphics panel using the LHB. Then after selecting Route Parameters, Scales by Area, click on the Draw New Box on Map button. Type the appropriate values and text comment into the fields provided and then click OK. To change an existing box select it by clicking on the No. or # column and modify the values before clicking OK.



#	LonMin	LonMax	LatMin	LatMax	S1	S2	Comment
1.	- 0 ° 18 ' 51 ''	+ 0 ° 19 ' 14 ''	+ 51 ° 17 ' 31 ''	+ 51 ° 38 ' 44 ''	20	20	LONDON
2.	- 2 ° 17 ' 21 ''	- 1 ° 26 ' 40 ''	+ 52 ° 19 ' 25 ''	+ 52 ° 40 ' 41 ''	20	20	WEST MIDLANDS
3.	+ 0 ° 8 ' 36 ''	+ 1 ° 44 ' 6 ''	+ 51 ° 49 ' 47 ''	+ 52 ° 56 ' 44 ''	90	150	EAST ANGLIA

New
Draw New Box on Map
Edit
Delete
Move Up
Move Down



To remove a box simply select it and then click on the Delete button. After a deletion all boxes are moved up by one. To send a copy of the settings to the default printer use the Print button.

Box areas may be established using the mouse to draw on a pop-up graphics window or Latitude and Longitude readings. To set a Boxed Area using Lat/Lon, locations references are required to set the four corners of the boxed area. Input the values required to specify the corners. Longitudes cover the width of the area, whilst Latitudes cover the height.

Examples of use would include scheduling areas with different patterns of call density (e.g. central London combined with the south coast; or Glasgow combined with the Highlands) where viable route building would necessitate at least two sets of rules. With a single default setting routes would either spread out too much or too little in either patch and so various values are used applicable to the area. Where two boxes overlap the smallest values will apply. Any areas not defined by a boxed grid will use the default settings for maximum Detour Limit and Maximum Time from Node Call as expressed in the main scales macro option.

Limits

Maximum Number of Trips per Shift parameter will set the maximum number of trips allowable in any single route created in a planning program. The value remains in force for multi-day routes also. It will merely control the maximum number of trips planned but will not automatically increase additional trips planned. The default value is 2. Increase this number to allow more trips but remember to pay attention to the SCALES MACRO routing parameters which control trip construction.

Maximum Number of Deliveries per Driver's Shift value will limit the number of deliveries (which in this context can be taken as deliveries or collections) allowable on any single route created in a planning program. A route may be made up of a number of trips with all the drop points on all trips being accumulated. The default value is 99. Reduce the number to limit route building but again beware of possible side-effects, such as two vehicle operating in the same area.

In addition a limit on the Quantity Handled may be placed on the Vehicle Units for any single route (which may be made up of any number of trips). Defining a valid quantity in the field will ensure that no route planned will exceed this value. This value will only apply to the first unit of capacity (<UNIT 1> by default).

Maximum Number of Deliveries per Trip value will limit the number of deliveries (which in this context can be taken as deliveries or collections) allowable on any single trip created in a planning program. A trip may be defined as the vehicle leaving the depot, completing deliveries and/or collections and returning to the depot. A single route may be made up of a number of trips. The default value is 99. Reduce the number to limit route building but beware of possible side-effects, such as two vehicle operating in the same area.

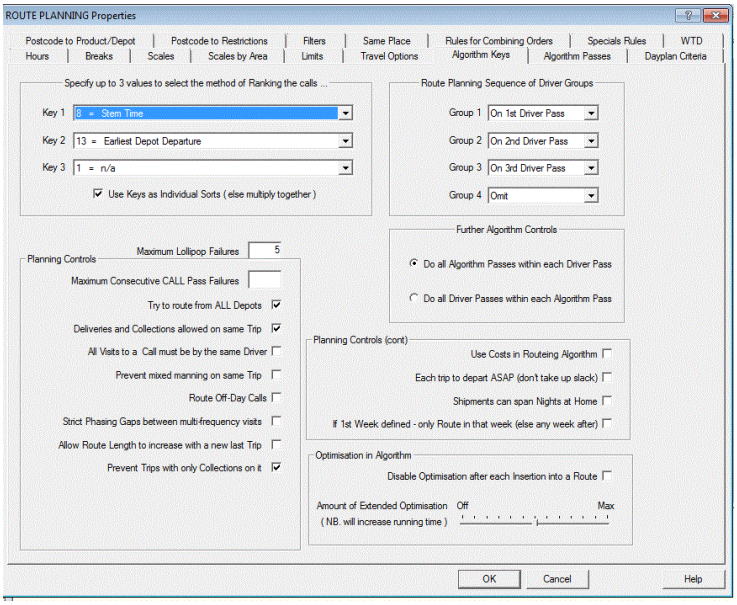
In terms of Limits on Multiple Trips, a Maximum Quantity may be set for all trips of a route if the number of trips and drops parameters are both exceeded on a any trip built. For example if the drops were set at 4 and trips at 2, any route with 2 trips and 5 drops on any trip could be limited to the maximum quantity value for Unit 1 on all the trips.

Travel Options

No Travel Time and Distance for First / Last Link

These two parameters may be used to remove the travel time and distance from either (or both) the depot to first call or last call to depot on a route. This can be useful, for example, in instances where the driver need not return to the depot after completing his route. The route will be displayed as normal with a first and last depot line but travel time/distance is set to zero in all calculations (including maximum shift and travel parameters set). Set the relevant tick-box to apply the criteria. Any existing routes will be re-calculated accordingly.

Algorithm Keys



The objective of the sort keys is to allow the user to define to the algorithm those constraints on the problem that are most likely to cause most difficulty. The Algorithm keys will determine the order in which the program will process delivery points and should be set up to reflect the critical characteristics of the data under analysis. It may be useful to run the planning program initially just using the default parameters from file set-up. Quite often these can produce acceptable results or provide good indicators of any changes which ought to be made to produce the best results when the list of deferred (or unrouted) data is examined at the end of the run. If one constraint is considered to be leading to many deferred calls then the use of the appropriate key in the program will promote theses calls in the scheduler and hence reduce deferments. For example in the case of a high number of vehicle access restricted calls with a low number of small vehicles on a fleet, the Max Veh Size key would be most useful.

Up to three keys may be specified for a single run of the scheduler to dictate the order in which the calls will be attempted to be put on routes. Key 1 is the most important, followed by key 2 and key 3. The best combination of keys will always be a function of the constraints on each problem, but more often than not with simplistic data the default values of factors 8 , 6 , and 13 will suffice. For a detailed explanation of all keys see the section below. As a standard feature the keys are all sorted separately with the Use Keys as Individual Sorts parameter set to YES. This may be changed if necessary.

In such a way the standard call sort criteria would be in order of priority :-

1) Stem Time or furthest away from the depot point
2) Most frequent or the call with the largest frequency value
3) Earliest Depot Departure (the call that must be served by the first vehicle leaving the depot either due to travel times or opening times).

The call with the highest stem time would then be placed at the top of the list for routing, with an equal times using frequency factors as a tie-break.

1. NULL - no sort (useful for 3rd key where it is having little effect on overall plan).
2. NEIGHBOURHOOD - will route calls closest to the depot first.
3. OPENING TIMES - promotes call which are open for relatively short periods of time so that they might be routed early in the solution before their constraints become too difficult to satisfy.
4. MAX VEH SIZE - promotes calls whose maximum vehicle size restriction (not banned classes) requires a small vehicle size so that other calls can be combined with them to maximise the vehicle utilisation. If used make this the primary key.
5. TRAVEL + WORK - adds the travel time to the work time and promotes those with the highest values. Hence small deliveries distant from a depot will be ranked equally with large deliveries close to the depot.
6. FREQUENCY - it is important that calls with comparatively high frequencies start routes early in the solution as VANGUARD will attempt to route all visits to a call at on time. In this way it may be difficult to find enough gaps in enough days on enough routes to satisfy the visits required towards the end of a plan. This factor is virtually a necessity for any study with differing call frequencies.
7. QUANTITY - this promotes calls with large UNIT 1 delivery quantities so that they have most chance of obtaining vehicle space early in a solution.
8. STEM TIME - this promotes calls distant from the depot and is advisable for any run especially if multiple ay routes are envisaged. The routing algorithm within the scheduling programs functions best by starting with peripheral alls and working back to the depot (which also ensures that any deferred calls are close to the depot and can easily e added manually if necessary) and so this factor is highly recommended for key 1 or 2.
9. STEM DISTANCE - this factor when used as the primary sort key (*with "null" key 1 as secondary and third sort*) this key will promote those calls that are furthest away from the depot in terms of driving distance. It is similar in function to key 8 but may be useful in instances where geography and roads conflict and affect the routing process,
10. DAY RESTRICTIONS - this factor compares the required visits to the number of available delivery days whether day restrictions or nominated days are being run) and promotes calls with the fewest days open above those needed to satisfy the frequency.
11. PRODUCT Rank - this factor is strongly recommended to be used with multiple models or where the Split Calls into individual Copies for each Product parameter is used, to promotes the products to be delivered to a call based upon the product rank values set on the Product data screen. Values of 1 will be ranked above 2 and so on, forcing certain products to be considered for routing before other lesser priority products.
12. EARLIEST BOOKED TIMES - this promotes calls with early fixed booked delivery time restrictions.
13. EARLIEST DEPOT DEPARTURE - this factor promotes the calls which have to be on the first routes leaving the depot early in the day. This may be due to distance from the depot or timing restrictions on the call.
14. DELIVERIES HAVE PRIORITY - in a study with delivery data (positive vehicle units) and collection data (negative vehicle units) this factor both promotes deliveries before collections in the algorithm and also prevents any collecting on any trip until all the deliveries are completed .

15. COLLECTIONS HAVE PRIORITY - in a study with delivery data (positive vehicle units) and collection data (negative vehicle units) this factor both promotes collections before deliveries in the algorithm and also prevents any delivering on any trip until all the collections are completed. This acts as the opposite to the key above.

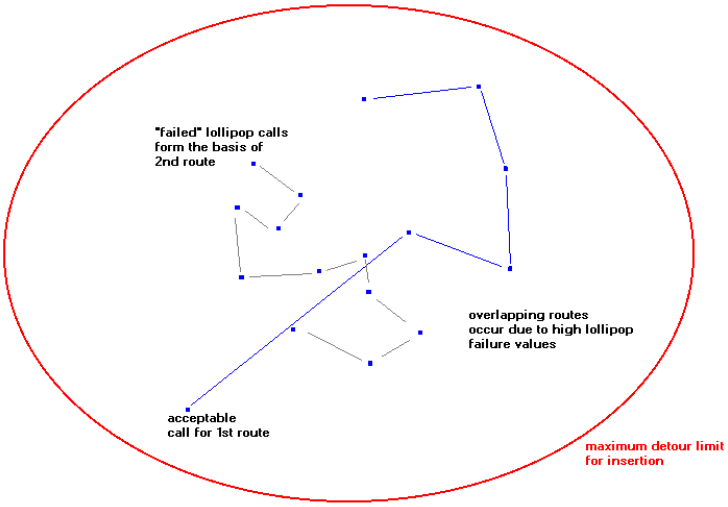
Use Keys as Individual Sorts

As a default feature the Algorithm Keys are all sorted separately with the Use Keys as Individual Sorts parameter set On. In this case all calls to be routed are sorted in three distinct phases using first Key 1 , then Key 2 , and finally key 3. By leaving the tickbox unset a multiple sort may be completed using all three keys in combination.

Planning Controls

Maximum Number of Lollipop Failures

The Maximum Detour Limit parameter is used by the route scheduling options to test the proximity of a delivery or collection point to each link of a route that the program has started. If the extra travel time is less than or equal to this value then the insertion will be considered (subject to all other restriction and parameter criteria). This process is known as the LOLLIPOP phase. The lollipop insertion phase will continue either until all calls within the area have been considered (and added to the route if possible) or a pre-defined limit of the number of failed insertions has been reached. This number is governed by this Maximum Number of Lollipop Failures parameter, which takes account of all reasons why a call cannot be added to the route in question. Common reasons include time restrictions, vehicle access, vehicle load constraints, product mixing ability, and so on. When the lollipop phase is completed for one route a new phase will start for the next.



As can be seen increasing the number of possible failures has the same effect on increasing the number of possible calls that may be added to the route. As the next call is further away than the previous this can also lead directly to wider areas in the lollipop phase and by inference wider routes geographically. Careful consideration must be given to increasing this value since a higher value may be required where call delivery restrictions are severe. For example with the default setting at 2, if the nearest two calls in a lollipop phase are both restricted to a small vehicle class nothing will be added to the initial call in that phase. However values that are too high may lead to both greatly increased running times and routes that cover too great an area and have crossed links with other routes. A classic example of an excessive value would be the route with a single long last link used in a effort to fill the vehicle to capacity after failing on larger closer calls.

Max Consecutive CALL Pass Failures

This parameter may be used in conjunction with the ROUTE PLANNING ALGORITHM PASSES function as a means of eliminating wasteful processing time in a route planning program. Set this parameter at an appropriate number to terminate the processing on any Pass which exceeds the this limit of consecutive CALL failures, when trying to create a new route. By default it is set blank, which has no effect on the planning process.

Try to route from ALL Depots

This parameter can be used within the planning packages to define which depot may deliver to a call point. By default with the value unset only the depot that the call is attached may deliver to that call. The Wrong Depot error message will prevent orders being dragged by accident onto a route from another depot. By setting the value, any depot can deliver to that call (as long as it can deliver the product available and lies within the relevant stem time limit), with the planning program choosing the appropriate option according to the run. If this is the case the call will always be delivered by a single depot for all the necessary visits, but will remain allocated to its original depot - no calls will be transferred from depot to depot automatically. It is useful to remember this if the depot plan is run in isolation at a later stage.

Deliveries and Collection allowed on same Trip

If deliveries and collections are to be mixed on a vehicle on the same trip by the route planning programs, this parameter must be set. By definition calls requiring a positive number of vehicle units are considered deliveries, whilst those with negative units are collections. By default the field is set allow mixing, change to ensure that negative collections are always placed on a separate trip. This parameter does not limit the number of deliveries or collections that may be put on a single trip. Use the Maximum Number of Deliveries per Trip parameter to restrict that option.

Multi-frequency Calls must be by same Vehicle

Within the planning process two distinct methods of route building can be used -
1) Multiple visits to the same delivery location may use any vehicle ident or route in any combination.
2) Multiple visits to the same delivery location must use the same vehicle and route.

This facility is controlled by the Multi-frequency Calls parameter, which by default is set to allow any combination. In case 2 , the possible options for route construction are thus very severely constrained and both program execution times and deferments can rise considerably. Therefore it is advisable that this facility only be used where it is imperative that calls must receive the same vehicle or driver (an example might be when attempting to route van salesmen).

Prevent Mixed Manning on same Trip

When using the Crew Size restriction facility on call points (double-click on the highlighted area for more detail on this facility) it is possible to prevent deliveries and collections with different manning requirements being combined on the same route. By default the parameter is not set to allow manning levels to be mixed. The required crew size for the route will equal the highest manning level restriction for any call on that route. If the field is set to prevent mixing routes will be produced with calls of equal restriction, i.e. one-man drops together on a route, two-man drops on another route and so on.

Route Off Day Calls

Each Call may have a nominated days field of a seven digit number (similar to day restrictions) designed to control opening days in conjunction with the time bands defined. Each digit represents a day of the week

SUN - MON - TUE - WED - THU - FRI - SAT

0 - Not nominated for delivery (no deliveries to be done that day)
1 - Nominated for delivery (deliveries to be done in any opening time band that day)

For scheduling processes this field (if set) is compared to the planning day and by default calls not nominated will not be planned. This facility may be over-ridden by ticking the Route Off Day Calls option to route a call on any day that Is not day restricted. Any affected calls will remain in the Deferment List and can be highlighted using the Style heading option “Off Day”, which displays a * and the day restriction. The Postcode to Day restriction function may also be used to define complete areas to nominated days and this field has priority over any individual call restrictions.

Strict Phasing Gaps between Deliveries

As a standard feature of the strategic planning options, calls with frequencies greater than 1 are phased when routed in the scheduling process. This means that the deliveries are placed on different days paying attention to the frequencies involved. The following would provide examples of possible combinations :-

DAY RESTRICTIONS	FREQUENCY	DAYS DELIVERED
SMTWTFS		SMTWTFS
3000000	3	x x x
3000033	2	x x
3000003	2	x x
3000003	2	x x
3000003	3	xx x
3000003	4	xx xx

By default all calls will have a phased delivery profile leaving available free days between visits as and when necessary. However should resources become short towards the end of a Vanguard plan in an attempt to route as much as possible certain calls may not have the expected frequency phasing as the process will allow any combination of days as a last resort. To avoid this at all costs set the parameter and the system will then only accept correct phases for deliveries. This will obviously increase the number of deferred calls.

The logic to route calls with multiple frequencies in planning period of 14 days or more prioritises the use of the same days over a period of weeks (hence a call with frequency of 12 over a 28 day plan will be set to be visited 3 times per week but on the same day each week e.g. Mon-Wed-Fri). This logic is reliant upon the cal frequency being a multiple of the number of weeks in question – e.g. frequencies of 1,2,4,8,12,16,20 etc will all route in a 28 day plan. A new deferment reason code of -28 is shown when Strict Phasing Gaps is Set & Frequency is not a multiple of the no. of weeks in the DCP (e.g. 6 in a 28 day DCP).

Allow Route length to increase with a new last Trip

As detailed investigation of the scales macro parameters and the Maximum % Shift Utilisation (New Trips) facility in particular shows the decision making process for length of route in days is undertaken at the start of the route building phase. In such a way the decision may be affected by factors such as close local booking times or distant timing restrictions at call points, causing a one or two day route to be set early in the plan. One possible disadvantage of this method is that in certain instances the possibility of combining two trips of one and a half shifts together into a single route of three days may be over-looked. This can prove vital for data with restrictive opening times and days. The same criteria can work for any realistic combination of trips and days. To allow this addition of days onto routes during the route building process set the field On. By default the parameter will prevent this facility to avoid potentially excessive driver night-out totals in the finished schedule.

Prevent Trips with only Collections on it

Tick the Prevent Trips with Collections only on it to prevent the routing programs creating trips without deliveries before the collection (i.e. prevents the vehicle departing empty to do just collections).

Use Costs in Routing Algorithm

This tick-box will use vehicle class costs in the routing programs (dayplan, vangaurd, etc) to produce a minimum cost solution, rather than optimize vehicle and driver utilization.

Each Trip to depart ASAP

This parameter, when used in conjunction with Production Availability Production Plans will produce routes that depart the depot as soon as product is produced rather than considering call opening times to optimize route sequencing thus delaying departure. This will reduce the amount of product remaining in the depot for any period of time.

Shipments Can Span Nights at Home

This parameter is used for daily scheduling with shipments and will allow shipments to be collected on one day, the driver to spend a night (or nights at weekends) at his home depot, and then delivery to be made the next day. The shipment in this case will be split over 2 trips on a single route with the second trip line displaying the no. of nights spent at home.

If 1st Week Defined – only Route in that week (else any week after)

This parameter is used for 4 week routing models. Where a call has a 1st Week of delivery set **and** a delivery frequency set to 1, the delivery will be scheduled in that week if the tick-box is set. If not, it can be delivered in any subsequent week.

Improved logic has been added into the Oct19 program to extend this facility for calls that have a frequency 2 or 3. Previous versions would amend the frequency to 1 if the only Route *in that Week* tick box was set but the new release will retain the set frequency and schedule the call into different weeks. This will enable a mixture of single and multiple frequency drops to be included in a single Vanguard run. Frequency 4 drops will always route in each of the 4 weeks ad drops with a frequency of 3 and 1st week = 2 will be placed in weeks 2, 3 & 4. Using the Strict Phasing Gaps setting should ensure that any drops with a frequency 2 are routed in the weeks set (1 & 3 or 2 & 4) but limited vehicle resources without the Strict Phasing may result in calls being routed where they can fit rather than deferred so results should be checked. In situations where strict weeks must be kept multi frequency drops can always be broken down into individual deliveries within the study employing 2 calls rather than 1 for example.

Optimisation in Algorithm

These options are designed to work in conjunction with updated code embedded in the routing programs themselves.

By default the routing programs will optimise each trip as a new drop is inserted into the trip. Using the “Disable Optimisation” tick-box on the dialog it is possible to stop this process and only optimise at the end after all drops are added in the lollipop phase. Under normal circumstances the default optimise will suffice but potentially on very large data sets with a lot of calls on each trip that have open time windows and no vehicle access issues for example the routing process may be speeded with very little effect on the routing.

There is also an element of “Extended Optimisation” code now built into the routing programs (simulating what happens on choosing the menu option for individual routes in Egotrip Mode). The process will look at possible combinations (for 8 calls this consists of 40,320 options) returning with the best option whilst maintaining route integrity and will continue for a period before giving up if better options aren’t found. Using the slide bar and moving it along towards the *Max* setting will allow the program to spend more time optimizing but obviously will increase the time take to run the routing program.

Route Planning Sequence of Driver Group

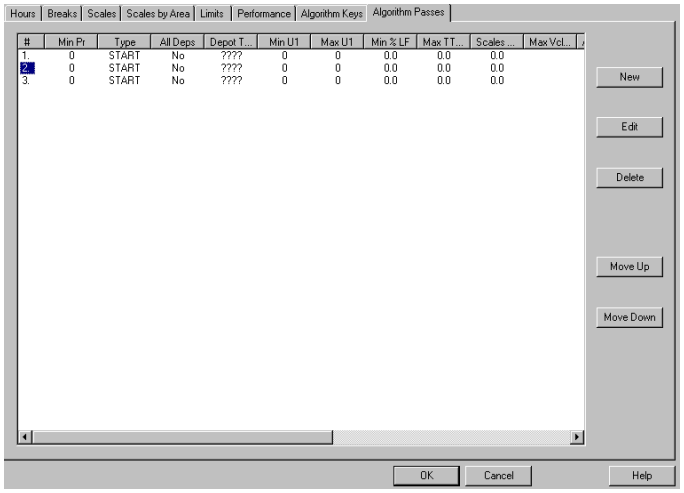
These parameters are used in conjunction with Driver Classes set for a depot to define the sequence of their planning in the routing process. Each class can be defined to have a Group value of either 1, 2, 3 or 4. These values can then be set to define the sequence in which drivers are planned (or even ignored) during the routing process. As an example if two driver classes were created called DAYS and NIGHTS, with DAYS being set to have a Group = 1 , and NIGHTS =2, by default the DAY driver class would be planned first, since the Group 1 parameter is set to On 1st Driver Pass. If however the parameters were modified to be Driver Group 1 = On 2nd Driver Pass and Driver Group 2 = On 1st, the NIGHTS class would be scheduled first. Furthermore if the Driver Shift 1 parameter was set to Omit This Shift, no routes would be created with Driver Class DAYS.

Algorithm Controls

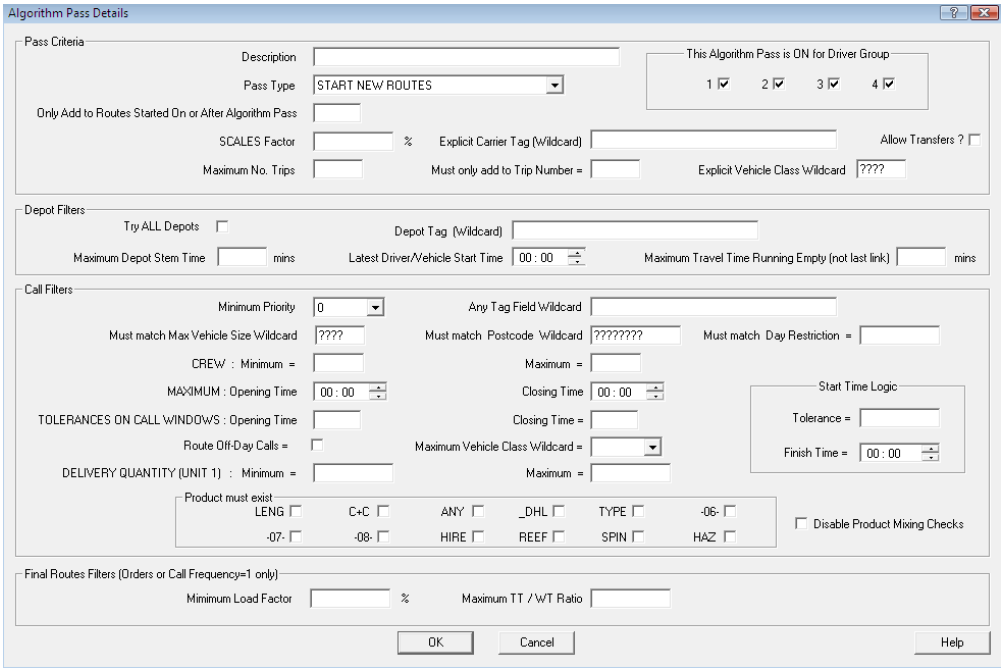
The option buttons control the sequence of operation for Driver Shifts and Algorithm Passes where defined. By default the button set on is *Do all Algorithm Passes within each Driver Pass*. This will cause the routing process to progress through ALL of the Algorithm Passes defined for the first Driver Shift, and then all of the Algorithm Passes again for the next shift, and so on. Conversely setting the button on for *Do all Driver Passes within each Algorithm Pass* will process ALL of the Driver Shifts for Algorithm Pass 1, and then all of the Driver Shifts for Pass 2, and so on until all algorithm passes have been completed.

Algorithm Passes

All route planning options now allow the use of Algorithm Passes. Multiple passes through the data may be employed in turn starting with No 1; each with different criteria to enable the process to sub-divide the planning into a number of stages to deal with the problem in hand. For example different call types may be considered separately to allow higher priority calls to be guaranteed delivery on any day; or outbase areas may be routed first to promote flexible boundaries ensuring all outbased vehicles achieve high capacity levels. Many different scenarios can be establish with multiple passes but it is worth remembering that numerous passes can increase the time taken to route.



To create a new Pass, click on the New button to display the input screen for a box, type the appropriate values into the fields provided and then click on the OK button. To clear any existing values click on the relevant # no. and click on Delete. To change an existing box select it by clicking on the required No. in # column and modify the values before clicking on the OK button. To move a Pass, simply select it and then click on the Move Up or Move Down button. To send a copy of the settings to the default printer use the Print button.



PASS CRITERIA – these parameters control the main processes of the pass

Description

Text may be input for an explanation of the purpose of the algorithm pass.

Pass Type

The PASS TYPE parameter may be set to either START NEW ROUTES , FILL EXISTING ROUTES , ALLOCATE TO POST LIST , ALLOCATE TO CARRIERS , or LOAD FIXED ROUTES. This parameter can be used to allow new routes to be built in this pass if enough vehicles are remaining. This is the START facility. The FILL facility may be used to add other orders to existing routes started in previous passes through the order data, but to prevent new routes being started. The control is often used where routes created in a previous pass are to be added to using orders released in this pass. Examples of this include routes from outbase vehicles which if having covered their usual delivery area with spare capacity can then use other depot's areas to fill the route; or small vehicle types which having being constrained to pick up size restricted calls on an initial pass may then fill with other orders in the vicinity.

The LOAD FIXED ROUTE facility is used in daily planning systems to allow a fixed route pattern to be input after orders have been loaded. If the Pass is instigated a dialog will appear with radio buttons to indicate the required day for Fixed Routes. The Orders will then be attached to the appropriate route and the route optimised. This facility is normally used as a 1st Pass, and can be used in isolation to present a true fixed route pattern, or with additional passes to add any other orders to these routes or create additional routes. The POST , CARRY and FIXED ROUTE facilities have no effect in Strategic Planning modes.

The CARRY facility allows daily orders specifically allocated to individual carriers or within areas that have been allocated to Carrier calls using the Postcode to Carrier function to be added onto carrier routes in early passes to prevent them being added to actual delivery vehicle routes thus creating uneconomic routing patterns. If costing parameters have been employed on the Carriers and Vehicle classes in use, the DAYPLAN route planning program may take some orders off carrier routes if economic feasible routes are constructed in latter passes. The CARRY function can also be employed as a final pass to add any remaining unrouted orders once all the dedicated vehicles have been utilised. Similarly the POST option can be used to allocate small deliveries to a Postal List (route –11).

Explicit Carrier Tag

This parameter is used to set which carrier calls are to be allowed in the pass and hence which carrier lists will be created if Pass Type CARRY is set . It refers as a reference to the Tag Field which can be set as an attribute of each carrier call. The same tag reference may be used for any number of carriers - they do not have to be unique. Any call with a matching tag field is then included in the pass. The ???? wildcards can be used to include a number of depots.

Only Add to Routes Started On or After Algorithm Pass =
This field requires a number of an algorithm pass to become active. It will prevent calls being added to any routes started on any passes earlier than the number specified.

Allow Transfers

The use of transfer logic is unique to the Daily options. It allows one or more orders to be transferred off one route and placed on another more appropriate route later in the plan by the routing program without needing manual intervention from the planner. To control the transfer of orders two criteria are used in addition to a "switch" on the passes control screen to turn the facility on or off for individual passes. By default the unset value infers NO transfers.
The two criteria are :-
Minimum Separation of Call from old Route's node
This represents the minimum driving time from the existing route's node (i.e. starting point) that must be exceeded for a transfer to be considered, and is used to control how far away an order must be from the core of the old route before it is considered too far.
Ratio of New Detour from Node to Current Detour from Node
This is a comparison of the new detour time against the old detour to ascertain if it would be a better fit on the new route being considered. If the ratio is high enough to exceed this limit (for example if the old detour was 30 mins, the new detour 10 mins, and the ratio 2.5) and the other criteria is satisfied the order is transferred onto the new route and off the old route.

Scales Factor %

The primary function of the basic SCALES MACRO parameters are to dictate the style of construction of the routes. The Detour and Time from Node limits will dictate the basic width and length of the shape of the routes. However each pass may be subject to an over-riding multiplier to further modify the procedure. Use of this percentage field as a multiplying factor can change the criteria as follows. 100% represents the base case (that is no change to the default values set), whilst 80% would have the effect of reducing the detour limits by 20% (thus making the routes smaller in scope), and 130% would mean a 30% increase in scope. A blank or default value infers no change. Examples of this would be a pass for the London area depot which routes better with smaller detour times in a concentrated delivery area, or a pass for a special class of vehicle which "roams" across the whole depot area delivering at particular locations only.

Max No of Trips per Pass

This parameter will set the maximum number of trips allowable in any single route created in a planning program in any one SINGLE Pass. Values may be set to constrain routing on a single pass if necessary. For example Pass 3 could be for outbase vehicles only which have to be limited to a single trip. The value will merely control the maximum number of trips allowed but will not automatically increase the number of trips planned. Increase this number to allow more trips but remember to pay attention to the SCALES MACRO routing parameters which control trip construction. The default value for this parameter is set to be blank in which case the Maximum Number of Trips per Shift parameter on the Limits screen is used. The default value for this field is 2 trips per shift.

Must only add to Trip Number

This parameter will only allow calls to be added to a specific trip of an existing route. For example Pass 2 could be used to create and build up 2nd trips. A blank or default value infers no restriction.

This Algorithm Pass is ON for Driver Group

Each tick-box may be set ON to include the relevant Driver Class in this Pass. As an example if two driver classes were created called DAYS and NIGHTS, with DAYS being set to have an Group = 1 , and NIGHTS =2, by default both driver classes would be included in a Pass since both are set ON. If however the parameters were modified to set tick-box 2 OFF, the NIGHTS class would not be scheduled for this Pass. (It could be added in a later Pass for instance).

Algorithm Passes - Explicit Vehicle Class Wildcard

This field represents a method of ensuring particular vehicle classes **only** are planned in a particular pass. Please note that Banned Vehicle Class considerations do not apply. The ?? wildcards can be used to include a variety of vehicle types – as an example Vehicle Wildcard = ??FT would include plan vehicle classes of 24FT, 33FT or 40FT. A blank or default value infers no restriction.

DEPOT Filters – these parameters specifically amend the depot criteria for the pass

Depot Tag

This parameter is used to set which depots are to be allowed in the pass. It refers as a reference to the Depot. Tag Field which can be set as an attribute of each depot ident. The same tag reference may be used for any number of depots - they do not have to be unique. Any depot with a matching tag field is then included in the pass. The ???? wildcards can be used to include a number of depots. The use of 4 question marks to fill the field would mean that every depot in the run is included in this pass. A blank or default value also infers no restriction. For 3 depots :- OUTBASE1 (tag=OUT), OUTBASE2 (tag=OUT), and MAINDEP (tag=MAIN); the following passes could be used.

PASS 1	Group Tag = OUT?	depots included are OUTBASE1 and OUTBASE2
PASS 2	Group Tag = ????	all 3 depots are included
PASS 3	Group Tag = MAIN	MAINDEP only is included

This would be a typical setting for a multi-depot plan where outbases are considered first to ensure full utilisation.

Try All Depots

This parameter is used where multi-depot runs are being attempted to control whether vehicles routes from one depot are to be allowed to deliver or collect from another depot's normal delivery area. It can be used to control the fixed and variable approach to depot boundaries, ensuring that depots in the first instance will consider their normal delivery area. Use of the Depot Group Tag can also be made to control which depots are included in the pass for this procedure.

Maximum Travel Time Running Empty

This parameter allows a maximum travel time to be set if the route has the vehicle running empty to pick-up delivery product at the start of a trip. Specify a value in minutes to set the required limit. This includes initial trips without product on a vehicle if planning with shipments or situations where a vehicle has collections to do after delivering. Use this also when planning remote garaging (i.e. vehicles based at a garage point (depot A) driving to collect and deliver products from another depot, to prevent un-productive routes being created.

Maximum Depot Stem Time

This field will prevent calls being added to any route from a depot if they lie outside of this driving time limit. The default value for this parameter is set to be blank in which case the Maximum Stem Time parameter on each depot screen included in the plan is employed. A common use of this parameter is to ensure that local areas can be served by specific one-day routes. By limiting the value to the 120 minutes a 2 hour maximum driving time is set for a pass around all the depots included. The normal default value for any depot is 240 minutes.

Latest Driver / Vehicle Start Time

Used in conjunction with a depot drivers or vehicles setup this parameter is employed to control the routing of vehicles by comparing the set Start Times and only allowing routes to be created if drivers or vehicles have a value equal to or before the time set.

CALL Filters – these parameters specifically amend the calls or orders to be included in the pass

Minimum Priority

For daily scheduling this sets the minimum priority of any order to be considered for scheduling in this pass. It is most useful in situations where "deliver by" dates are being used by orders, such that an order increases in priority the longer it remains or re-appears in the system. The minimum priority any order can have is 1. Priorities of 80 or above make the order critical; that is it must be routed in that day's plan. Order priorities are set during installation to reflect the delivery policy in question. Any order with a "deliver on" date specified will have a priority of 80. For strategic use this field can be used in conjunction with either call priority values or product priority values to exclude certain calls or calls requiring delivery of a particular product from an individual pass.

Max Vehicle Class

This field represents a method of ensuring the call with a vehicle size restriction can be accommodated into the plan in a particular pass. Only calls with a Maximum Vehicle Size restriction which is equal to or smaller than the specified vehicle's Unit 1 capacity will be considered for routing in that pass. Please note that Banned Vehicle Class considerations do not apply. A valid existing vehicle class must be used. A blank or default value infers no restriction.

Calls must match Vehicle Wildcard

This field represents a method of ensuring calls with particular vehicle size restrictions are accommodated into the plan in a particular pass. Please note that Banned Vehicle Class considerations do not apply. The ?? wildcards can be used to include a variety of calls – as an example Vehicle Wildcard = ??FT would include all calls with a maximum vehicle size of 24FT, 33FT or 40FT. A blank or default value infers no restriction.

Calls must match Postcode

This parameter is used to set which calls are to be allowed in the pass. It refers as a reference to the Call Postcode Field. Any call with a matching postcode field is then included in the pass. The ?? wildcards can be used to include a number of calls - as an example Postcode Wildcard = DY??????? would include all calls with a postcodes DY12, DY1 1AA, DY, or DY4 3. A blank or default value infers no restriction.

Calls must match Day Restriction

This parameter is used to set which calls are to be allowed in the pass. It refers as a reference to the Call day restriction Field. Any call with a matching field is then included in the pass. The ?? wildcards can be used to include a number of calls - as an example value 3033333 would include all calls with a Monday delivery only. A blank or default value infers no restriction.

Crew Minimum/Maximum

These fields will control the routing of calls by comparing the Crew Size field and only allowing calls into a pass if the value lies between the parameters set. If blank, no restriction is made and all calls are included.

Maximum Opening Time / Maximum Closing Time

This parameter is employed to control the routing of calls by comparing Time windows and only allowing calls into a pass if their appropriate Opening and/or Closing Times are equal to or before the values set.

Tolerances on Time Windows

Two fields are available to define tolerances on Delivery Time Windows for each algorithm pass defined. A value in the Opening Time will allow delivery to be made before the defined time window; whilst a value in the Closing Time field will enable delivery after the defined closing time. For example if a Call had a window time defined of 0800 - 0915, values of 10 minutes in Opening and 5 minutes in Closing would enable a vehicle to arrive at a call in the window 0750-0905. Different values may be applied for each Pass and will apply to all Calls available for routing. Blank or Zero fields have no effect on the defined windows.

Route Off Day Calls ?

Each Call may have a nominated days field of a seven digit number (similar to day restrictions) designed to control opening days in conjunction with the time bands defined. Each digit represents a day of the week

SUN - MON - TUE - WED - THU - FRI - SAT

0 - Not nominated for delivery (no deliveries to be done that day)
1 - Nominated for delivery (deliveries to be done in any opening time band that day)

For scheduling processes this field is compared to the planning day and by default calls not nominated will not be planned. This facility may be over-ridden by ticking the Route Off Day Calls option on an Algorithm Pass. Any affected calls will remain in the Deferment List and can be highlighted using the Style heading option “Off Day”, which displays a * and the day restriction. The Postcode to Day restriction function may also be used to define complete areas to nominated days and this field has priority over any individual call restrictions.

Any Tag Field Wildcard

This parameter is used to set which calls or orders or shipments are to be allowed in the pass. It refers as a reference to Tag Fields which can be set as an attribute of each ident. The same tag reference may be used for any number of call - they do not have to be unique. Anything with a matching tag field is then included in the pass. The ?? wildcards can be used to include a number of call types.A blank or default value also infers no restriction. For 5 calls :- C100 (tag=A), C001 (tag=AAA), C003 (Tag=ABC), C004 (Tag=BAC), and C005 (tag=XXXX); the following passes could be used.

PASS 1	Call Tag Wildcard = ???C	calls included are C003, C004,
PASS 2	Call Tag Wildcard = ????	all calls are included
PASS 3	Call tag Wildcard = A???	calls included are C001, C002, C003

Min/Max Delivery Quantity

These parameters can be used to restrict the order minimum or maximum delivery quantities to be considered on each pass. The figures used correspond to the Vehicle Units calculated for each individual call with multiple consolidated orders and not individual order amounts. Typically the minimum value may be used to exclude small orders that are normally delivered by a parcels carrier, or to promote large "full loads" to ensure that they are routed whatever the priority. In a similar way the maximum value can be used to exclude large orders from passes which are set to utilise smaller vehicle types. A blank or default value infers no restriction.

Product Must Exist Flag

This field will allow the inclusion of calls or orders on a pass based upon the 12 DiPS product types. Tick each relevant field to ensure that this product must be on the delivery or collection to be included in routing on this pass.

Disable Product Mixing Checks

This parameter, when ticked, will cause any product mixing criteria set in the Product, Units and Work will be ignored for this pass (i.e. any product can mix in the same vehicle with any other).

Start Time Logic

The Start Time logic is used to force deliveries to be made in the early stages of a call's opening time. Set a value in minutes to force the vehicle to arrive within this period from the opening time of the call. As an example if the Tolerance = 30, and a call opens from 0500-0900, the vehicle is only allowed to arrive before 0530. The Finish Time value is the time of day after which this logic does not apply.

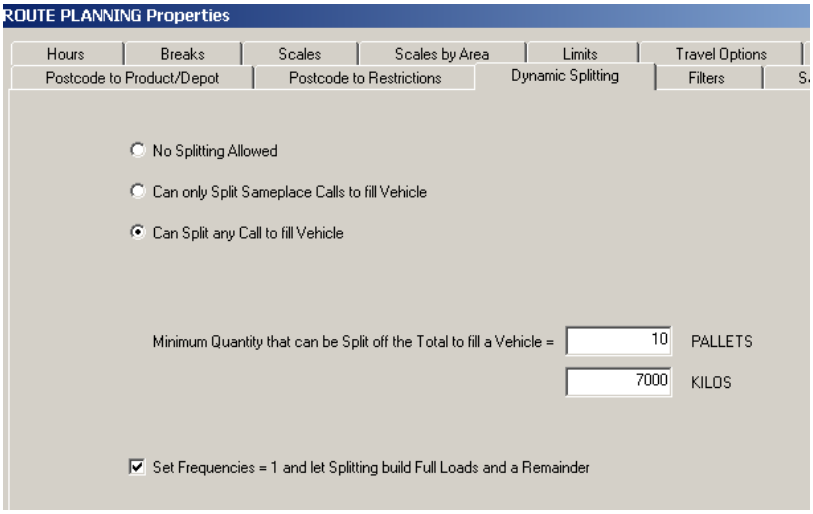
Daily Planning Final Routes Filters – these filters can be used to reject routes when using orders

Minimum % Load Factor

This value can be used to abandon route construction if the vehicle units to be delivered on that route do not meet the minimum loading criteria. Once the initial lollipop phase has been completed for a route, the vehicle units found for delivery or collection are compared with the Minimum % Load factor for the largest vehicle available to do the route. If the units are not sufficient the route is abandoned and the scheduling phase starts again in an attempt to find a combination of orders that meets the criteria. This parameter is often used to prevent the construction of small routes in isolated delivery areas for little quantity. Such orders are then deferred in the Dayplan scheduling process with code = 0. A blank or default value infers no restriction (i.e. 0%). Up to 1 decimal place may be used if required. A route of 3 orders with a combined weight of 1 ton, would be allowed if the maximum vehicle size of the calls was a 10T class (of maximum capacity 10 tons), and the Minimum % Load Factor on the pass had been set to 9 %. This parameter has no effect in Strategic Planning options.

Max TT/WT Ratio

This parameter can be used to compare the Travel Time (TT) and Work Time (WT) of any trip constructed to see that it meets the rules set. It can be used to ensure that if a long distance trip is planned it contains sufficient work time to appear feasible. The Work Time is divided into the Travel Time and the resultant value is compared to the parameter for this pass. If the value is not sufficient the route is abandoned and the scheduling phase starts again in an attempt to find a combination of orders that meets the criteria. A blank or default value infers no restriction. Figures with up to 1 decimal place may be used if necessary. This parameter has no effect in Strategic Planning options.



Call Delivery Quantity Splitting

In the Routes Parameters section, in strategic studies dynamic splitting parameters control the division of call quantities to fit onto vehicles.

For Calls where the required frequency exceeds the number of available depot shifts or the quantity is greater than the biggest vehicle available, if the No Splitting Allowed parameter is set, the scheduling process will defer the call with reason code = -5. The call frequency or quantity may then be amended to match the depot restrictions and scheduling re-run if necessary.

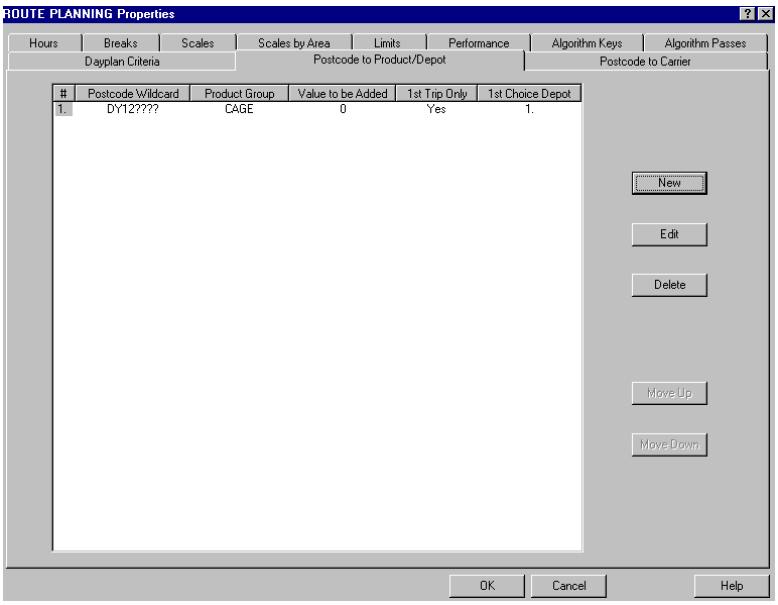
However, as an alternative measure, parameters may be set to enable the routing program to divide quantities dynamically. The Can Split any Call to fill Vehicle parameter will allow any calls to be split and routed on the same vehicle if found within the lollipop of a route (even if in different locations), whilst the Can only Split Sameplace Calls parameter will only split calls' volume to go on the same vehicle route when they satisfy the sameplace rules defined. In both cases any quantities split off the total for a call must meet the Minimum Quantity figures set (see below).

The Minimum Quantity that can be split off the Total to fill a Vehicle parameter is used when routing to control the splitting of units when the quantity is too big for the biggest vehicle that can access the call. Set to 1 or above, it enables splitting but can be controlled by a higher value. For example, setting it to the capacity of the biggest vehicle ensures that only full loads will be split off the total (including equivalent full loads for any calls with a smaller maximum vehicle size). With the DiPS multiple model it controls the minimum amount of vehicle unit1 that can be brought forward from the next wave of product delivery to fill a vehicle on a previous wave. If values are set for unit1 and unit2, *both* values must be satisfied before the quantity is split.

With the Set Frequencies=1 parameter, the call frequency may be amended to 1 and the scheduling program produce copies where needed in order to deliver the required vehicle units within the depot restrictions set. This temporary copy is valid only within the scheduling run. A permanent copy will not be made for the database. As an example, for a call requiring 5 visits with only 4 available delivery days (bank holidays for example), the scheduling program will compare the maximum vehicle size capacity and deliver the required volume in 4 visits if possible. Where there is too much volume additional vehicles will visits the call on the same day.

If ticked the "Prevent Frequency being Re-calculated" option will stop strategic routing programs increasing the frequency automatically for calls that have a larger drop size than any vehicle available at the depot. If for example a call is open for five days in a week and has a single quantity of 40 pallets (for a 22 pallet vehicle) the program would automatically increase the frequency to 2 per week in order to route the call. Setting this parameter will not allow the frequency change and leave the call un-routed.

Postcode to Product/Depot



This facility is used to prevent the mixing of certain postcode areas on routes generate by the scheduling options, and to force certain postcode areas only to be placed on the first trip of a route. It may also be used to define a first choice depot for any new customer created. The Postcode Wildcard field may consist of any combination of letters, numbers, or # , ? , and ^ symbols. A ? will match any character in a call's postcode field including blank spaces. A # will match any number, and a ^ will match letters only. Blank spaces where used also provide valid criteria. In this way any combination may be used to match either an individual postcode or a range of codes. Ensure that any specific postcodes input precede any more general wildcards as DiPS will process the first matching criteria it finds (DY12 1?? must be before DY??????? in the list). Valid combinations could include :-

DY?????? - would match any DY postcode such as DY12 1AB, DY1 , DY4 5 , or even DY on its own.
DY12 1AB - would match only calls with the DY12 1AB code.
B#????? - would match only B codes with a number in the next field (that is B23 and not BA or BD etc.).
W1^???? - would match only calls in the W1 area as a letter is required next (and not W12 etc.)
N1 ???? - would match only calls in the N1 area and not N11 or N12.

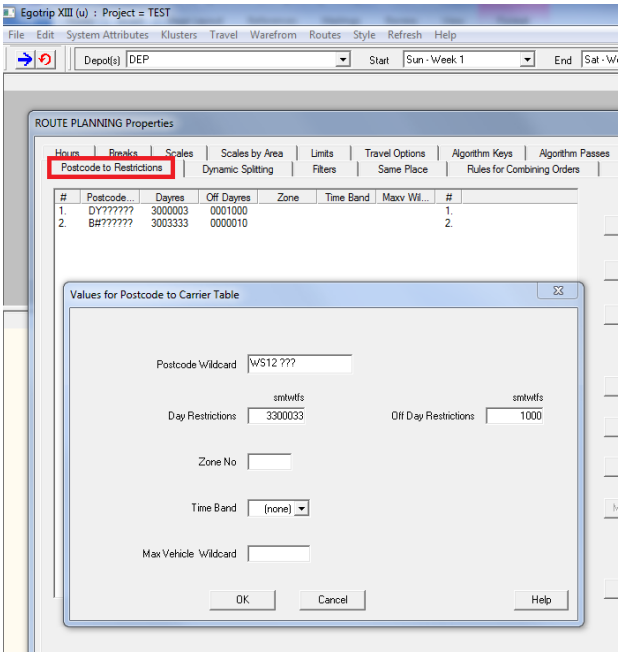
In order to calculate "dummy" product to use with the mixing logic for scheduling a pre-defined Product Group is used. At least one must be specified for the process to work correctly. A Product Group corresponds to one of the 12 Product Labels. Use the dialog to choose from the current selection of product group labels, and then specify a conversion factor for this group (1 is usually sufficient). These product groups are then made mutually exclusive using Product Mixing Matrix. As an example to restrict City of London postcodes to avoid crossing the Thames river, create two product groups (say NRIV and SRIV), and set the postcode table for the appropriate codes (e.g. W???? - NRIV ; SW??? - SRIV). Ensure that all relevant postcodes that could possibly be routed together are included in the list.

The First Trip Only field can be set to YES to force any orders being delivered to a location in the postcode area specified to be placed on the first trip of any route.

If a valid existing depot ident is specified in the 1st Choice Depot field, any new calls with a postcode field matching the Postcode Wildcard set will be automatically allocated to that depot on creation. Use of ??????? in the postcode field with a depot name will lead to all calls being allocated to that depot, which when placed at the end of other postcode settings will lead to a default depot allocation for any call not matching the specifics.

This can also be used to transfer calls between depots using the menu option **Execute Postcode to Depot Table**, which will re-allocate all calls according to this table.

Postcode to Restrictions



Postcode to Day & Off Day Restriction / Time Band / Vehicle Size Restriction

The postcode to restriction facility may be used to define which postcode areas may be routed on particular days, and to what restrictions. It is useful for situations where restrictions are required but may not be available on Order download files for example. Codes are defined with an appropriate Day Restriction field to prevent routing by the planning programs in this area on certain days of the week. For scheduling processes this field is compared to the planning day and by default calls will not be planned. Using the Off Day restrictions will set the Off Day flags for any calls or orders with matching postcode criteria. By default drops will not be planned by the routing programs but this may be over-riden by ticking the Route Off Day Calls option on the Algorithm Keys tab in Routes, Parameters dialog or for more control on an individual Algorithm Pass. Any affected calls will remain in the Deferment List after routes are created and can be highlighted using the Style heading option “Off Day”, which displays a * and the day restriction. These fields are also available on Route panel displays.

Postcode Wildcard

The Postcode Wildcard field may consist of any combination of letters, numbers, or # , ? , and ^ symbols. A ? will match any character in a call's postcode field including blank spaces. A # will match any number, and a ^ will match letters only. Blank spaces where used also provide valid criteria. In this way any combination may be used to match either an individual postcode or a range of codes. Ensure that any specific postcodes input precede any more general wildcards as DiPS will process the first matching criteria it finds (DY12 1?? must be before DY??????? in the list).

Day Restrictions & Off Day Restrictions

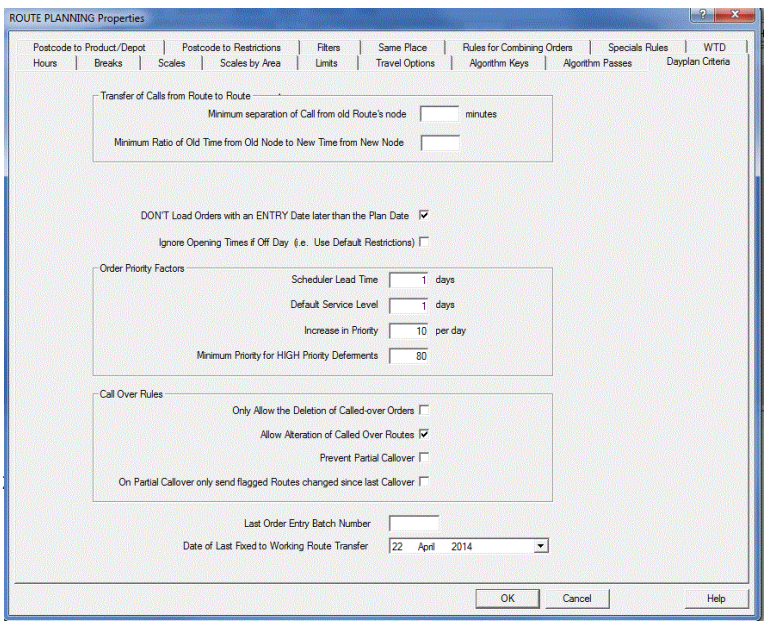
The day restrictions field is a seven digit number designed to control opening days. Each digit represents a day of the week in the sequence **SUN - MON - TUE - WED - THU - FRI – SAT.** The value of each digit is determined from the following codes :- **0** - Open , **3** – Closed. Off Day restrictions can also be set using a 1 for On or 0 for Off for each day.

Time bands may also be set for all calls within a postcode area, and a maximum vehicle size set too. These fields will be used in preference to any restrictions set on individual calls.

Using Postcodes with Fixed Routes

When using Postcodes with Fixed Routes, on entering Fixed Route mode all the postcodes will initially be transferred to their appropriate depot by the Postcode to Depot table visible in Route Parameters. This will allow individual depots to be selected omitting other postcodes. The current allocation of postcodes to depot may also be saved as the Postcode to Depot table if required by using the Warefrom menu option Save Current Allocations when in Fixed Routes mode. Postcodes will also be omitted based upon their appropriate Day Restrictions field in the Postcode to Carrier or Day Restriction table depending upon the days selected in the Start / Finish toolbar. The Zone field may be used for information purposes as the last 4 characters are displayed as the Tag Field for the Postcode areas.

Dayplan Criteria



Transfer of Calls from Route to Route

The use of transfer logic is unique to the Daily options. It allows one or more orders to be transferred off one route and placed on another more appropriate route later in the plan by the routing program without needing manual intervention from the planner. To control the transfer of orders two criteria are used in addition to a "switch" on the passes control screen to turn the facility on or off for individual passes. By default the unset value infers NO transfers.
The two criteria are :-

Minimum Separation of Call from old Route's node
This represents the minimum driving time from the existing route's node (i.e. starting point) that must be

exceeded for a transfer to be considered, and is used to control how far away an order must be from the core of the old route before it is considered too far.

Ratio of New Detour from Node to Current Detour from Node
This is a comparison of the new detour time against the old detour to ascertain if it would be a better fit on the new route being considered. If the ratio is high enough to exceed this limit (for example if the old detour was 30 mins, the new detour 10 mins, and the ratio 2.5) and the other criteria is satisfied the order is transferred onto the new route and off the old route.

Ignore Orders with an Entry Date later than date of plan
This is set to allow orders with any entry date (e.g. mistyped values) to be planned.

Scheduler Lead Time
his parameter defines the number of days an order remains in the system before being routed. It will default to 1, which leads to immediate inclusion in any planning.

Default Service Level
This parameter defines the number of days an order remains in the system before being routed. It will default to 1, which leads to immediate inclusion in any planning.

Increase in Order Priority per day
This value is used to calculate the increase in order priority each day an order remains in or is re-input into the system. Any order becomes critical (i.e. must be delivered) when its priority reaches 80. This function may then be used to govern how many days an order may appear before it needs to be routed, and defines a service level accordingly. The order age priority value may also be use in conjunction with the Route Planning - Algorithm Passes to enable different order priorities to appear in distinct passes through the data.

Minimum Priority for High Priority Deferments
This value controls the appearance of orders within the deferred list. If used in conjunction with Order Age Priority function only critical orders will appear in the list. The remaining orders would then appear as lower priority. The default value of 80 is set to include only those orders that must be delivered on that day. Set the value to 1 to place all orders on high priority.

Only Allow the Deletion of Called-Over Orders
This parameter will allow only the deletion of called-over orders using the menu option ALL or automated Order download options if set. A called-over order is one that was present on a route when a callover was done. Individual orders may still be deleted in Kingpin Mode using each specific order number input separately. It will allow orders to remain in the system for a number of days if they are not routed.

Allow Alteration of Called Over Routes
If not set, this will prevent any alteration to routes that have been called-over. Orders cannot be moved, added or deleted.

Prevent Partial Callover
If set, this will prevent the callover of routes unless ALL depots are applied. Single depots cannot be transmitted separately. Partial callover allows some routes to be sent for picking whilst others are still being worked on. Routes can be nominated whilst planning using the Route Summary menu option “To Be Called Over” and then used along with the “Callover / Send Routes Back” dialog choice – Only Routes Flagged in Egotrip Mode. The standard setting in DiPS is to allow this. Use the Route Summary display column *CO Status* to show the current position of routes : CO = Called Over, PCO = partially called over (has new information), ALT = already called over but modified.

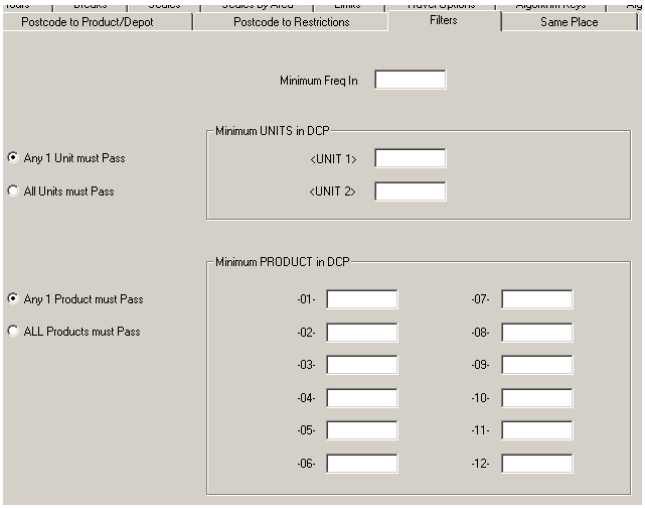
On Partial Callover only send flagged Routes changed since last Callover
If set, this will only create information for orders on routes that have been modified since the last Callover process was done. It is used alongside the Partial Callover logic to nominate certain routes rather than transmit all orders, but will only write information on callover files for orders on routes that have changed (if flagged routes have not been altered they will not be transmitted). This facility is normally used to decrease the processing times for files by reducing the amount of information sent.

If host systems allow it, to re-set the status for all the routes in DiPS use the Refresh menu option – Undo callover Flags. This will set all routes back to before any Callovers were run or To Be Called Overs flags set (call DiPS for more advice if necessary).

Last Order Entry Batch Number
When an order input is done the RIOTOUT.DAT input file (if used) is backed up to file in the following format - C:\OE_xxxxx , where xxxxx is a number in the sequence 00001 to 99999. This will allow the order intake to be re-run if necessary. This field will display the last number in the sequence in order to identify the required file.

Date of Last Fixed to Working Route Transfer
The date of the last Fixed Route Use is shown for information.

Filters



The Filters section can be used to exclude certain parts of the data from routing processes, carrier selection and as criteria for data manipulated within the transfer and delete menus. To use the filters simply input a value into either of the possible fields and the programs will detect any calls which fail to meet the criteria specified and exclude them from processing. Any calls excluded from routing will appear as deferred with a reason code of **-55**.

Using the criteria of either **Any must Pass** or **ALL must Pass,** it is possible to specify whether the call or order should have to meet **ALL** the filter parameters or just one.

If **ALL** is set, every one of the values are considered together; that is if both Minimum Number of Deliveries and Minimum Vehicle Unit 1 have values associated with them the call must pass on both accounts to be included. For example if the values were Min dels = 3 and Unit 1 = 200 , a call with a visit frequency of 10 and unit 1 of 300 would be acceptable, but a call with a visit frequency of 7 and unit 1 of 176 would not.

If **ANY** is set, the call or order must pass at least one of the values to be included. For example if the values were product 1 = 1 and product 2 = 1 , a call requiring 10 of product 1 but 0 of product 2 would still be acceptable, having met at least one criteria (the product 1 filter).

The values are also global parameters and apply for all depots entered in a program. The filters continue to have an effect on all relevant programs until removed. Beware of inadvertently leaving values in and producing unexpected results. Any zero, blank or un-set values are not included in the criteria.

Minimum Number of Deliveries in DCP

This value is the smallest cumulative frequency value of a Call in the study period for the entity to be considered as passing the filters and included into the relevant program or activity. Any data failing to meet this criteria (or any other criteria set) will be excluded from processing. Any data with a visit frequency equal to this value will be included. The value must be less than this filter to be excluded. As an example a setting of 1 would exclude any data with a zero frequency.

Minimum Vehicle Unit 1 handled in DCP

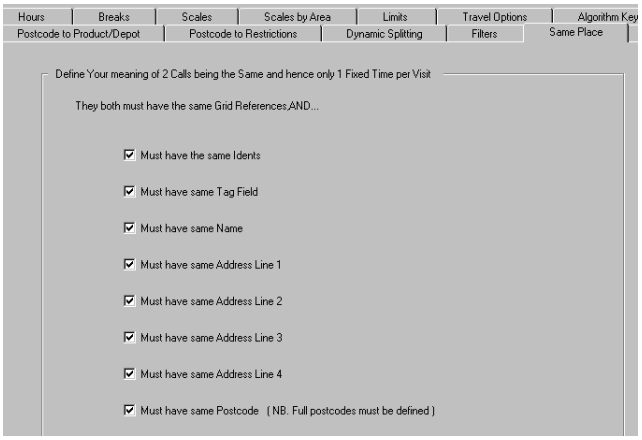
This value is the smallest absolute (either positive or negative) Vehicle Unit 1 value required of a Call in the study period for the entity to be considered as passing the filters and included into the relevant program or activity.

Minimum Call Product in DCP

This value is the smallest absolute (either positive or negative) Product required of a Call in the study period for the entity to be considered as passing the filters and included into the relevant program or activity. Any data failing to meet this criteria (or any other criteria set) will be excluded from processing. Any data with a Product required value equal to this value will be included. The value must be less than this filter to be excluded. As an example a setting of 1 for product -02- & "ALL Products must Pass" would exclude any data with a zero requirement value for this product even though it may contain valid requirements for any other product.

Filters with Delete and Transfer

The filters facility may be used within the transfer and delete menu options as follows -
Pass through the Filters - includes all the calls passing the set filter parameters
Do NOT pass through the Filters - includes all the calls failing the set filter parameters
The control selection boxes used make it possible for example to transfer all calls passing the filters from one depot to a new depot for further analysis, or to delete all calls failing the filters.

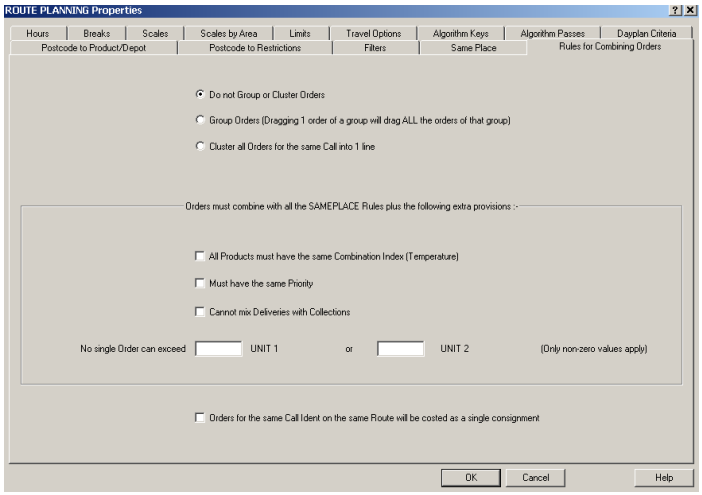


Same Place

The Same Place section defines the logic behind deciding which calls are considered by the route planning process to be in the same location and therefore do not require the Fixed Delivery Time to be added more than once. Use the tick boxes as indicated to define which criteria must be met by the calls. By default every parameter will be set; that is the calls must have identical Idents, Tag Fields and address information. Set the required options to achieve the necessary results. For example if only Postcodes are set, fixed time

will only be added once to all the different calls sharing exactly the same postcode on a route. Please note that this field can only be use with full postcodes defined, i.e. DY12 2RH and not just DY or DY12.

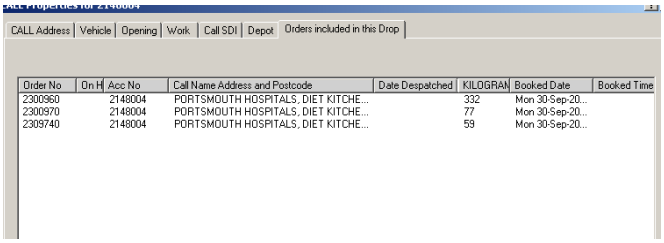
Combining Orders for the Same Delivery Location



Orders can be grouped or clustered together to ensure all orders fro the same delivery location are made on the same vehicle route at the same time. 3 options exist - No Grouping (orders are moved individually), cluster all Orders for the same call into one line (a single line is displayed for ALL orders for that call id), Group Orders (which displays orders individually on separate rows but groups them together when moving).

For the grouping option, orders can be grouped for the Same Place if they meet certain criteria as set out in the Rules parameters. Firstly all the orders must be for the same call or the a number of calls considered to be the "Same Place" as defined in the Same Place section. The Rules parameters, set by placing a tick in all relevant boxes, include orders having the same temperature (combination index on Products screen), same priority rating (from delivery dates or product priority), or being deliveries/collections. They will then be displayed as a group e.g. {1 of 2} and be able to be dragged as one block . Large orders may be excluded from the grouping process by setting appropriate minimum size values in the vehicle units boxes.

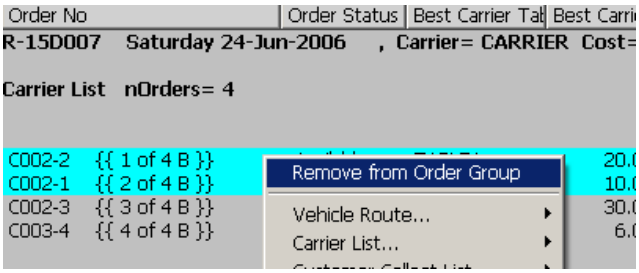
If Carrier costing calculations are being considered , an additional tick-box may be set to calculate a single overall carrier cost for all grouped order, rather than calculate a cost for each order individually. If a grouped cost is calculated, a proportion of the total cost will then be allocated to each order based upon the relative amounts of the product or vehicle unit used for costing.



Consolidate All Orders for a Call into a Single Line

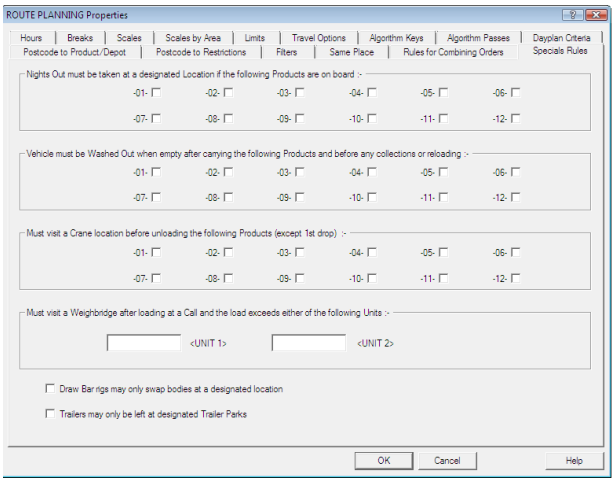
When clustering all orders for the same call, the program will then consolidate all orders for the same call ident, and display a summary of these on a single line when routing in Egotrip mode. This can greatly reduce the amount of data visible in the routing process, thus making the job easier. The individual orders may be seen both on the *Orders included in this Drop* tab on the call screen. (see picture) The Order headings used are those set in Styles menu option, Kingpin Headings – Orders. The quantity to be routed will be the sum of all the orders for that call. Print and callover routines will remain as normal where applicable. This parameter cannot be modified whilst routes exist and must be done prior to any routing. It is important to note that this consolidation facility CANNOT deal with separate booking/delivery times or addresses for individual orders, and should not be used where this applies. If you are in any doubt please contact DiPS for further advice

Removing Orders from Groups when Routing



By selecting orders within a group and clicking the right hand mouse button, the menu option **Remove From Order Group** can be used to isolate deliveries and deal with them individually. This may be useful for larger orders or where groups may be too large for a single vehicle. Once isolated orders can be moved individually. If they are moved onto another route or into the deferred list, they can subsequently combine into or form another group. For example if both highlighted orders in the picture below were moved onto another route together they would form a group of 2 with the description {1 of 2 C} and {2 of 2 C}.

Specials Rules



The Specials tab in Kingpin Mode enables the addition of locations to be used alongside the Special Rules section in Routes Parameters to account for vehicles having to travel to certain locations as part of their daily shift. Examples would be wash-out points for tankers to be cleaned after delivery of certain products or secure lorry parks for night outs.

In the Routes Parameters dialog, the Special Rules tab enables the following :-

Nights Out must be taken at a designated location if any of the ticked products are on the vehicle when a night out is required. The program

will then assess the list of specified night out locations and use the most appropriate one.

Vehicle must **Wash Out** at an appropriate point after carrying the tocked products and before collecting or reloading with any product.

The vehicle Must **Visit a Crane** location before unloading any of the indicated products at a subsequent call point AFTER the first delivery on the trip is made.

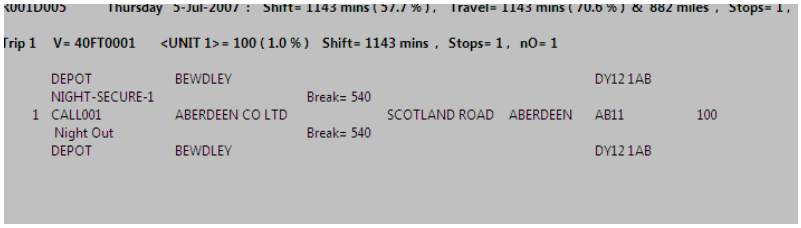
The vehicle must **Visit a Weighbridge** location after loading at a call (not a a depot) and the load exceeds either of the indicated vehicle units. A zero or blank value indicates that this parameter is inactive.

If set, Draw Bar vehicles may only swap bodies at a designated location and not at a call when delivering or on the road as part of driving between two calls.

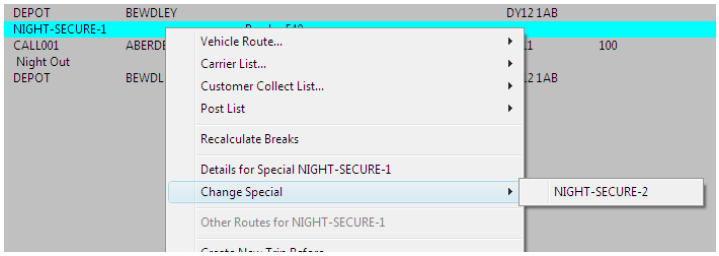
If set, a tractor unit or motive unit may only leave a trailer at a designated trailer park before collecting a trailer at a shipment collection point that has the Pickup Trailer attribute set.

Routing programs will automatically select the most appropriate location for any activity in the route building code.

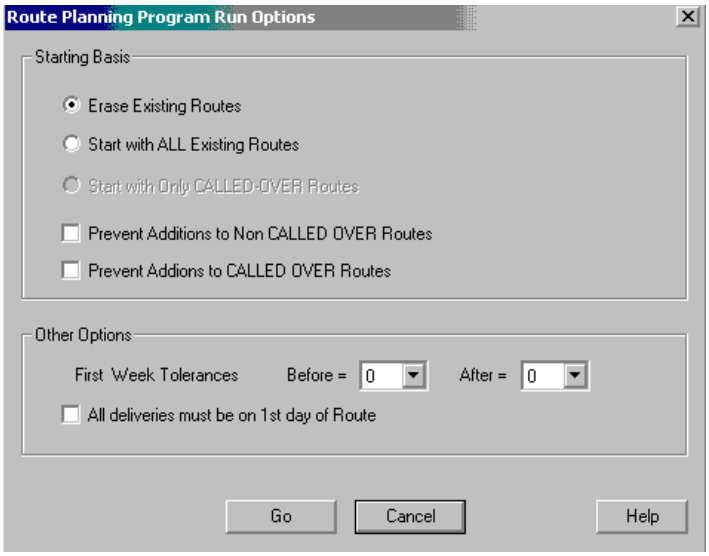
When routes are visible in Egotrip mode, any Special Locations can be seen at the relevant place in the route with the Acc No. column displaying the appropriate ident. Locations will also be printed and exported alongside usual route data.



To display the Location properties dialog or change the Special, click on the route with the right button and choose the required option. The Change Special menu will display all other available choices for the type of Special Location. Click on the new ident to change it if necessary.



Strategic Route Planning with Vanguard



In terms of scheduling vehicles for strategic studies there are two routing options in normal use. The Run Vanguard option may be used to produce 'optimised' vehicle schedules where vehicles operate from a single depot point: that is every vehicle will start, re-load and finish at the same single depot. Alternatively for fleet-sharing scenarios where vehicles are not based at all depots or warehouses, or deliver from a number of depots strategic shipments can be used. In this case you may see vehicles driving to other locations (depots) to load calls before delivering, or re-loading at a second depot after an initial trip from the first. Routing control parameters are available to influence the type of routes produced set in the Routing Parameters option.

Vanguard
To route vehicles to deliver calls for the selected depots and days set in the toolbar, select the Routes menu followed by Run Vanguard.

There are a number of different options relating to the routing process and these are displayed in the form of radio buttons. Click the LHB on the required option to select it.

Erase Existing Routes - this will remove any existing routes and start the routing process again from scratch.

Start with ALL Existing Routes - this will retain all current routes and attempt to add any unrouted calls to these routes or create new routes accordingly.

Start with Only CALLED-OVER Routes - this will retain only those current routes that have been marked as called-over (either by running the callover process or setting the flag using the menu option from the Summary Panel), and attempt to add any unrouted calls to these routes or create new routes accordingly.

Prevent Additions to Non CALLED-OVER Routes - this will retain all current routes in the present state, and only attempt to add any unrouted calls to new routes.

Prevent Additions to CALLED-OVER Routes - this will retain in their current state only those current routes that have been marked as called-over (either by running the callover process or setting the flag using the menu option from the Summary Panel), and only attempt to add any unrouted calls to new routes.

The default option is set to Erase Existing Routes. To use this method click with the LHB on Go to start the process.

Progress indicators will appear to show the Initialisation and Routing phases.

On the graphics display each call appears as a dot on the screen, as routes are constructed lines of the same colour will link calls as they would appear on a single route; no link is displayed between the depot and first or last call point. To allow easier identification of different types of calls, the graphic display shows - normal deliveries - small circles, collections - large circles, deferred calls - crosses, carrier calls - small squares.

This process continues until the program has attempted to schedule all the calls possible, given the limitations placed on the routing by routing parameters. An indication of the progress of the routing process is given by the routing progress indicator.

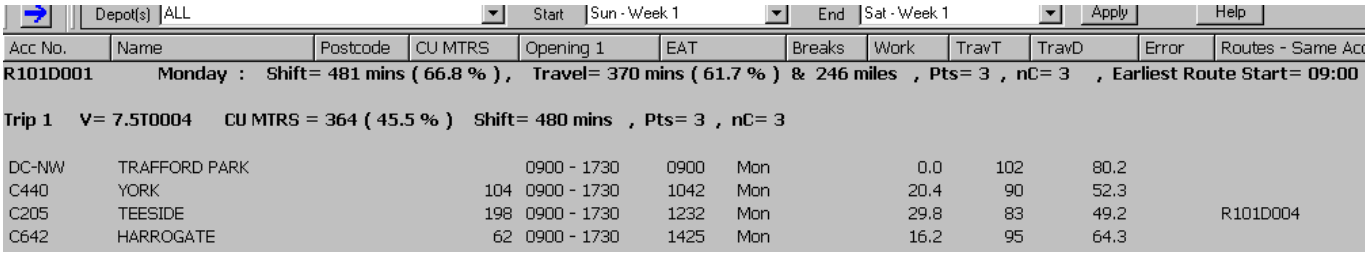
When routing is complete the program will return to New Egotrip mode to display the route information and deferred orders. If a call or order cannot be route by a planning program, it is possible to display a deferment reason code. Once the Reason Code column has been set in the required position using the Style, Deferments list menu option, a numeric value will be displayed. For more information see the section on **Route Planning Deferment Codes and Errors in Routes**

Other Options

First Week Tolerances can be used in conjunction with the Week No of First Drop field on a call to allow for a tolerance around a defined day. For example if a call has Week No = 3 and is delivered on a Friday, the call day restrictions would be set to 3333303; but if a delivery day + or – a tolerance was required, it is possible to set the day restrictions to be blank, define a nominated day of 0000010 and then set a tolerance using the drop-down boxes available. Thus a value of Before=1 and After=2 would allow routing on Friday of week 3, and also Thursday (week 3) and Monday & Tuesday (week 4).
All Deliveries must be on 1st Day of Route will force all deliveries to be on the first day of any route planned.; that is for a two day route there will be no deliveries planned for the second day of the route. This will be for driving and breaks only.

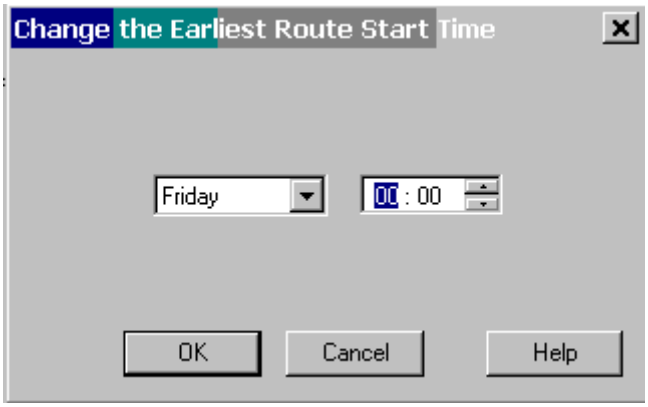
Saving Route Arrival Times in Vanguard

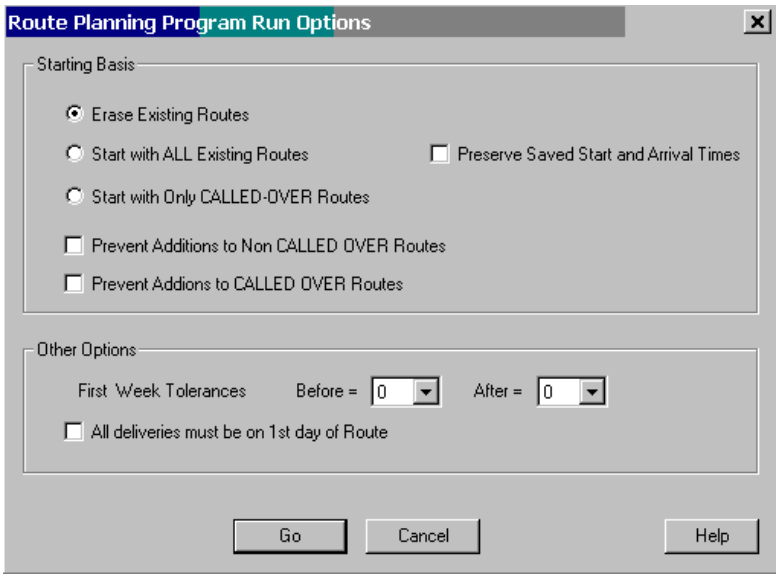
With the increasing complexity of route planning in strategic programs (including multiple driver shifts and 24hour running of vehicle across midnight), the planning programs have been modified to save all departure times from depots and arrival times at calls once the run is finished. This ensures that any manual intervention after the initial run cannot inadvertently affect much of the plan by re-calculating a range of times across a number of routes. The initial route start time is displayed as Earliest Route Start = on a route panel as part of the summary line (see below)



This time will be preserved whilst any manual changes are made to the route (either adding calls or removing them). It can only be re-set manually by use of the menu option - Change Earliest Route Departure Time or Change Trip Gate Departure Time. Setting the time to 00:00 (see diagram example for a Friday route) will remove the Saved Time and allow the program to re-calculate.

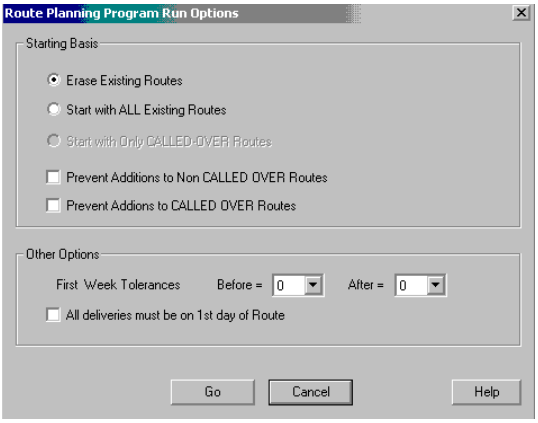
To set the required time, from the Text Panels or Summary View, click with the RHB on the required route or trip to display the pop-up menu. From the list of options select the Change option using the LHB. A Dialog window will then appear with a spin button to increment the hours or minutes accordingly. Alternatively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before. Use the drop-down box to set the day Choose OK to confirm and apply the changes or Cancel to quit.





If you wish to undertake further runs of Vanguard using the Existing Routes options to add to the routes you have, these Saved times can be entered into the subsequent run by ticking the Preserve Saved Start and Arrival Times option. It should be remembered that running with the Saved Times is very restrictive when attempting to add other calls to a route – in reality it may only enable other trips or routes to be created.

Daily Vehicle Scheduling with Dayplan



The Dayplan option may be used to produce 'optimised' vehicle schedules. Routing control parameters are available to influence the type of routes produced by the program, normally set in Routing Parameters. To route vehicles to deliver orders for the selected depots and dates set in the toolbar, select the Routes menu followed by Run Dayplan. The Planning Program dialog will appear. Use the default option to replace any existing routes and click with the LHB on Go to start the process.

Vehicle costings are a critical part of the vehicle scheduling process : the accumulated costs values are used to choose the best vehicle, with the cheapest option chosen from a list of acceptable alternatives.

There are a number of different options relating to the routing process and these are displayed in the form of radio buttons. Click the LHB on the required option to select it.
Erase Existing Routes - this will remove any existing routes and start the routing process again from scratch.
Start with ALL Existing Routes - this will retain all current routes and attempt to add any unrouted calls to these routes or create new routes accordingly.
Start with Only CALLED-OVER Routes - this will retain only those current routes that have been marked as called-over (either by running the callover process or setting the flag using the menu option from the Summary Panel), and attempt to add any unrouted calls to these routes or create new routes accordingly.
Prevent Additions to Non CALLED-OVER Routes - this will retain all current routes in the present state, and only attempt to add any unrouted calls to new routes.
Prevent Additions to CALLED-OVER Routes - this will retain in their current state only those current routes that have been marked as called-over (either by running the callover process or setting the flag using the menu option from the Summary Panel), and only attempt to add any unrouted calls to new routes.

The default option is set to Erase Existing Routes. To use this method click with the LHB on Go to start the process.

Progress indicators will appear to show the Initialisation and Routing phases.

On the graphics display each call appears as a dot on the screen, as routes are constructed lines of the same colour will link calls as they would appear on a single route; no link is displayed between the depot and first or last call point. To allow easier identification of different types of calls, the graphic display shows - normal deliveries - small circles, collections - large circles, deferred calls - crosses, carrier calls - small squares.

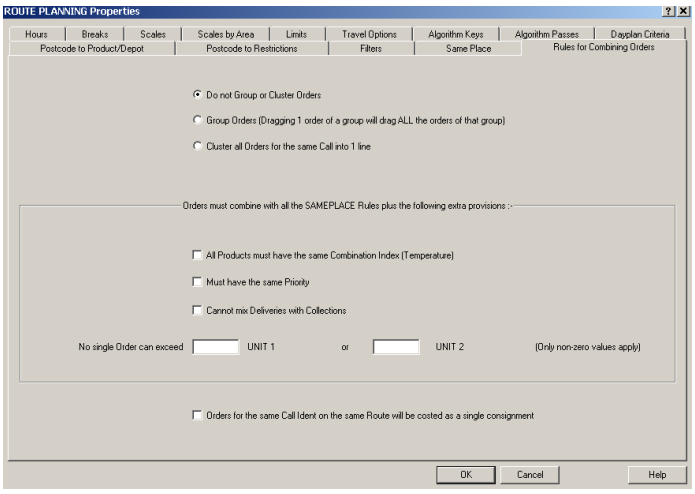
This process continues until the program has attempted to schedule all the calls possible, given the limitations placed on the routing by routing parameters.

When routing is complete the program will return to New Egotrip mode to display the route information and deferred orders. If a call or order cannot be route by a planning program, it is possible to display a deferment reason code. Once the Reason Code column has been set in the required position using the Style, Deferments list menu option, a numeric value will be displayed. For more information see the section on **Route Planning Deferment Codes and Errors in Routes.**

Other Options -

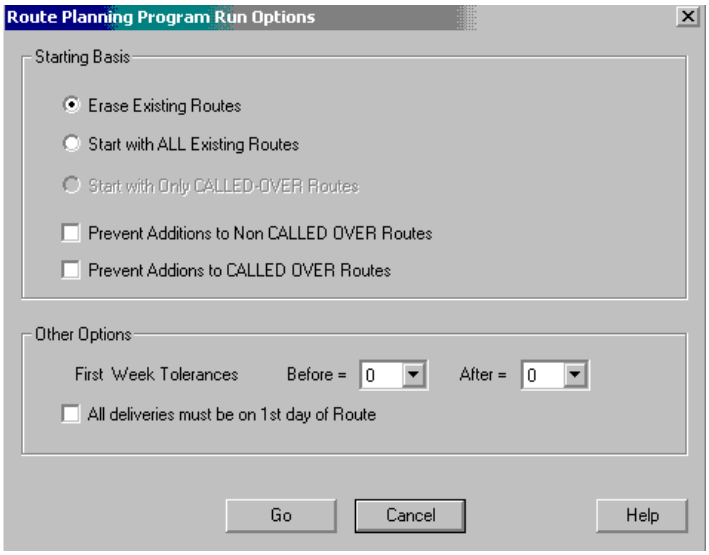
All Deliveries must be on 1st Day of Route will force all deliveries to be on the first day of any route planned.; that is for a two day route there will be no deliveries planned for the second day of the route. This will be for driving and breaks only.

Combining Orders for the Same Delivery Location



Orders can be grouped or clustered together to ensure all orders for the same delivery location are made on the same vehicle route at the same time. On the Routes Parameters Rules dialog, 3 options exist - No Grouping (orders are moved individually), cluster all Orders for the same call into one line (a single line is displayed for ALL orders for that call id), Group Orders (which displays orders individually on separate rows but groups them together when moving).

Scheduling Operatives with Manplan



The Manplan option may be used to produce 'optimised' schedules for operatives. Routing control parameters are available to influence the type of routes produced by the program, normally set in Routing Parameters. To route operatives to jobs for the selected depots and dates set in the toolbar, select the Routes menu followed by Run Manplan. The Planning Program dialog will appear. Use the default option to replace any existing routes and click with the LHB on Go to start the process.

There are a number of different options relating to the routing process and these are displayed in the form of radio buttons. Click the LHB on the required option to select it.

Erase Existing Routes - this will remove any existing routes and start the routing process again from scratch.

Start with ALL Existing Routes - this will retain all current routes and attempt to add any unrouted calls to these routes or create new routes accordingly.

Start with Only CALLED-OVER Routes - this will retain only those current routes that have been marked as called-over (either by running the callover process or setting the flag using the menu option from the Summary Panel), and attempt to add any unrouted calls to these routes or create new routes accordingly.

Prevent Additions to Non CALLED-OVER Routes - this will retain all current routes in the present state, and only attempt to add any unrouted calls to new routes.

Prevent Additions to CALLED-OVER Routes - this will retain in their current state only those current routes that have been marked as called-over (either by running the callover process or setting the flag using the menu option from the Summary Panel), and only attempt to add any unrouted calls to new routes.

The default option is set to Erase Existing Routes. To use this method click with the LHB on Go to start the process.

Progress indicators will appear to show the Initialisation and Routing phases.

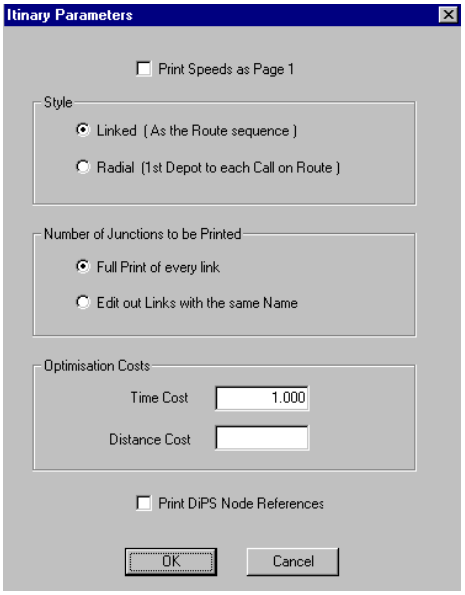
On the graphics display each call appears as a dot on the screen, as routes are constructed lines of the same colour will link calls as they would appear on a single route; no link is displayed between the depot and first or last call point.

This process continues until the program has attempted to schedule all the calls possible, given the limitations placed on the routing by routing parameters.

When routing is complete the program will return to New Egotrip mode to display the route information and deferred orders. If a call or order cannot be route by a planning program, it is possible to display a deferment reason code. Once the Reason Code column has been set in the required position using the Style, Deferments list menu option, a numeric value will be displayed. For more information see the section on **Route Planning Deferment Codes and Errors in Routes**

Route Directions with Itinary

One useful by-product of the DiPS UK Road Database and the System's ability to generate travel times and distances is the corresponding capability to generate route detail between given points. Itinerary is the print option provided for this feature. Simply tick the print option box and set the parameters as follows when the Parameters dialog appears.



The first section of output (if speeds tick box is set) lists the current road network parameters, including access information, road speeds for all classes of road, and congestion factors. The standard optimisation cost factors shown are also those currently set. For style, if linked is selected the route will be processed as it stands. If radial is selected a separate print will be provided from the origin depot to each of the calls on the route in turn. Every link may be printed or just where the road changes as selected by the radio buttons. Finally optimisation costs may be set for quickest time or shortest distance depending upon the higher cost values input (default is for minimum time). Finally DiPS node references may be printed. This is useful if road links are to be amended in the inidividual links section on road speeds (e.g. to close a section of road)

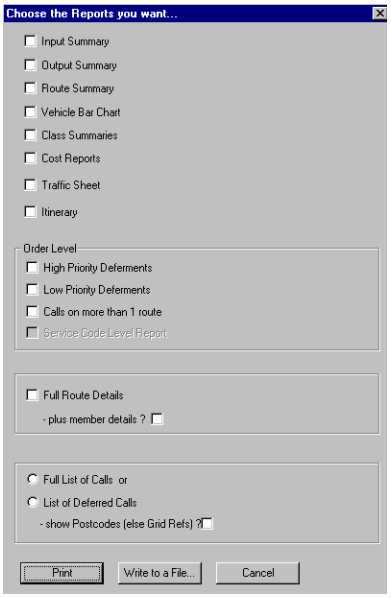
The output format is standard throughout all the various type of route processed. The first two columns display cumulative time and distance for each link of the route, the third displays a DiPS junction code number, which may be useful in identifying specific links on the road network. For instance the stretch of the M63 between Junction 8 and Junction 9 is identified on the roadfile as J257 to J256. The junction name, country and grid reference (Eastings , Northings or Lat , Lon), link name (which corresponds to road number - A556 (T) denotes a trunk road), and link attribute (DiPS road class number - 1 for motorways, 2 for dual-carriageway, 10 for urban A road for example), provide all relevant information regarding the road link used. Link time and distances will provide a breakdown of each section driven. Further development to the road network has enabled street names for main roads within urban areas to be adopted. Wherever such names are available they are displayed alongside the appropriate link. Total Time and Distance is printed beneath each route, with the appropriate average speed and cost calculations. A further breakdown of the route taken by road class is provided to facilitate any work being done on changing particular road speeds. An edited style print will merely give a line of output where the route has changed roads. In this case the link times and distances will show values for that road (see print example below).

```
Cum.  Cum.  DiPS                    Link  Link   Link  Link
Time  Dist  Code Junction Name      Grid  Ref.   Name  Attrib  Time  Dist Street Name

3.0  0.00       TRAFFORD PARK     3795  3965                3.0   0.00
5.0  0.40  Y129  Trafford Park UK  3790  3962  Access        2.0   0.40
9.3  1.98  J248  Eye Platt     UK  3793  3939  A5181   10    4.3   1.58 Mosley Rd
10.1 2.35  J247  J7  - Sale    UK  3791  3934  A56(T)  8     0.8   0.37 Chester Rd
```

For Linked routes, that is point A to B via C, D , E , and so on, a dotted line is used to seperate each particular leg of the journey.

Print Reports in Egotrip or Routes mode

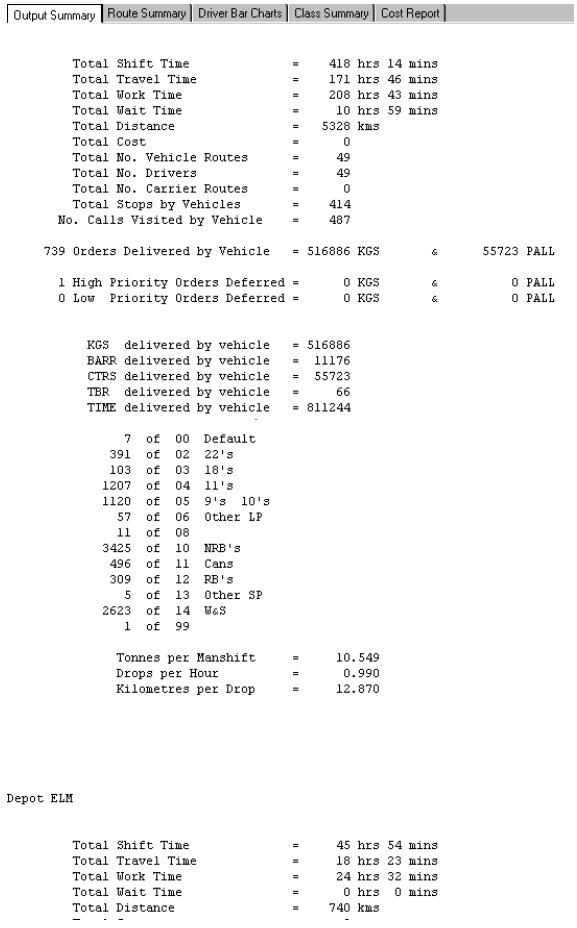


Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports.

To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

To print information for a single specific route click with the RHB in any route panel and select the Print menu option to display the Print Reports dialog window. This will allow the selection of certain output and pass it either to a printer or to create a file with the reports.

Report Types

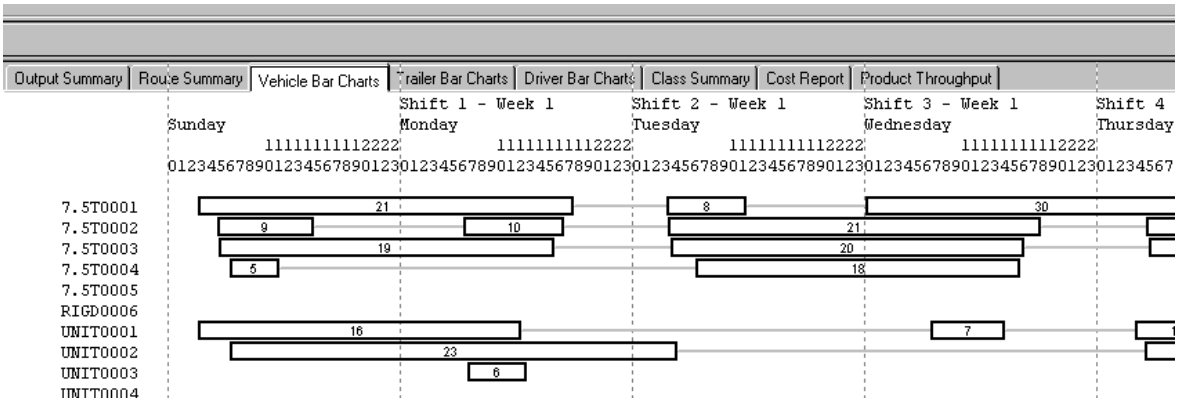


The Output Summary section gives the same basic total information as displayed on the program text window when the route planning is finished. It provides an overview of the totals planned and resource used. Where calls have not been routed, a summary of the deferred calls may follow this section listing the amount of calls and product and vehicle units currently deferred.

The route summary is a useful report. Using the Shift % and Capacity % columns, a quick analysis may be made of the success of the changes made. In terms of the other columns printed from left to right :

Route Ident gives the DiPS route reference number (used to re-print the route from Kingpin or amend in Egotrip)
Trip No. gives the trip number 1, 2, 3, etc.
Departure columns give the day and time of departure for each trip of the route
Veh+Trlr gives the vehicle class and trailer class in use (see the Traffic Sheet or full print for individual details)
Capacity section gives the Maximum Available Unit capacity, MaxU is the capacity used, and % the percentage utilisation figure
No. Pts is the number of individual calls visited and NC is the total number of drops made at those calls
Shift section gives the Maximum Available Shift Time, Used is the Time used, and % the percentage utilisation figure
Travel Time and Dist gives the route travel time and distance in appropriate units (miles or kms)
Work Time is the total work time for the route including pre-shift allowances, unloading/loading time at calls and any depot time incurred
Total Cost is the cost for that route based upon sum of vehicle/driver costs set
Std. Shift and Perf. % give standard shift times compared with the basic shift position if work or driving performance factors are set in Kingpin to represent the activity levels achieved in comparison with the levels without these factors.
CO_Seq is the Callover sequence no. for the route and *Fleet No* the allocated fleet code (daily planning)

Bar charts will demonstrate where drivers, tractor units, rigids, and trailers are utilised throughout the day. Each day is broken down into 24 1-hour sections represented across the top of the chart starting with **0** for midnight and ending with **23** for 11pm.
Where a trip starts within that hour a T will appear and a bar - will appear in every hour that the trip is away from the depot, even if it is for a single minute's duration. This logic applies to all the charts. A vehicle will only appear on the chart if it is used. Those vehicles not in use will NOT appear. The bar charts will appear for a 7 day period for each week of the plan.



The Resources Used by Class Summary will provide a breakdown by resource class (rigid,unit,trailer) and drivers of the totals used by depot by day for the plan as well as totals. The Total number of trips made by each class is also shown along with the number of calls visited, deliveries made, and nights out. The Unit 1 maximum available and used are also given to show % Utilisation (which is a function of maximum capacity of the class) and may be greater than 100% if resources are double-shifted, that is used by more than one driver in a day. (Example shows Unit 1 utilisation only.)

Output Summary | Route Summary | Vehicle Bar Charts | Trailer Bar Charts | Driver Bar Charts | Class Summary | Cost Report | Production Takeup

Resources Used by Class for Depot NE - Week No 1

			Sun	Mon	Tue	Wed	Thu	Fri	Sat	: TOTAL	Trips	Stops	NC	Nights	Ul-Max	Ul-Used	%	ST-Max	ST-Used	%	Miles	TravT
Rigids	: RIGD		0	0	1	0	0	1	0	: 2	2	23	23	0	1600	1462	91.4	1320	477	36.1	108	278
	7.5T		0	3	3	3	2	2	0	: 13	17	40	40	0	11050	2548	23.1	8580	3065	35.7	1435	2607
		TOTALS	0	3	4	3	2	3	0	: 15	19	63	63	0	12650	4010	31.7	9900	3542	35.8	1543	2885
Tractors	: UNIT		0	5	5	5	5	5	0	: 25	34	532	532	0				16500	12537	76.0	3671	8166
Trailers	: 40FT		0	6	7	7	7	7	0	: 34	34	532	532	0	34000	33296	97.9	22440	12537	55.9	3671	8166
Drivers	: Cat 9		0	5	5	5	5	5	0	: 25	53	595	595	0	46650	37306	80.0	16500	16079	97.4	5215	11051
Drivers	: Group 1		0	3	3	3	3	3	0	: 15	30	297	297	0	25250	18180	72.0	9900	9864	99.6	3548	7180
	Group 2		0	2	2	2	2	2	0	: 10	23	298	298	0	21400	19126	89.4	6600	6215	94.2	1666	3871
		TOTALS	0	5	5	5	5	5	0	: 25	53	595	595	0	46650	37306	80.0	16500	16079	97.4	5215	11051

Detailed costs are displayed for each depot for resources in use only. Those vehicles or trailers that have not been used at all during the planning period will not appear. Zeros are shown for resources not used on those particular days: each class and type is sub-totalled and overall grand totals are given for each depot.

Output Summary | Route Summary | Vehicle Bar Charts | Trailer Bar Charts | Driver Bar Charts | Class Summary | Cost Report | Production Takeu

Detailed Cost Report (Non-Zero Costs Only) for Depot NE - Week No 1

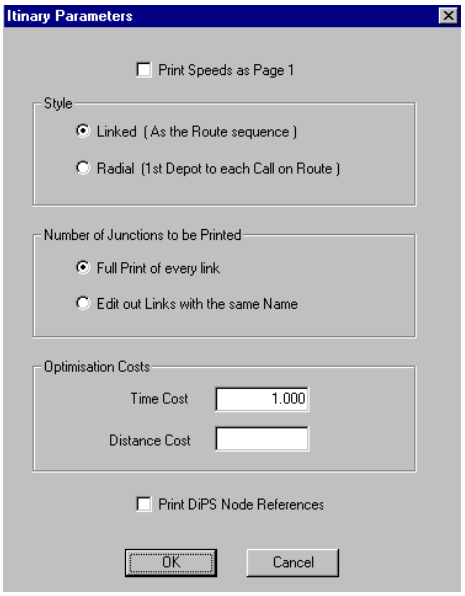
			Sun	Mon	Tue	Wed	Thu	Fri	Sat	: TOTAL
Rigids	: 7.5T0066		0	17385	9869	10674	21108	12042	0	: 71078
	7.5T0067		0	13362	7585	9066	13341	9665	0	: 53019
	7.5T0068		0	10537	2071	7576	0	0	0	: 20184
	RIGD0091		0	0	14917	0	0	3798	0	: 18715
		TOTALS	0	41284	34442	27316	34449	25505	0	: 162996
Trailers	: 40FT0006		0	25812	24250	21270	21834	20235	0	: 113401
	40FT0007		0	20061	22705	21399	19651	20716	0	: 104532
	40FT0008		0	20970	14088	22678	20520	15021	0	: 93277
	40FT0009		0	19651	15030	14464	11790	14877	0	: 75812
	40FT0010		0	10989	12126	16269	14436	14772	0	: 68592
	40FT0011		0	13450	13462	13518	16327	14512	0	: 71269
	40FT0012		0	0	13723	13804	12355	12153	0	: 52035
		TOTALS	0	110933	115384	123402	116913	112286	0	: 578918
Drivers	: NE-D001	(281)	0	90	90	89	89	89	0	: 447
	NE-D002	(282)	0	89	90	89	89	90	0	: 447
	NE-D003	(283)	0	89	89	89	89	89	0	: 445
	NE-DD001	(284)	0	89	89	89	89	89	0	: 445
	NE-DD002	(285)	0	89	87	88	89	76	0	: 429
		TOTALS	0	446	445	444	445	433	0	: 2213
		GRAND TOTALS	0	152663	150271	151162	151807	138224	0	: 744127

The Traffic Sheet print was designed to replace the old edited Route format. It displays depot ident, route,trip no. (separated by a dotted line), EAT start and finish times for the trip, the ident and address information (more is provided on the actual print than in the example). The Sl column identifies the delivery slot number for the call if slots are set up on the MASS file in KINGPIN. The EAT is shown for each location, along with the Vehicle units delivered (with totals for the trip in brackets at the bottom), and the vehicle and trailer combination used. The distances traveled for each trip are also shown at the bottom of the rigid or tractor column. WT has been designed to show work times and break times during the day.

The Full Route Print displays Vehicle and Capacity for each trip above the trip details, and the driver ident (usually Temp x @ Depot) at the top of each route. It is the only section of output which will show the inter-drop travel times and distances between all points visited. Work times are displayed for calls, depots (pre-shift allowance at start of day and turnround times between trips), and trip sub-totals. The e.a.t. column provides the earliest arrival time at each point. The q1 column displays the vehicle units delivered (or product if complex mixing logic is being used), and the Slot column shows the slot number used if slots are set for the call data. The break time column displays the point during the route at which a break has been taken and the appropriate times. Any values in brackets will represent time included in another section (work or break).

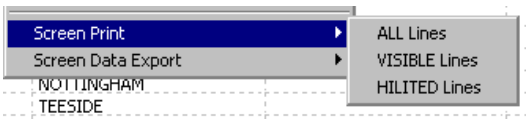
The Full List of Calls section shows address details for the call, demand figures (q1 column), frequency information (Fr), number of drops (NC), Opening Times and Days (for slot numbers where appropriate in the Sl column), the maximum vehicle allowed into the call (Max. Veh.), Work Time in minutes for loading or unloading, Call Priority value, Stem driving time from the delivery depot in minutes, crew size required (Cr), and route information. In the route information for each call, each week (wk1 = week 1), the route number is given for the departure day of the route delivering the call under the appropriate day. In this way if this is a multi-day route the delivery day may not necessarily be shown. Where Profiles or Slots are used the quantity delivered on each route will also be shown as well as the slot number used.
If the call is left unrouted a message will be printed accordingly complete with the relevant deferment code.

One useful by-product of the DiPS UK Road Database and the System's ability to generate travel times and distances is the corresponding capability to generate route detail between given points. Itinerary is the print option provided for this feature. Simply tick the print option box and set the parameters as follows when the Parameters dialog appears.



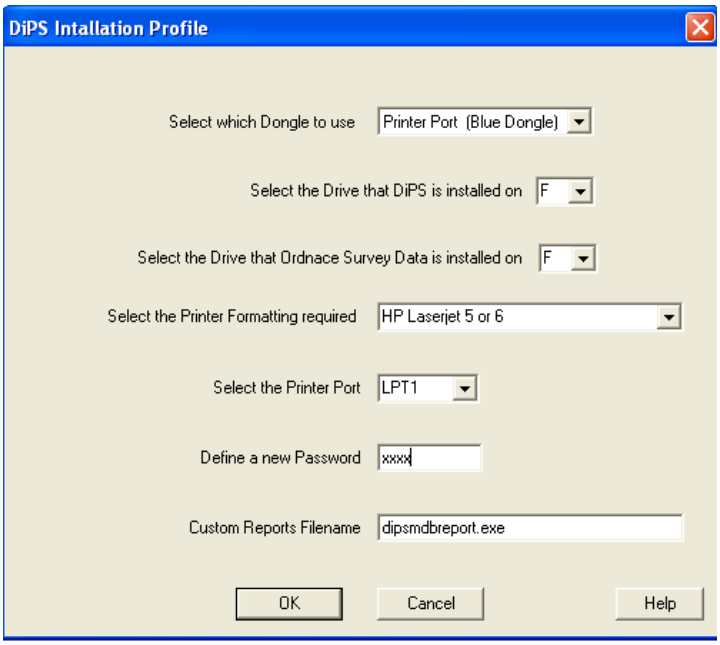
The first section of output (if speeds tick box is set) lists the current road network parameters, including access information, road speeds for all classes of road, and congestion factors. The standard optimisation cost factors shown are also those currently set. For style, if linked is selected the route will be processed as it stands. If radial is selected a separate print will be provided from the origin depot to each of the calls on the route in turn. Every link may be printed or just where the road changes as selected by the radio buttons. Finally optimisation costs may be set for quickest time or shortest distance depending upon the higher cost values input (default is for minimum time). Finally DiPS node references may be printed. This is useful if road links are to be amended in the inidividual links section on road speeds (e.g. to close a section of road)

Printing Screens



From Text Panels in all modes there are a number of print options for printing the screen as displayed (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB. ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed.

Custom Reports & Route Check Reports



To allow more flexibility in reports, a new item in the Routes menu list called Custom Reports has been introduced. This enables reports written using the Microsoft standard Business Objects Crystal Reports facility to be incorporated into the DiPS program. You will need Microsoft Office installed to run this facility.

Setting Up Custom Reports Facility

From the DiPS CD, choose Install Products and then select the option "Install Custom Reports". This is a Microsoft routine that will add the required Windows Components if they are not already installed on your PC.

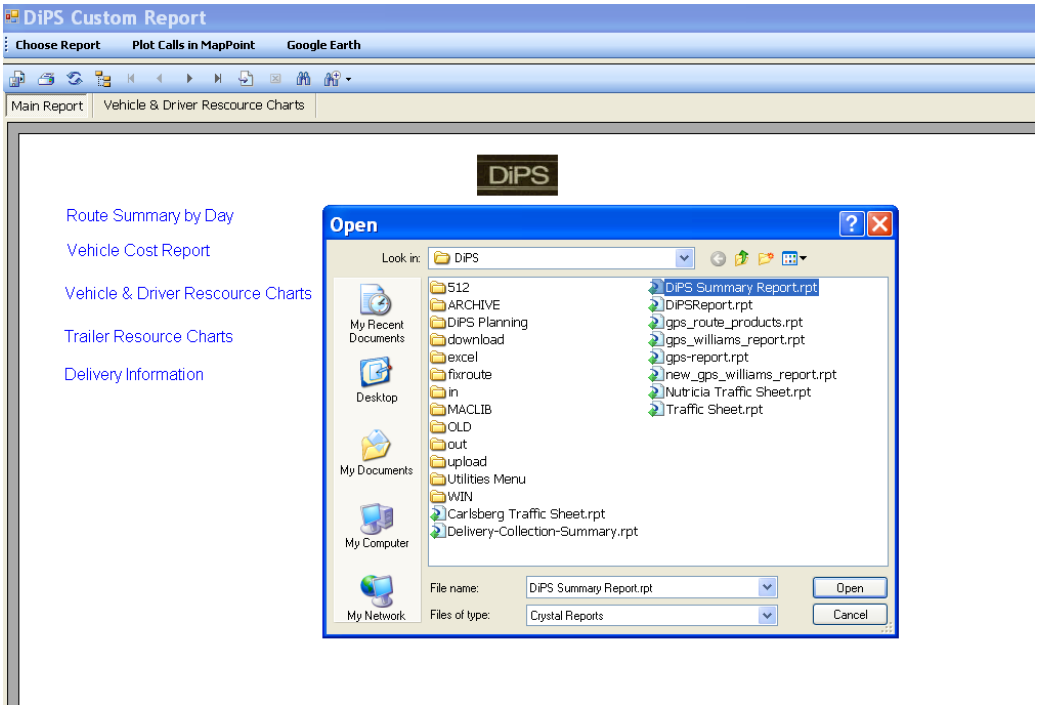
To activate the facility re-run the DiPS profile. Click File, Study and choose the Settings option. At the dialog click on the Change Settings button to display the Profile dialog. In the Custom reports Filename option, add the entry **dipsmdbreport.exe**.

When routes are visible in Egotrip mode, the Routes menu will now have an extra option available called Customised Reports. This will run a reports routine on the depots and days or dates applied.

Single routes can be printed using the menu option *Custom Report* on the menu accessed by clicking the right hand mouse button when a route is displayed.

Running Customised Reports

Click on the Routes, Customised Reports menu option and an export routine will initially create a database for the reports. A progress indicator will be displayed.



Once this export is complete, the Crystal Reports display dialog will appear. The **Choose Report** button will allow the selection of a company specific report or a general report. As an example, the standard file **"DiPS Summary Report"** is a good place to start, offering summaries, charts, and graphs as explained further below.

Once selected, the required report will then be displayed in the Reports window.

Use the toolbar icons to move around the pages of the report and Zoom or Find Text. Hover over the buttons to display help. Icons can also be used to Toggle a Tree View and Print or Export the report. Exported data can be passed into Excel, Adobe and Word formats using the Save as File type option.

Close the report once you have finished to revert back to DiPS.

DiPS Summary Report

Once displayed, the main report window will offer the following sections for selection:-

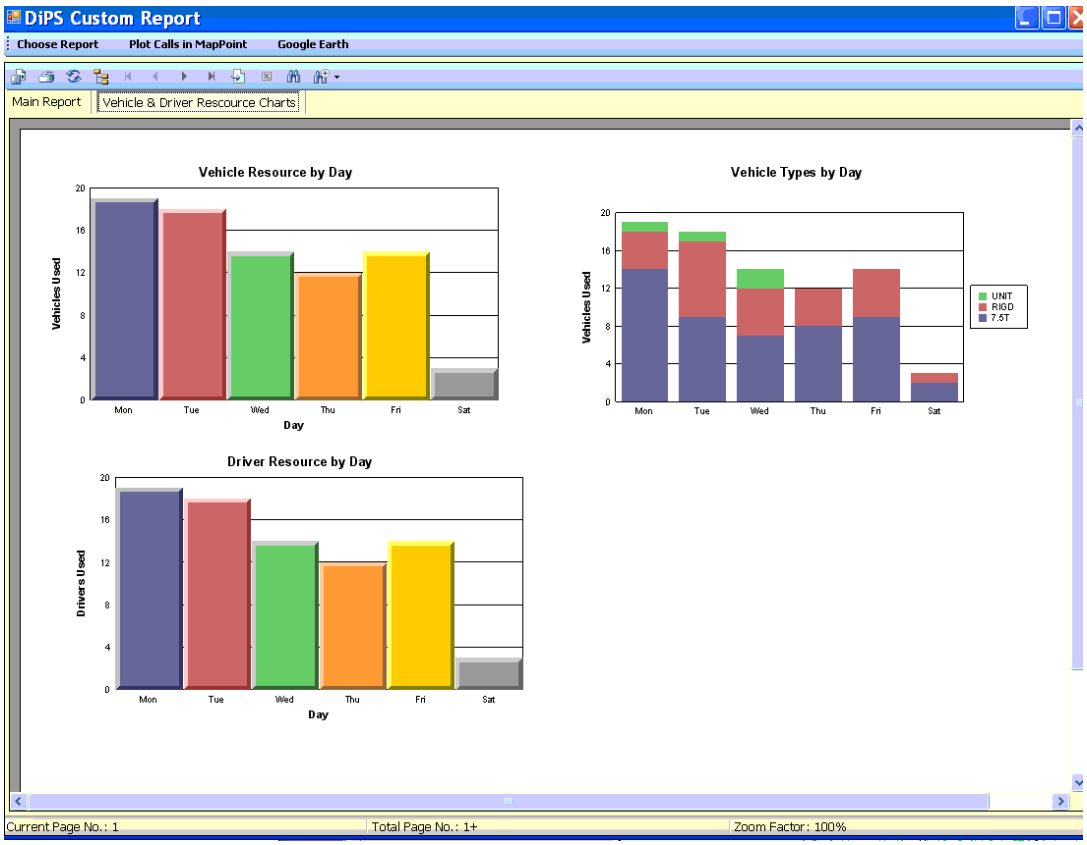
Route Summary by Day
Vehicle Cost Report
Vehicle & Driver Resource Charts
Trailer Resource Charts
Delivery Information

The **Route Summary by Day** report will give a table of individual route information broken down by day of week, including Shift Time, Travel Time, Distance, Breaks, Wait Time and Vehicle Units. A additional table and graphic chart will show averages by depot.

The **Vehicle Cost Report** will detail by day of the week for vehicle ident, costs for travel (distance + time values) and costs for the crew. An overall total line is also displayed.

The **Resource Charts** will graphically chart the resources used by type over the week. A chart of Vehicle Unit 1 delivered and collected over the week and a graph detailing each of the 12 products types despatched over the week can also be viewed.

The **Delivery Information** report has tables giving information over the weekdays for: Total Calls by Route, Vehicle Units by Depot (with % split of the overall depot total for each day), Delivery/Collection Vehicle Units by Call and Route, and Arrival times by Call and Route.



Additional Buttons

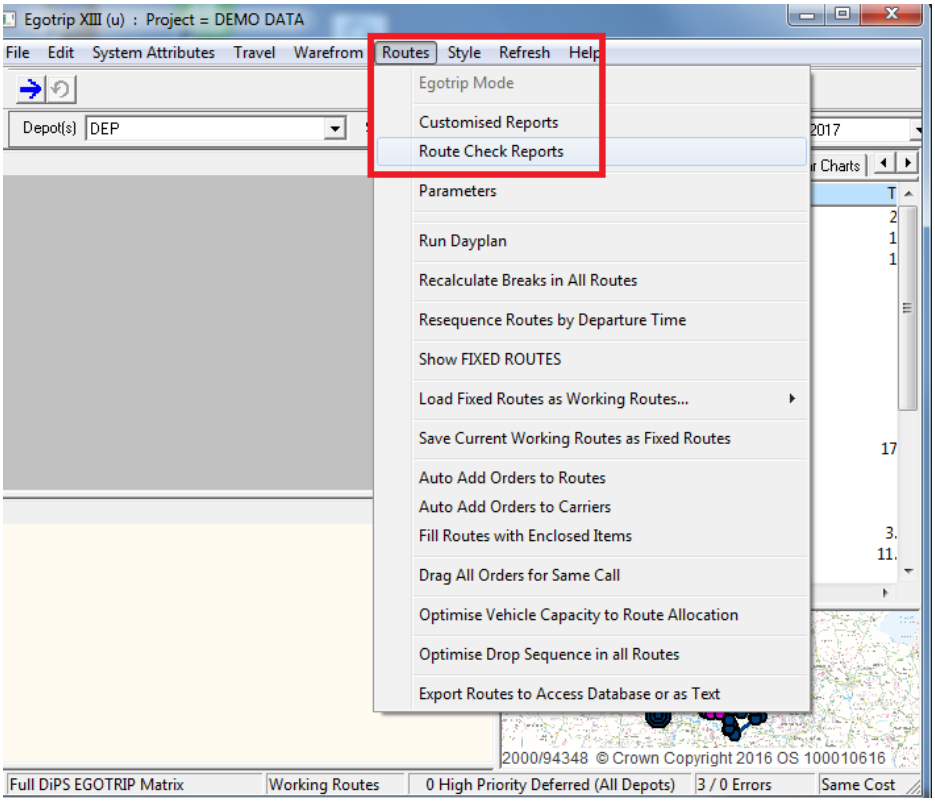
The **Export to CSV** button will export all the report into a CSV format file.

The **Google Maps** button will display another window split into 2 panels to show a table of the calls at the top and an Internet Explorer panel on the bottom displaying Google Maps. To display a call on the map, either select the required Postcode field of the call and click on the Find Selected Postcode button; or, to search for an address, select the appropriate row and use the Find Address button. Please note that the Internet Explorer panel is fully functional and can be operated separately by the user independently of the data section at the top.

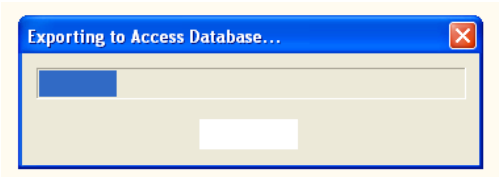
Route Check Reports – Customised Errror Checking

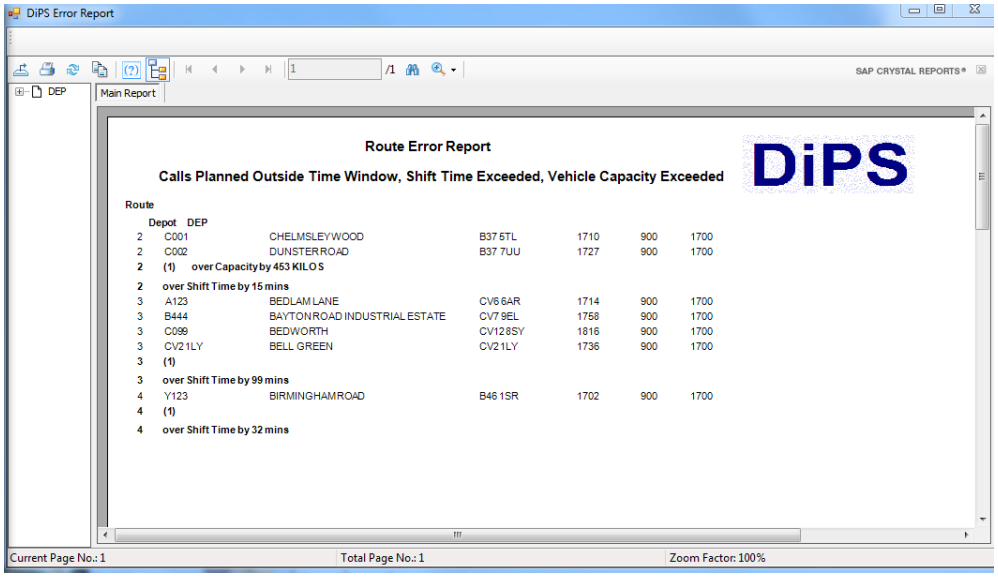
A new item in the Routes menu list called Route Check Reports has been introduced. This enables customised route error reports written using the Microsoft standard Business Objects Crystal Reports facility to be incorporated into the DiPS program.

A standard report is provided as default but can be modified to check for other requirements as required. Examples may be checks for Orders placed on carriers using Tag / SDI text or vehicle checks based on product combinations. Please contact support@dips.co.uk for more information.



The routines are based upon the usual Custom Reports facility so clicking on the menu option will initially create a database for the reports (showing a progress indicator). Once this export is complete, the Crystal Reports the required report will then be displayed in the Reports window.





Use the toolbar icons to move around the pages of the report and Zoom or Find Text. Hover over the buttons to display help. Icons can also be used to Toggle a Tree View and Print or Export the report. Exported data can be passed into Excel, Adobe and Word formats using the Save as File type option.

Close the report once you have finished to revert back to DiPS.

The routine requires an updated version of Custom Reports to be installed as the routine now shows the error report by default. The required files can be downloaded from the Customer Zone at www.dips.co.uk or installed from DVD as required. If the program isn't updated or the Error Report file is missing from the DiPS folder the Report as shown above will not display. Please let us know if you have any questions or require more information.

Optimise Vehicle Capacity to Route Allocation

This feature will re-allocate all routes to a new vehicle based on the available fleet, optimizing use of the vehicles so that the smallest vehicle is allocated to each route. All routes are processed, including those without a current vehicle. To activate this feature, simply click the menu item from the Routes menu.

Re-sequencing Routes by Departure Time

The menu option Re-sequence Routes by Departure Time will re-order the route numbers within each depot such that the route departing earliest in the day (i.e. with the earliest EAT) will have the lowest number.

Recalculate Breaks in all Routes

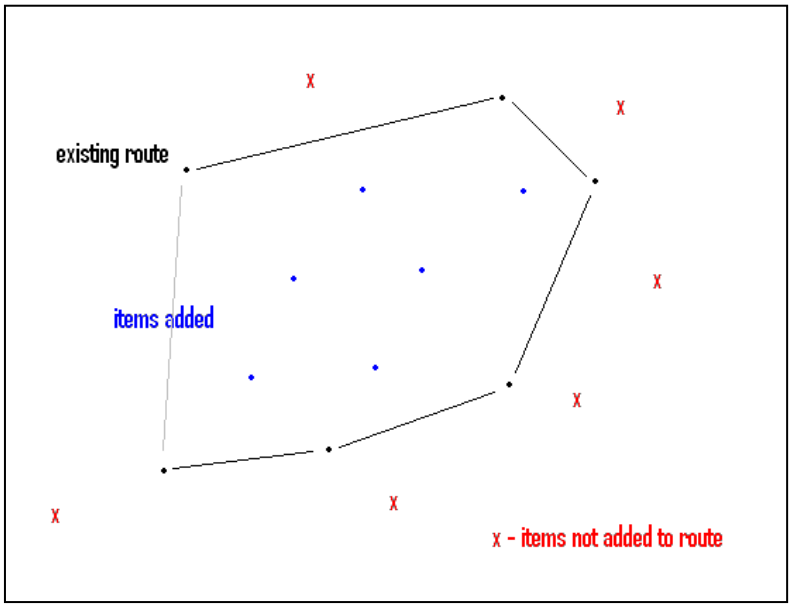
The menu option Recalculate Breaks in all routes will re-define the breaks in all current routes and calculate their best position.

Fill Routes with Enclosed Items

This facility is initiated using the Routes menu option and is available for both daily and strategic routing. It provides a method of adding calls or orders to existing routes by taking the envelope of the route and adding all items within that to the route.

The method employed in constructing the envelope will take lines between existing points on the route and then join the first and last links together. Everything lying within this area is then added to the route **irrespective of constraints** such as time windows or vehicle capacity, and the route is then optimised on travel time. Calls falling outside of any envelope are not added to a route. In the case of items lying within the envelope of a number of routes, they are added to the first route identified by the process.
Hence the process will work best with a limited number of pre-defined routes in any area.

Once the procedure is complete, the model will re-load and display the finished results.



Auto Add Orders to Carriers or Routes

This option will add automatically add Orders to calls or Postcodes on fixed routes transferred using the File, Transfer menu to be working routes for a day; or for carrier add all deferred orders to their best (cheapest) carrier list. Orders may also be added to routes automatically if either the Call Tag Field or the Order Tag field matches the Trip Label of a route. To activate this functionality use the System Attributes Tag Field option and tick the parameter on the dialog. The logic involved will look for all of the text in route trip label within the Tag field, i.e. the trip label may just be part of the Call or Order Tag. A minimum of a 3 character trip label is required. Orders will be added onto the end of any existing drops currently on the trip. Different labels may be used for each trip of a route to enable orders to be added to a first or second trip.

Drag All Orders for Same Call

This option, if set, will enable users to select and move all orders for the same call ident irrespective of any “deliver to” addresses on the calls or any Order Grouping logic set. If one order is selected and dragged onto or off a route, all orders are automatically highlighted and moved at the same time.

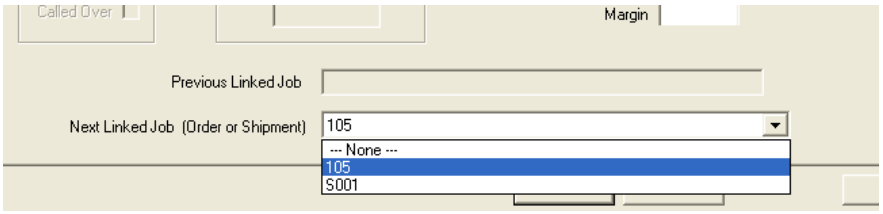
Optimise Vehicle Capacity to Route Allocation

This option will automatically optimise the sequence of all drops in all routes currently applied. If possible the routine will obey any time restrictions, but if time errors are already displayed for the route will operate and ignore EAT Errors to calculate the absolute minimum cost without reference to opening time restrictions.

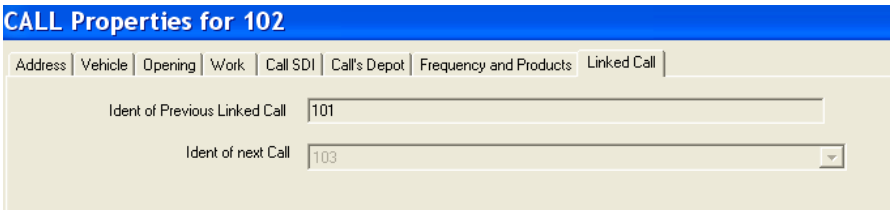
Using Linked Jobs to create Chains in Routes

In strategic or daily routing, a call, order or shipment ident may be specified to force another job to be done immediately after this one. The required ident may be specified on the relevant dialogs manually or loaded from spreadsheet or mainframe interface. In this way call chains may be established to define the route visiting a group of calls in a fixed sequence if Call1 has a Next Linked Job set to be Call2 and then Call3 is the Next Linked Job to Call2 and so forth. No other calls are placed in between the linked jobs when routing. These chains can be used to plan instances such as pickup/drop-offs, specific collections following particular deliveries, or customers with more than one delivery point in a town.

For an order, the information is entered in the Linked with Job dialog on the Order tab. For a shipment the same dialogs are available on the Shipment tab. Orders can be linked to shipments and vice-versa.

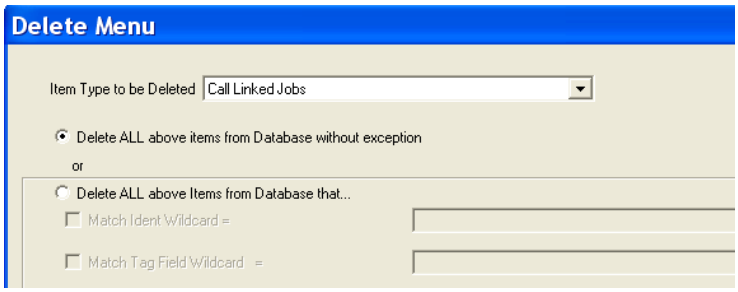


On a Call dialog, the required ident can be input on the Linked Call tab.



Links can't be removed or modified when routes exist: Entry fields on dialogs are greyed out where necessary.

The File, Delete Entities option is available to remove ALL Call Linked Jobs if required.



Loading Linked Job Data from Spreadsheet

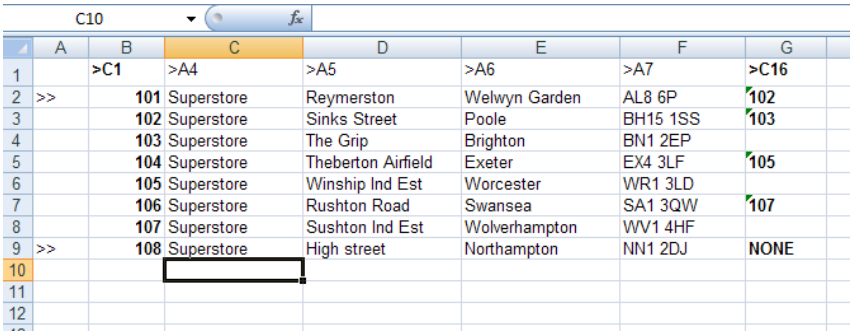
To set another id to be linked in the routing process, use **>C16 for Calls, >*12 for Orders or >S22 for shipments**. Use the word NONE to remove any linked job information as required (see cell G9 in the example below).

>*12 Order Linked Job (text field with the ident of an order to be routed next)

>S22 Shipment Linked Job (text field with the ident of a shipment to be routed next)

>C16 Linked Call (text field with the ident of a call to be routed next)

NONE (to remove un-wanted next call links)



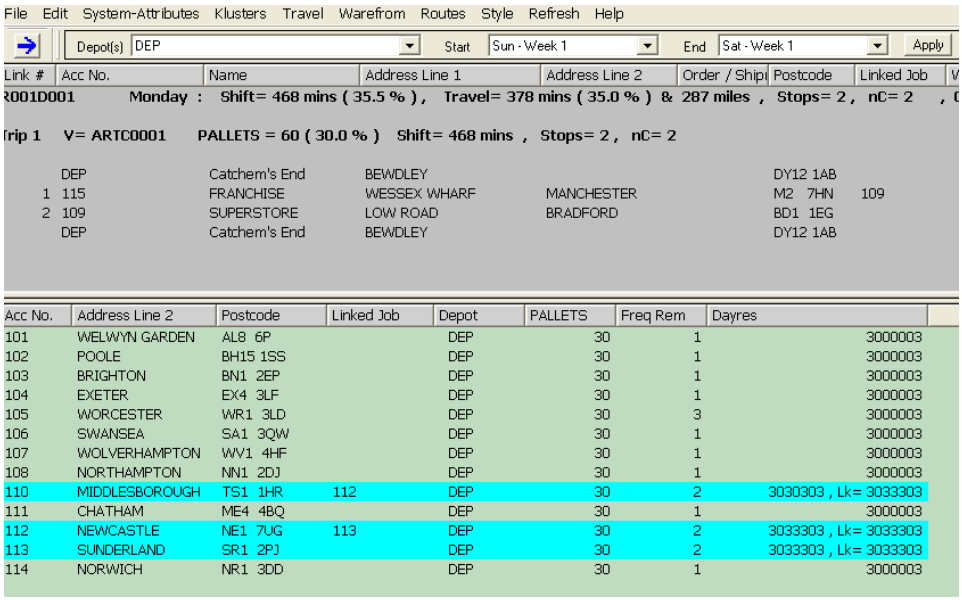
	A	B	C	D	E	F	G
1		>C1	>A4	>A5	>A6	>A7	>C16
2	>>	101	Superstore	Reymerston	Welwyn Garden	AL8 6P	102
3		102	Superstore	Sinks Street	Poole	BH15 1SS	103
4		103	Superstore	The Grip	Brighton	BN1 2EP	
5		104	Superstore	Theberton Airfield	Exeter	EX4 3LF	105
6		105	Superstore	Winship Ind Est	Worcester	WR1 3LD	
7		106	Superstore	Rushton Road	Swansea	SA1 3QW	107
8		107	Superstore	Sushton Ind Est	Wolverhampton	WV1 4HF	
9	>>	108	Superstore	High street	Northampton	NN1 2DJ	NONE
10							
11							
12							

The information is visible throughout the program using the Style, Headings as appropriate.

Calls, Orders and Shipments have Kingpin Column Headings – Next / Previous Linked Job
Route, Deferred, List, Matrix, Warefrom and Hover Headings have the Linked Job column to display information.

Routing Linked Jobs

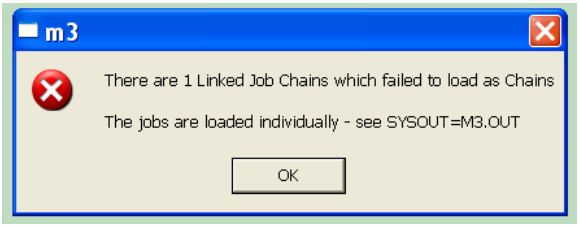
When routing, the column heading “Linked Job” can be used to display the chains. Routing programs will only plan entire chains: there is no splitting done and if all the links cannot be placed onto a single route, the entire chain is left un-routed. When chains are moved manually, all the calls in the chain are automatically dragged by the right hand mouse button (there is no need to highlight all the calls). In the Deferred List, the chain is also highlighted if one of the calls is selected by clicking on it with the left hand mouse button.



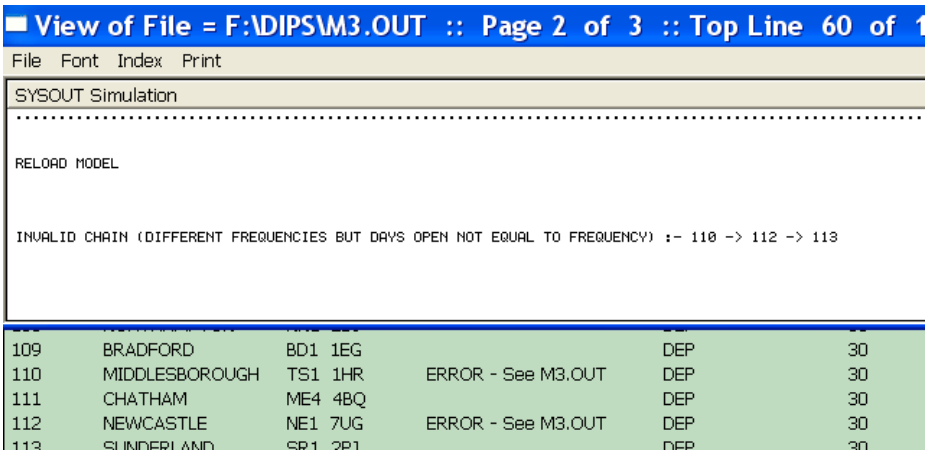
Strategic Studies

If call frequencies are greater than 1 (i.e. multiple visits to the chain), the day restrictions and frequencies for all the calls in the chain must be equal. For example with a frequency of 2 it is possible to have 3 available delivery days within a week as long as the open days are the same for all the calls. Day Restrictions information for the linked calls are displayed in the dayres column (see screen image above)

If the frequencies are different for the calls in a chain on entering Egotrip mode or running a routing program a message will appear summarising the errors.



Detailed error information is written to the file M3.OUT, which can be looked at using the File, View Sysout File option. Errors are also shown in the Linked Job column in the green deferred list.



Working with Fixed Routes for Daily Planning

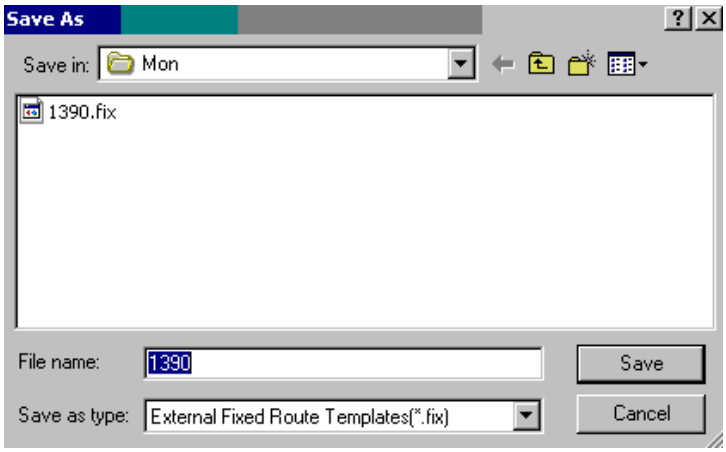
An additional facility of the DiPS system is the ability to set up 'skeleton routes' as a basis for automatic scheduling in Dayplan or Egotrip amendment. Routes are set-up either at Call level using individual customers from the database, at Postcode level using the postcode areas provided (e.g. AB11 , B1 , EC1V etc.) or using Dummy Shipment data. They can be established using specific sequences of call/postcode/shipment, vehicles, length in days, and so forth, and Dayplan will automatically add additional orders to the route if possible. The type of data for fixed route is set using the System Attributes menu option Set Fixed Route Members to… and selecting either Calls, Postcode Areas or Dummy Shipments. The routes set-up function is accessible from the Routes Menu option and must use any one of the options : it is not permissible to mix types.

FIXED ROUTES can be established for each day of the week, with the routes being set up and amended when necessary using EGOTRIP. These fixed patterns are then transferred to working routes each day prior to the downloading of orders. After this procedure is completed a DAYPLAN run can be attempted or the EGOTRIP program used to amend these routes.

Creating Fixed Routes

To establish and maintain Fixed routes, use the Routes, Show FIXED Routes option to display the Fixed routes rather than the working routes that are displayed by default. The route numbers employed involve a 4 digit number with the first number being the appropriate week day number (e.g. 3 for Wednesday in a Monday-Friday operation), and the next 3 digits representing the route number that will correspond to this fixed route when used in daily operations. The Status Bar route field will then show Fixed Routes rather than Working Routes. All other route functionality (including adding/moving/removing data) is as for working routes. All Fixed Route details are saved automatically in the same way as Working Routes. To revert back to Working Routes , use the Routes, Show WORKING Routes option.

Another method of creating Fixed Routes is to use the menu option Routes , Save Current Working Routes as Fixed Routes. This will take all routes for that date and create appropriate fixed routes with calls or postcodes for that day. It also involves creating a template macro file (.FIX) that can also serve as a backup for the fixed routes. The process will initially save the routes to the MASS database file, and then present a Save As dialog for the backup macro file. **Any fixed routes for this day will be deleted and replaced with the new set as part of this process.** A confirmation message will be displayed accordingly.



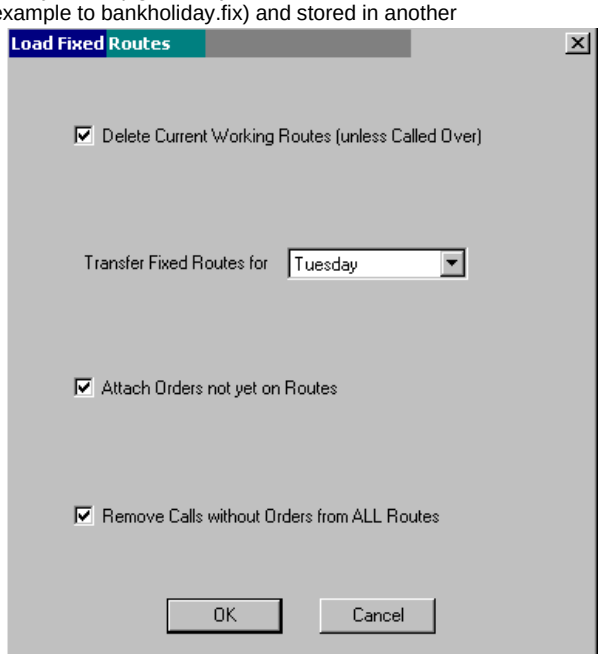
The initial filename displayed will be in the format of the number of orders and will be saved in a folder with the day name (eg Monday with 1390 orders would be \dips\fixroute\mon\1390.fix). This filename can be changed and stored in another folder as required.

Routes saved in this way can then be amended as described above in Show Fixed Routes.

Similar to this method, fixed routes can also be established from current Working Routes using on any day using the Working to Fixed transfer in the File, Transfer menu.

Creating Fixed Route Template Files

Rather than creating and maintaining Fixed Route on the MASS file database, template macro files can be created for particular operating patterns (eg Friday deliveries with a large order volume). The files saved above when creating Fixed Routes from Current Routes can be used as a starting basis for planning in the future The initial filename displayed will be in the format of the number of orders and will be saved in a folder with the day name (eg Monday with 1390 orders would be \dips\fixroute\mon\1390.fix). This filename can easily be changed (for example to bankholiday.fix) and stored in another folder as required. These routes can then be used at a later date. Note that once saved, this file cannot easily be amended in its macro format.



Using Fixed Routes

Fixed Route patterns may be implemented once orders are loaded in a variety of ways.

Transfer Menu

Fixed route patterns can be moved from Fixed to Working routes using the File, Transfer menu option. Both Dummy's Day of Week and a date must be input. To add Orders to these routes once

transferred use the Routes menu option – **Auto Add Orders to Routes.**

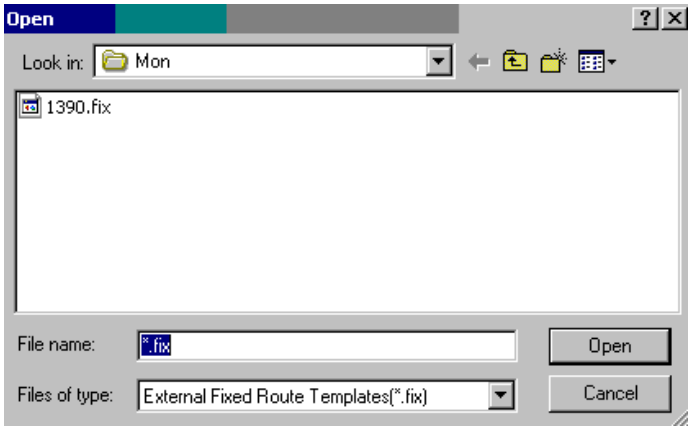
Routes Menu Option

The Routes , Load Fixed Routes as Working Routes option will take a fixed route pattern for day and apply it to the current set of orders, either using Fixed Routes saved on the MASS file or loaded from an external Template .FIX file saved after a previous plan.

There two choices are always preceded by the options menu shown. Tick the required actions : to remove any existing routes, then create new working routes from the fixed pattern, attach orders to routes, and remove any calls./ postcodes without orders from them. If an option is not required (such as Remove Calls) simply clear the tick box before continuing.

The drop-down list for days is set by the start/end dates currently applied. It can be modified, however, to allow fixed route patterns for one day to be routed on another; for situations such as bank holidays and Christmas / New Year working. Be sure to set the correct day before continuing.

If using Fixed Routes from this MASS file, the process will then continue automatically to complete the required options and present the routes accordingly.



If loading from an external Template .FIX file, a selection dialog will then appear, offering all the template files for the day in question. Select a file from the list and then click on the Open button to continue to completion.

These options may always be repeated if the required result is not as desired, or if may prove beneficial to employ another template file.

The LOAD FIXED ROUTE Algorithm Pass in Route Parameters

To make the use of fixed routes in automatic scheduling easier, the LOAD FIXED ROUTE facility is used to allow a fixed route pattern to be input after orders have been loaded. This is then used in the Run, Dayplan function.

Set the parameter in Route Parameters, Algorithm Passes option. If the Pass is instigated a dialog will appear with radio buttons to indicate the required day for Fixed Routes. The Orders will then be attached to the appropriate route and the route optimised. This facility is normally used as a 1st Pass, and can be used in isolation to present a true fixed route pattern, or with additional passes to add any other orders to these routes or create additional routes.

Using Postcodes with Fixed Routes

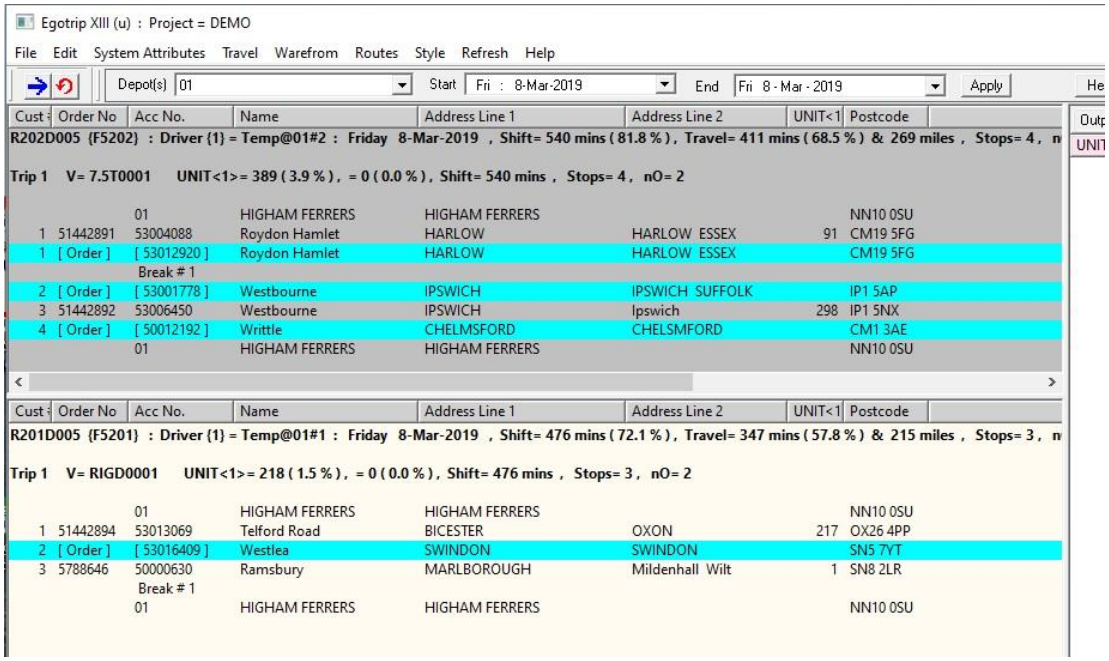
When using Postcodes with Fixed Routes, on entering Fixed Route mode all the postcodes will initially be transferred to their appropriate depot by the Postcode to Depot table visible in Route Parameters. This will allow individual depots to be selected omitting other postcodes. The current allocation of postcodes to depot may also be saved as the Postcode to Depot table if required by using the Warefrom menu option Save Current Allocations when in Fixed Routes mode. Postcodes will also be omitted based upon their appropriate Day Restrictions field in the Postcode to Carrier or Day Restriction table depending upon the days selected in the Start / Finish toolbar. The Zone field may be used for information purposes as the last 4 characters are displayed as the Tag Field for the Postcode areas.

Using Dummy Shipments with Fixed Routes

A dummy shipment is a default movement that can be set up between two call points. When using Dummy Shipments with Fixed Routes, on entering Fixed Route mode all the shipments will be displayed in the deferred list and these can be dragged onto appropriate routes. It is important to note that when adding a dummy shipment to a route, the departure days for the shipment and route must correspond, i.e. if the shipment is set up to be valid Monday to Friday, the route must also depart on those days for the fixed pattern to operate correctly. It also worthwhile to note that when using the Algorithm Passes option both actual shipments and working routes will be created from the dummy data and fixed route plans.

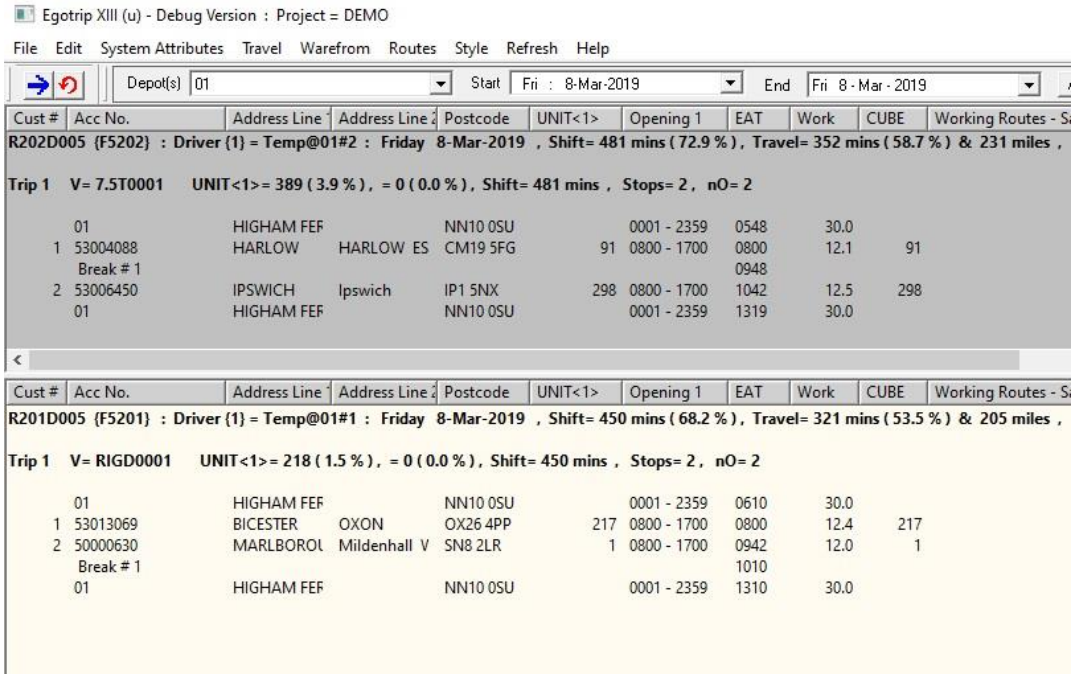
Removing ALL Calls without an Order from Routes in Daily Planning

A new facility has been added for use when routing daily with orders and using Fixed Routes for planning. When using the Transfer Fixed Routes to Working Routes menu option at the dialog, un-tick the last option to Remove Calls when loading orders. This will leave calls on fixed routes that have not yet placed an Order allowing multiple downloads during the day to add to the routes (see calls highlighted in the image below). It was always possible for a single individual route to remove calls that haven't ordered using the route menu option "Delete all calls without an Order".



Now it is possible to do this for all routes at once using the Routes menu option -
Delete all Calls without an Order from Routes

The process looks at each route in turn (loop through in the top route panel) and removes from that route before moving to the next. Routes are then shown re-calculated as required with all calls removed.



Please note that this action cannot be un-done once activated so do File, Backup first if necessary (or Archive as required).

Routes Menu - Egotrip Mode to Change Routes

Display Routes to work with

Adding a Route Number to the Text Panels

From the Graphics Panel

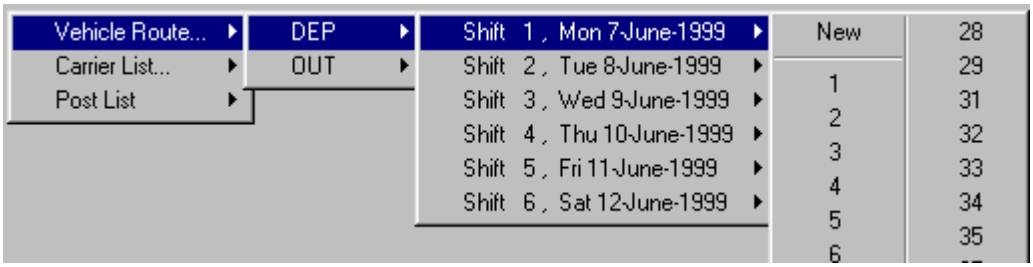
Point to any link in the required route and click the left mouse button as follows -

single click	display the route in the top text panel
double click	display the route in the middle text panel
click three times	display the route in a pop-up window (repeat for multiple routes)

From a Route Panel

To display a route or change the current route click with the RHB in a text panel or pop-up route window to display the pop-up menu. The list of options includes Vehicle Route, carrier List and Post List.

Each of these has further cascade menus to display all the current routes. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of DiPS shift numbers and either days or dates for strategic or daily planning. Moving over the shift or date required offers the choice of all the routes currently at that depot and a **New** option. Using the LHB click once to add an existing route or if New is selected a further pop-up box will appear to display the Route length slide bar to select the route length in days (if applicable). The default setting will always be for a 1 day route. If you need to amend the length click with the LHB on the slide bar to select it. Click and hold down the LHB to drag the indicator to a new route length or point to the required number and click the LHB. Note that the maximum shown will not allow a route to overlap the same route number on a subsequent day. Click the OK button to display the route.



The same functionality applies to both the Carrier and Post lists.

From the Summary Panel

Point to the route number (RxxxDxxx) or the ‘T’ or ‘R’ in Vehicle/Driver reports and click the left mouse button as follows -

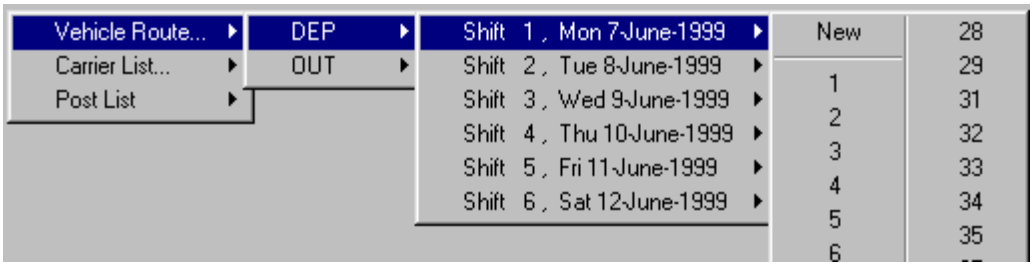
single click	display the route in the top text panel
double click	display the route in the middle text panel
click three times	display the route in a pop-up window (repeat for multiple routes)

When Routes are visible, pressing the **F3** key will jump to the next route in sequence and display the route in the top route panel. Pressing the key again will move to the next and so on. At the end of the list it will loop round and show the first route again. The **F4** key will display the previous route, whilst the **F2** key will jump through all the routes in error. Using the F3/F4 buttons when you have a “pop-up graphic zoomed to this trip” map on screen will show each route in turn on the map as well as in the text panel. This makes it possible to review each route quickly using both the text panel and a dedicated map of the route at the same time.

Create a new Route

This process can be done from any text route panel. Click with the RHB to display the pop-up menu. The list of options includes Vehicle Route, Carrier/Customer Lists and Post List.

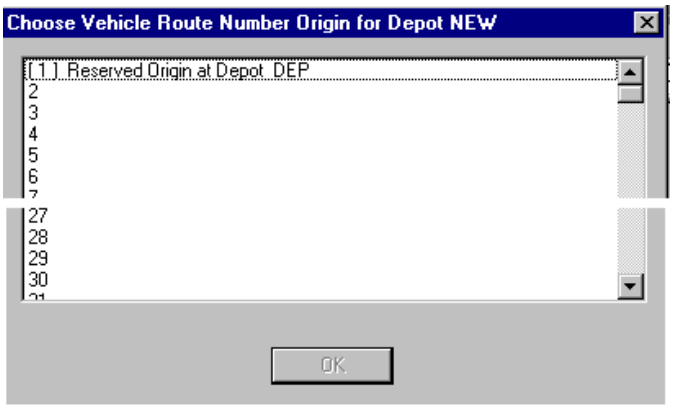
Each of these has further cascade menus to display all the current routes. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of DiPS shift numbers and either days or dates for strategic or daily planning. Moving over the shift or date required offers the choice of all the routes currently at that depot and a **New** option. Using the LHB click once to add an existing route or if New is selected a further pop-up box will appear to display the Route length slide bar to select the route length in days (if applicable). The default setting will always be for a 1 day route. If you need to amend the length click with the LHB on the slide bar to select it. Click and hold down the LHB to drag the indicator to a new route length or point to the required number and click the LHB. Note that the maximum shown will not allow a route to overlap the same route number on a subsequent day. Click the OK button to display the route.



New routes and lists can also be created from the Summary Panel using the Route Summary section. Each depot is displayed above the appropriate summary section listing all routes. Click with the RHB on the depot name and from the menu select the required option to receive the dialogs above.

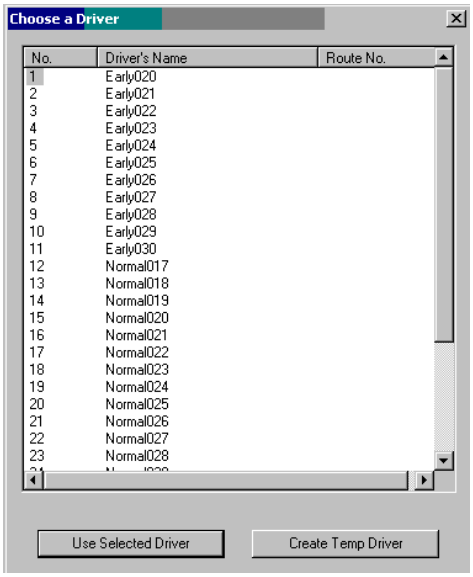
Setting a Route Sequence Number for a new Depot

If the required route is for a new depot without a sequence number a dialog box will appear giving routes 1-999 as possible starting sequence numbers for the depot. Those in use by existing depots will be shown as reserved. Select a number using the LHB and click OK.



Using Driver Classes

Individual Drivers or Types of Driver (called Classes in DiPS) may be created using the Depot's Drivers Page. A Class might be though of as DAYS or NIGHTS for example, with each type having its own defined parameters such as Start Time, Finish Time, Maximum Daily Shift Time and so forth. If driver classes are set, the choose a driver dialog will appear. Select either a defined driver (to set all his attributes in place), or simply click on Create Temp Driver to allocate a temporary driver to the route (which will use ordinary standards set in Route Parameters).

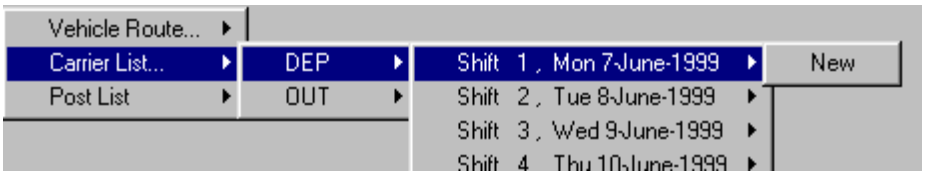


Create a Carrier List or Customer Collect List

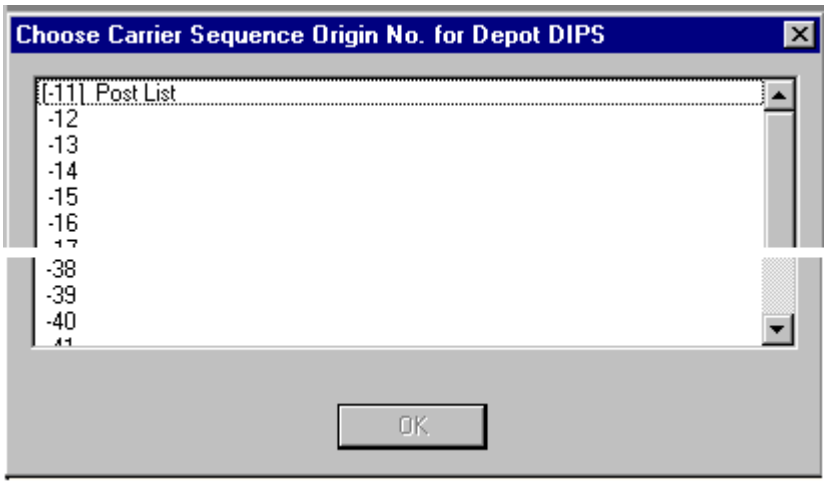
This process can be done from any text route panel. Click with the RHB to display the pop-up menu. The list of options includes Carrier List and Customer Collect List.

Carrier List

Each of these has further cascade menus to display all the current routes. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of dates. Moving over the date required offers the choice of all the lists currently at that depot and a **New** option. Using the LHB click once to add a New Carrier List.



New routes and lists can also be created from the Summary Panel using the Route Summary section. Each depot is displayed above the appropriate summary section listing all routes. Click with the RHB on the depot name and from the menu select the required option to receive the dialogs above.

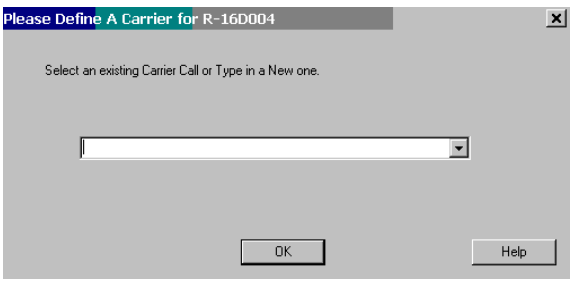


A dialog box will then appear with a choice of numbers available

Use the LHB to select a number and then click the OK button.

Create or Change a Carrier Name

Once a list is established a name dialog will appear to input the Carrier name for this list. Input the required name and click the OK button. The list is then displayed. Later to change the name from a route panel or the summary view, click with the RHB on the required carrier route to display the pop-up menu. Using the LHB click once on the Change Carrier Name option. This box will initially re-display the dialog, edit and then click with the LHB on OK to create the Carrier Name or choose Cancel to exit.



Customer Collect List

A Customer Collect list works in the same way as a Carrier List but does not use a Carrier Name. There can be only ONE Customer Collect List for each depot. Use the route cascade menus to display all the current routes. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of dates. Moving over the date required offers the choice of all the lists currently at that depot and a **New** option. Using the LHB click once to add a New Customer Collect List. New routes and lists can also be created from the Summary Panel using the Route Summary section. Each depot is displayed above the appropriate summary section listing all routes. Click with the RHB on the depot name and from the menu select the required option to receive the dialogs above.

A dialog box will then appear with a choice of numbers available

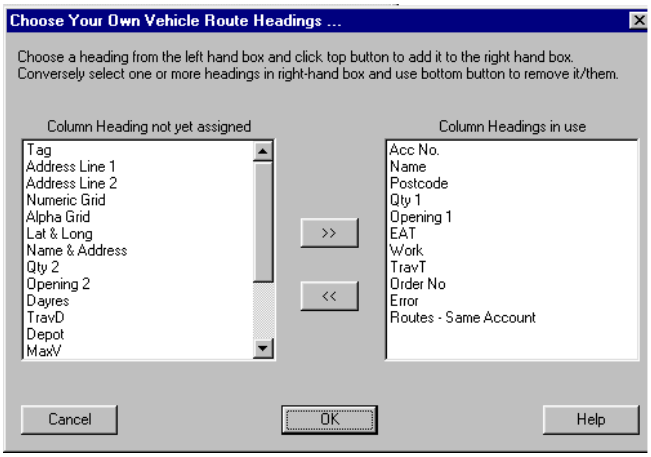
Use the LHB to select a number and then click the OK button.

Setting or Modifying a Style to work with Carrier Headings

The Style menu options are used to control size and position details for windows, panels and route columns for each user. The Style is continually modified as windows are re-sized during any session. When a user logs onto Egotrip at the initial dialog window the previous settings are restored.

The Style menu itself offers the following commands to control headings in the text areas :

The available column headings are displayed in the left hand selection box and include options such as account no., order no., address, times, quantities, access restrictions, work times, and error codes. The headings currently in use are displayed in the right hand box in the order the will appear from left to right in a route panel (i.e. the top heading will appear on the far left). To select a heading and add it to the bottom of the current list, click on the heading with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. These will be added to the list in the order selected. The sequence of headings in the right hand box may also be changed by clicking on a heading with the LHB to select it and then using the RHB to drag it to a new position in the list.



Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the available list.

Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous order.

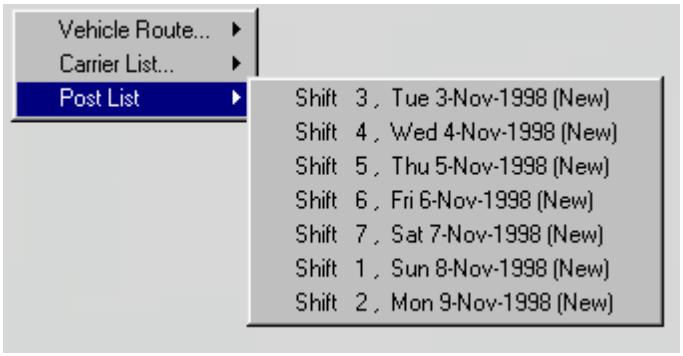
Using Carriers when Routing in Egotrip Mode

In Egotrip mode, costs for all applicable carriers are compared on loading and a lowest cost “Best Carrier” is found. This information may be displayed on screen using the Style headings Best Carrier, Carrier Table and Carrier Cost. To allocate orders to their best carriers, use either the menu option from the popup menu – **Allocate to Best Carrier**, or to do all unrouted orders in one go - the Routes menu option **Auto Add Orders to Carriers**. Orders can also be dragged onto any relevant carrier list (not only the cheapest choice), with any not on their cheapest being flagged as an error. Orders cannot be dragged onto carriers that cannot satisfy their requirements (products, postcodes, service level etc).

Create a Post List

This process can be done from any text route panel. Click with the RHB to display the pop-up menu. The list of options includes Post List.

Each of these has further cascade menus to display all the current routes. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of dates. Moving over the date required offers the choice of all the lists currently at that depot and a **New** option if the Post list does not exist for that date. Using the LHB click once to add a Post List.



New routes and lists can also be created from the Summary Panel using the Route Summary section. Each depot is displayed above the appropriate summary section listing all routes. Click with the RHB on the depot name and from the menu select the required option to receive the dialogs above.

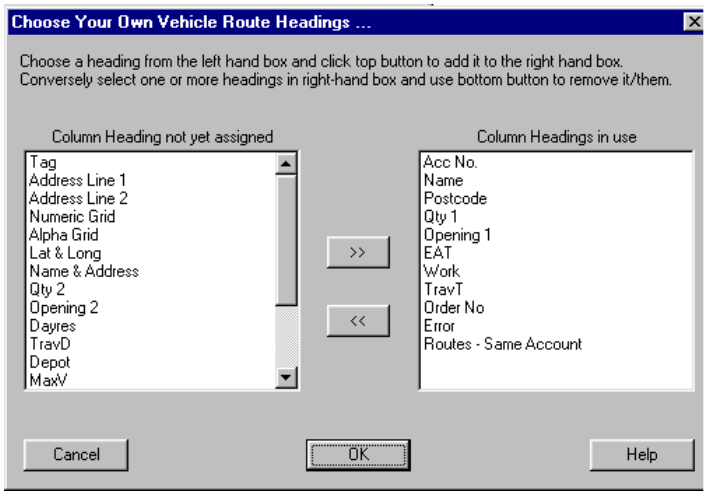
Using the Deferred List for Unrouted Calls or Orders

The deferred list will display the Unrouted orders or calls currently available. The EGOTRIP program amends the list as changes occur to routes, so that if any calls or orders are deleted from a route they will be attached automatically. Basic information displayed includes Account No. Address, Postcode, Quantity in terms of vehicle units, and work time. These defaults may be changed using the Style menu option if required. For calls with multiple visits in strategic studies any current routes for that call will also be displayed along with a frequency column to show the total number of visits required. This also applies for daily planning showing calls with orders on more than one route.

Adding a Call or Order to a Route

To add a call or order to a route click with the LHB on the necessary call or calls in the deferred list to select them and drag the highlighted calls into the new position in the required route using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

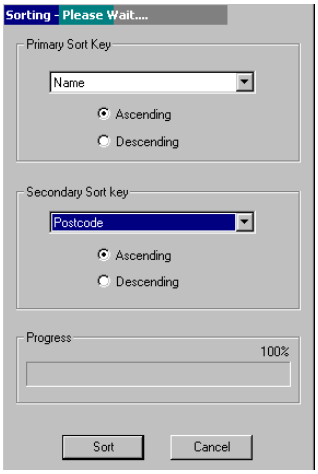
Customising the Display for Deferred Items



Basic information displayed includes Account No. Address, Postcode, Quantity in terms of vehicle units, and work time. These defaults may be changed using the Style menu option if required. The Style menu itself offers the **Deferred Headings** option to set the required columns are positions for the Deferred List panel. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window shows the available column headings are displayed in the left hand selection box and include options such as account no., order no., address, times, quantities, access restrictions, work times, and error codes. The headings currently in use are displayed in the right hand box in the order the will appear from left to right in a route panel (i.e. the top heading will appear on the far left). To select a heading and add it to the bottom of the current list, click on the heading with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. These will be added to the list in the order selected. The sequence of headings in the right hand box may also be changed by clicking on a heading with the LHB to select it and then using the RHB to drag it to a new position in the list.

Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the available list. Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous order.

Sorting the Deferments List



To sort Data lists by any column click once with the LHB on the column heading. Use a double click to show a dialog offering the choice to sort by any of the columns in the data list using Ascending or Descending priorities (the default is ascending). A secondary sort key may also be selected using the list box option. Data will be sort firstly on the primary key and then within equal values by the secondary key. Click on the Sort option button with the mouse LHB and the progress indicator will start. It is possible to interrupt a long sort by clicking the LHB on the Cancel option, and just display the initial re-ordering already completed.

The Deferments List Menu

Clicking the RHB on the Deferments menu will display the menu. From the menu it is possible to Print the High or Low Priority Orders and display the Call details notebook for the relevant call by selecting any item with the LHB.

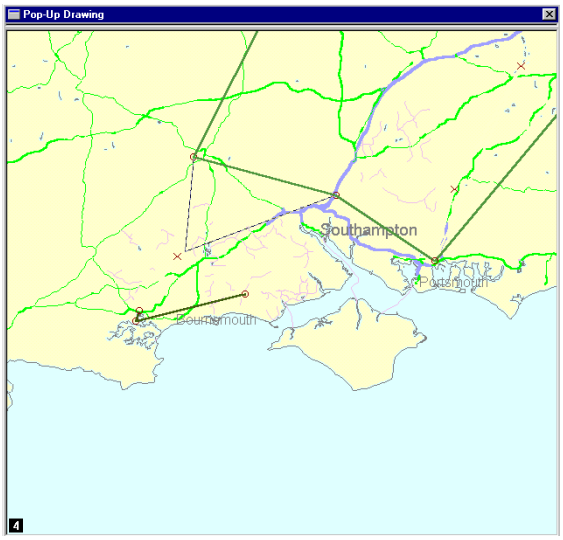
Add Un-routed Calls or Order

From the Text Panels

Click with the LHB on the necessary call or calls in any route window or on the deferred list to select them and drag the highlighted calls into the new position in the required route using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

The deferred list will display the Unrouted orders or calls currently available. The EGOTRIP program amends the list as changes occur to routes, so that if any calls or orders are deleted from a route they will be attached automatically.

From the Graphics Panel

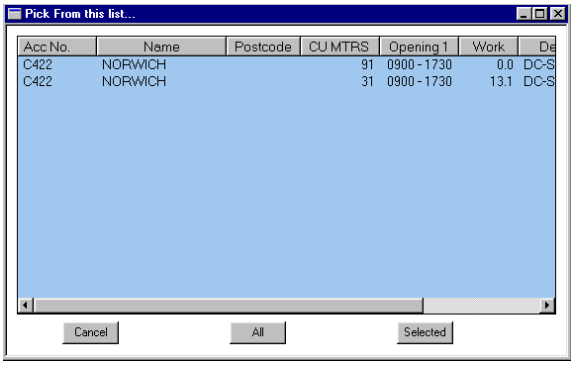


Unrouted calls or orders will be displayed on the graphics as crosses - **X.** To add an Un-routed item to a route click and hold down the RHB to drag a link on an existing route onto a X and release the button. A white dotted line will be shown to represent the position of the link as it moves within the graphics window. The link from the depot to the first and last calls on a route is not permanently displayed but can be seen as a grey line when the cursor is near a route. If the cross is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call or choose the All option to add all those shown. At the same time in the appropriate text panel a red bar will appear in the route to indicate the position between existing calls or depots.

In order to avoid excessive shift and travel time problems, it is now impossible to add any order or orders to a vehicle route where the grid reference and latitude/longitude values are blank. They can be only be added to Customer Collect or Carrier lists. If an attempt is made to add such an order an icon will appear when dragging showing the error (GridRef with an X through it). A valid grid reference must be set for all calls placed on routes. To set a grid reference double-click on the call with the Left Hand mouse button and input the correct address information as necessary.

Multiple transfers or moves from the same location

In any of the graphics screen features if the required link is release onto a location circle which is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call (either by holding down the LHB and dragging over the required objects or using CTRL key). Alternatively select the All button to add all those indicated.



Nearest Route or Depot for Un-routed Drops

A display column is available for the green deferred panel to show the Nearest Route to the call or order in question. The logic will find the nearest drop to the location in question as the crow flies (this is shown in square brackets) and then provide the route number for this call. On the top line of the example below, the nearest call to 10151, Durham, DH1 2SL is call id 10099 which is currently on R002D005. A double click with the left hand mouse button on this information will then show the nearest route in a pop-up window so that the call may be dragged onto that route if required.

Acc No.	Name	Address Line 1	Address Line 2	Postcode	Nearest Route	<UNIT 1>	Ope
10151	Branch	Osier Way	Durham	DH1 2SL	R002D005 [10099]	30	0800
10190	Franchise	Manston Road	Darlington	DL1 1NH	R002D005 [10099]	50	0800
10174	Franchise	Easton Lane	Weymouth	DT4 8PN	R001D003 [10183]	30	0800
10194	Branch	c/o Tarmac Roadstone	Edinburgh St Jame	EH1 3SS	R004D005 [10197]	60	0800
10195	Branch	Canongates	Edinburgh Gyle	EH12 9JT	R004D005 [10197]	100	0800
10064	Superstore	Hudson Road	Edinburgh	EH2	R004D005 [10197]	40	0800
10204	Branch	Dorrington Sand & Grav	Falkirk	FK1 1HG	R004D005 [10197]	50	0800
10102	Superstore	Teals Street	Stirling	FK8 1DQ	R004D005 [10197]	40	0800
10067	Superstore	Long Lane	Glasgow	G1 3LB	R004D005 [10197]	150	0800
10208	Branch	Haughmond Road	Parkhead Forge	G31 4EB	R004D005 [10197]	30	0800
10604	Branch	Adlington Trading Estate	East Kilbride	G74 1LW	R004D005 [10197]	70	0800

An additional column display may also be used to show the **nearest depot** (by drive time) to suggest which routes may be applicable for this drop. The route displayed is further filtered depending upon the setting to allow drops from routes

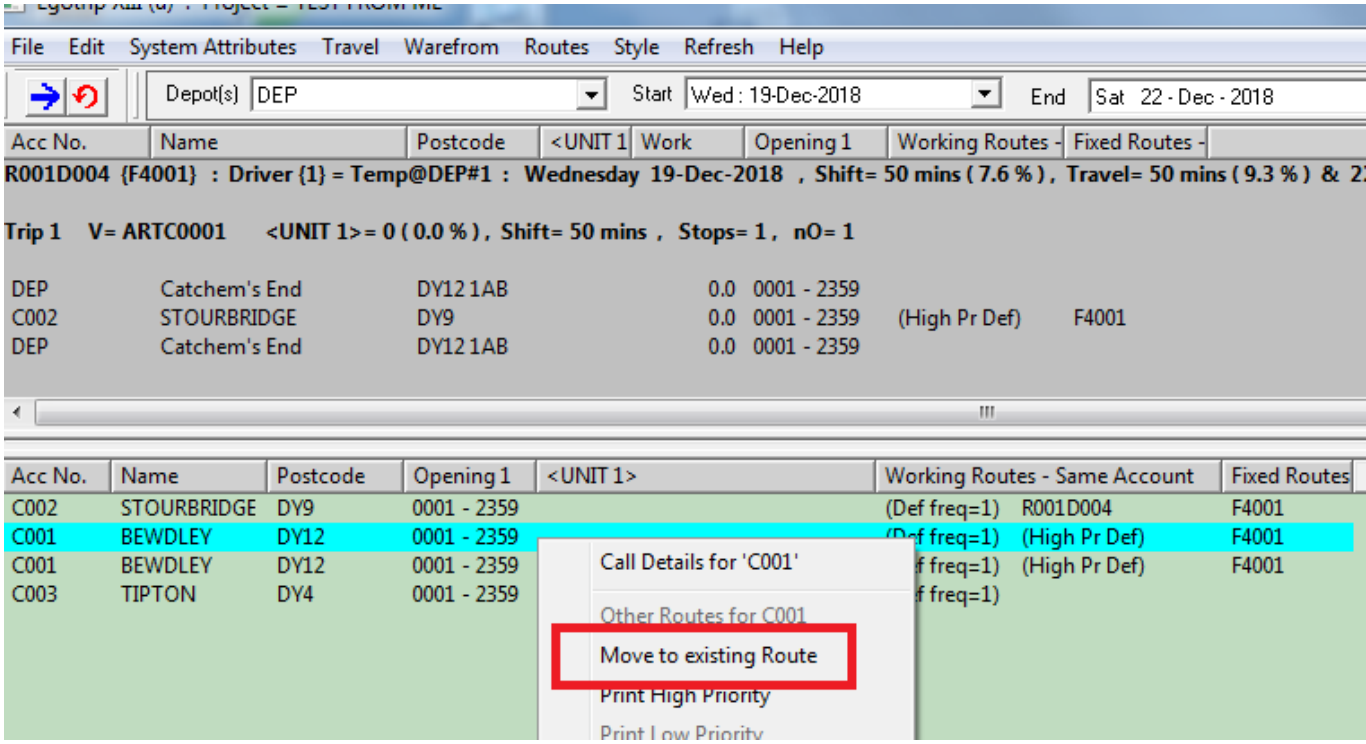
belonging to other depots to be added. On the Routes, Parameters dialog, if the Try All Depots setting is ticked on the Algorithm keys tab to allow drops to be mixed between depots, the Nearest Route will show routes from other depots. If the field is not set, the Nearest Route will be chosen from routes belonging to that call's owning depot only.

Adding Late or Additional Orders onto Routes using Move to Existing Routes

To help speed the allocation of late or additional Orders for the same Account onto routes, a new menu item in the Green Deferred List has been added called **Move to existing Route**

This will allow users to highlight any Orders that are on existing routes by swiping the left hand mouse button or using CTRL + left click and then use the menu option to add all these Orders onto existing Routes in one go.

An added advantage of the highlighting option is that any Orders that are not highlighted will remain on the Deferred List for a more detailed individual approach. Examples of this may include small volume deliveries that wouldn't really affect vehicle fill being moved en-bloc but larger Orders being left behind to do more checks on route capacity.



The process followed is in two steps similar to the Routes menu option AutoAdd:-

1. Add the Order(s) to the working Route that the Call currently on
2. If no working route is found add the Order(s) subject to any relevant routes produced from Fixed Routes

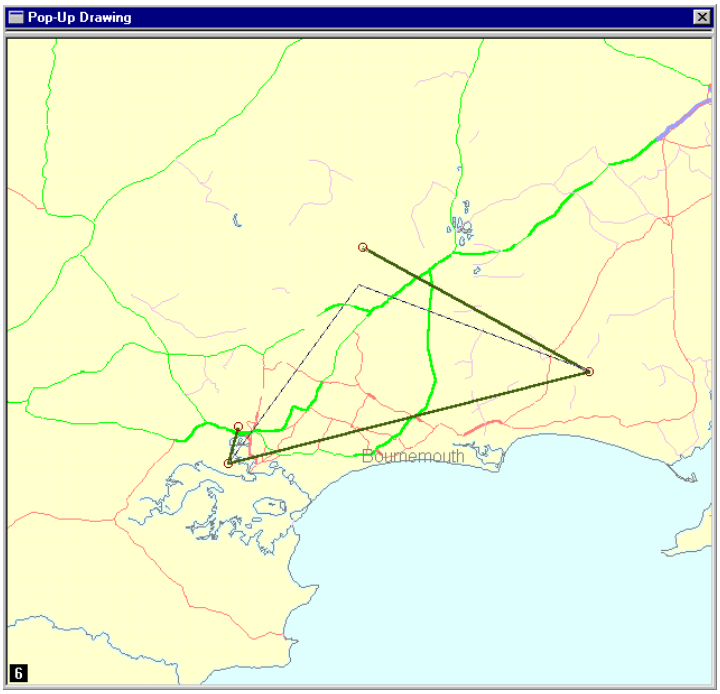
Thus if highlighted, using step 2 Orders will also be moved any existing "fixed" routes that they may be on.

In the example above the Call with two Orders that is on fixed route F4001 will be added to the end of R001 as that route was created from a fixed route option (as F4001 next to the route number indicates).
If step 2 isn't required please make sure that all highlighted Orders have a current working Route Number in the Working Routes – Same Account column.

Move Calls or Orders within a Route

From the Text Panels

Click with the LHB on the necessary call or to highlight calls in any route window to select them and drag the highlighted calls into the new position within that route using the RHB. A red bar will appear indicate their new position between existing calls or depots.

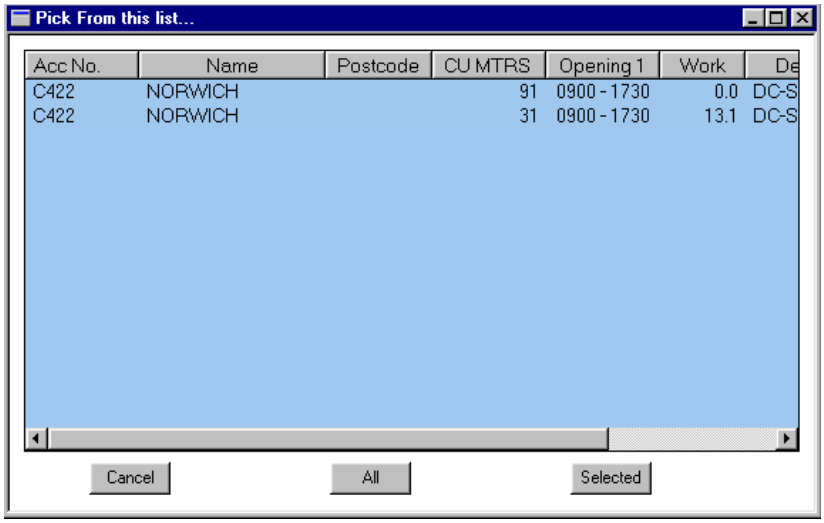


From the Graphics Panel

To move a call or order to a different position in the same route, click and hold down the RHB drag the required link onto the call or order and release the button. If the circle is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call or choose the All to add all those indicated. At the same time in the appropriate text panel a red bar will appear in the route to indicate the position between existing calls or depots.

Multiple transfers or moves from the same location

In any of the graphics screen feature if the required link is release onto a location circle which is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call (either by holding down the LHB and dragging over the required objects or using CTRL key). Alternatively select the All button to add all those indicated.



Delete Calls or Orders from a Route

From the Text Panels

Click with the LHB on the necessary call or to highlight calls in any route window to select them and drag holding down the RHB before releasing the button to drop the highlighted calls into the deferred list (the bottom panel of the main three route windows) or press the Delete key.

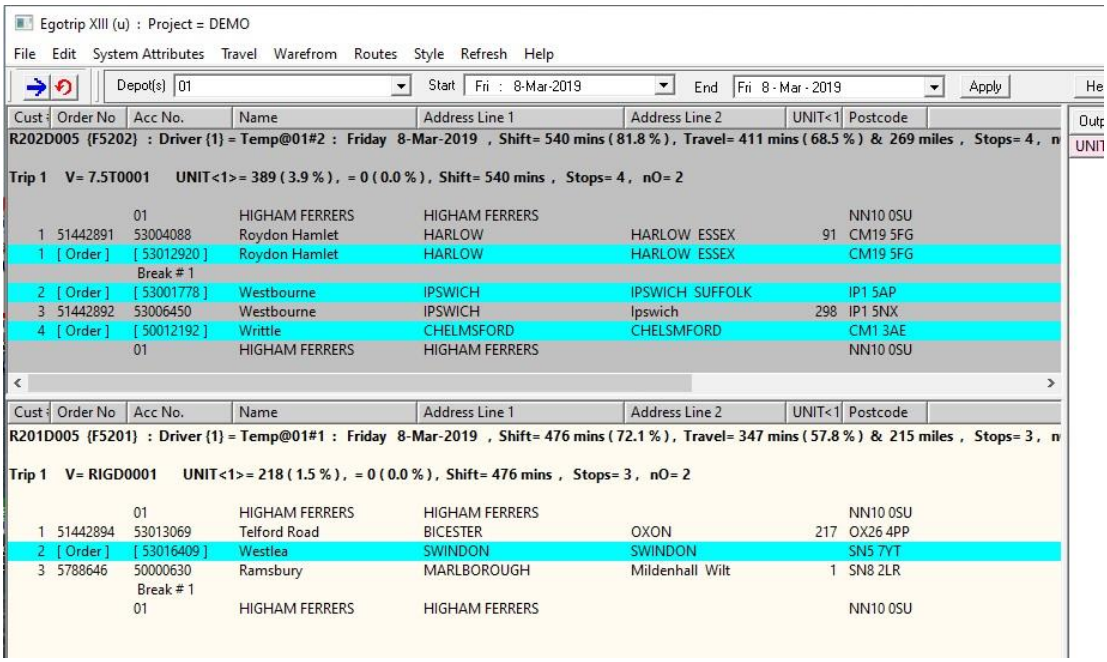
The deferred list will display the Unrouted orders or calls currently available. The EGOTRIP program amends the list as changes occur to routes, so that if any calls or orders are deleted from a route they will be attached automatically.

From the Graphics Area

In any graphics window if the mouse is moved over the top of a call on a route a pop-up information box will appear after a short delay providing basic information on the call. At this time click with the RHB to display a pop-up menu. From the list of options select Remove Call(s) from Routes. This will delete **all the calls from all the routes** displayed in the pop-up information box.

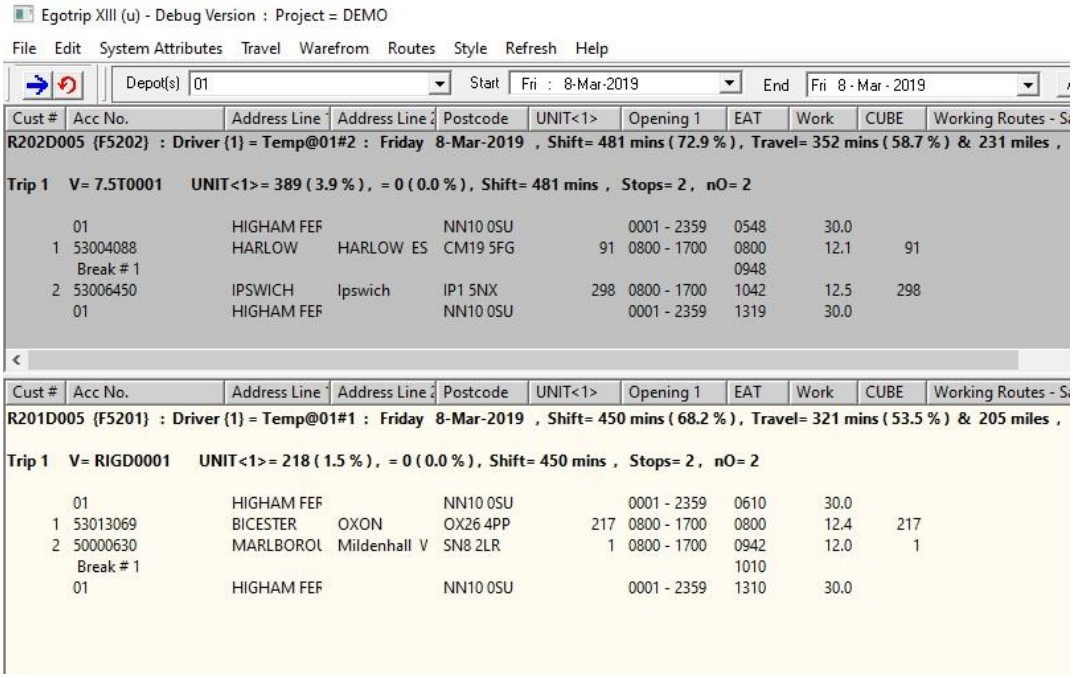
Removing ALL Calls without an Order from Routes in Daily Planning

A new facility has been added for use when routing daily with orders and using Fixed Routes for planning. When using the Transfer Fixed Routes to Working Routes menu option at the dialog, un-tick the last option to Remove Calls when loading orders. This will leave calls on fixed routes that have not yet placed an Order allowing multiple downloads during the day to add to the routes (see calls highlighted in the image below). It was always possible for a single individual route to remove calls that haven't ordered using the route menu option "Delete all calls without an Order".



Now it is possible to do this for all routes at once using the Routes menu option -
Delete all Calls without an Order from Routes

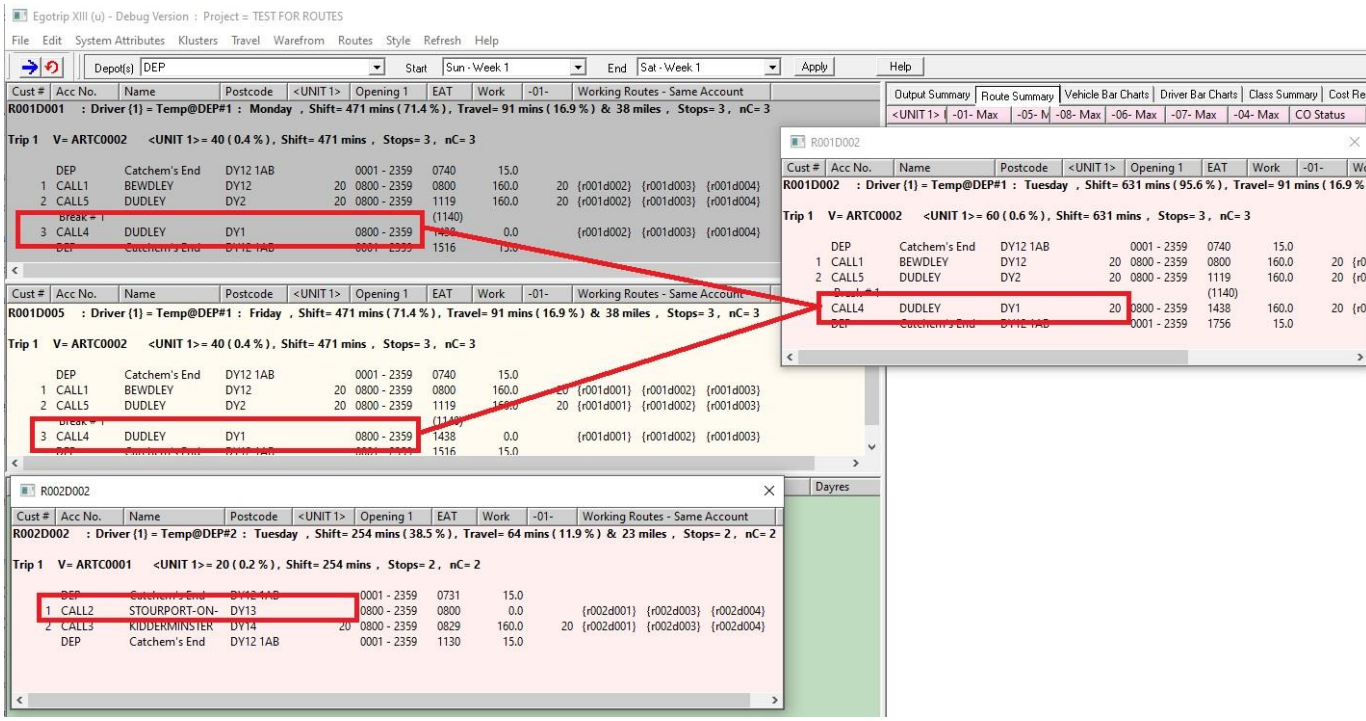
The process looks at each route in turn (loop through in the top route panel) and removes from that route before moving to the next. Routes are then shown re-calculated as required with all calls removed.



Please note that this action cannot be un-done once activated so do File, Backup first if necessary (or Archive as required).

Removing ALL Calls without a Delivery Quantity from Strategic Routes

For strategic studies it is now possible to remove calls from routes where the Delivery Quantity in Vehicle Unit1 is ZERO.



Use the Routes menu option - ***Delete all Calls without a Delivery Quantity from Routes***

The process looks at each route in turn (loop through in the top route panel) and removes from that route before moving to the next. Routes are then shown re-calculated as required with all calls removed.
The function has been designed to look at multiple calls from different days if frequency >1 or profile data where volume is delivered by % on different days of the week.

For strategic studies calls may be subsequently re-loaded into green deferred panel as they will appear in this section even if they have no vehicle units but do have a delivery frequency. Delete any unnecessary from calls in Kingpin Mode, Calls tab if necessary (display working routes column on Calls tab, sort on this column and then highlight and Delete if required). Profiled data Calls will automatically disappear if the new profiled day doesn't show a delivery.

This facility can be useful where delivery quantity has been re-loaded from a spreadsheet for a different study period and an existing route pattern needs to be re-aligned or where Profiles have been re-aligned and now some calls do not require a delivery on certain days in the new model.

Please note that this process cannot be un-done once activated so do File, Backup first if necessary (or Archive as required).

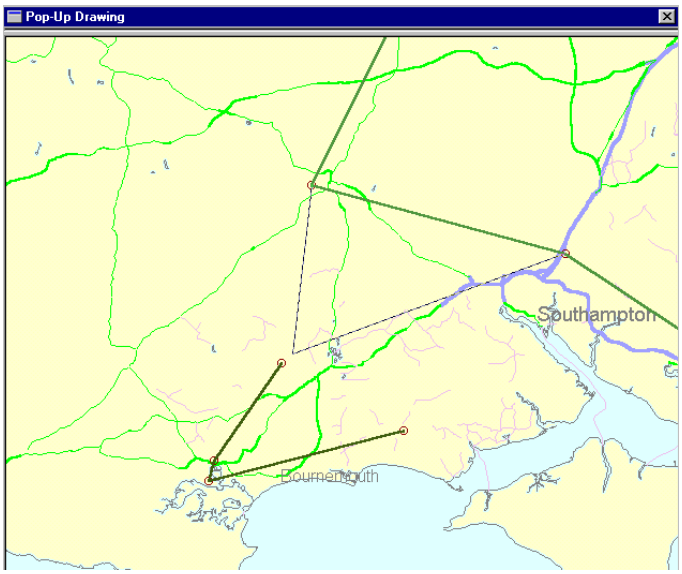
Transfer Calls or Orders from one Route to another

From the Text Panels

Click with the LHB on the necessary call or to highlight calls in any route window or on the deferred list to select them and drag the highlighted calls into the new position in the required route using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

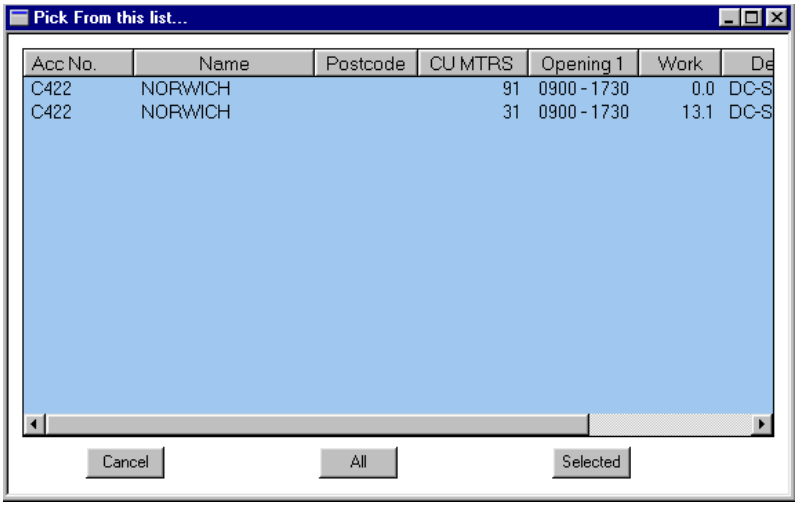
From the Graphics Panel

To transfer an item onto a route click and hold down the RHB to drag the required link of an existing route onto the call or order and release the button. If the circle is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call or choose the All to add all those indicated. At the same time in the appropriate text panel a red bar will appear in the route to indicate the position between existing calls or depots.



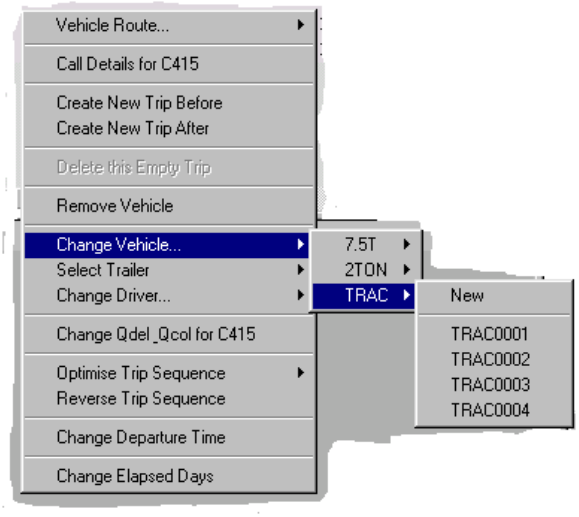
Multiple transfers or moves from the same location

In any of the graphics screen feature if the required link is release onto a location circle which is representative of more than one order or visit to a call a dialog box will appear to prompt you to select the required call (either by holding down the LHB and dragging over the required objects or using CTRL key). Alternatively select the All button to add all those indicated.



Add or Change a Vehicle, Driver or Trailer

Modifying Vehicles from the Route Panels or Summary View



Click with the RHB on the required route or trip to display the pop-up menu. The list of options includes Change Vehicle and Select Trailer.

Each of these has further cascade menus to display all the current classes and available resources. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance all the classes will be displayed. If the cursor is moved over a class a further menu will appear offering the choice of all the vehicles currently available (i.e. not being used at that time) for that depot and a **New** option. Using the LHB click once to add an existing vehicle or if New is selected a further pop-up box will appear to allow another vehicle to be created. This box will initially display the next sequence number available for this class; however it impossible to select this field and edit the Ident as necessary. Click with the LHB on OK to create the vehicle or choose Cancel to exit.

The same functionality applies to the Trailer option. In the case of Tractors and Trailers, if the selected trailer does not apply to the current vehicle allocated (or vice-versa), a warning message will be displayed before the vehicle (or trailer) is removed. Question marks will be displayed until an appropriate Ident is added.

Conflicts in Vehicle Use

Vehicles which are not available will appear in the list but will be greyed-out to prevent their selection. If a vehicle is added to a route which leads to a conflict in it's use (i.e. it overlaps another route) a message box will appear. After OK is selected the system will attempt to remove conflicts by manipulating the routes in question. If the routes cannot be modified to avoid overlap the message will re-appear after a short period of time. This will also apply whenever the Route Summary area is used and applies also to other resources such as drivers and trailers.

To disable this warning a parameter **Show Overlapped Vehicle Use** on the System Attributes menu can be amended. By default it is set to allow messages to be displayed. Once changed it remains in force until disabled or the program is closed.

To remove a vehicle from a route click with the RHB on the required route or trip to display the pop-up menu. The list of options includes **Remove Vehicle** Using the LHB click once on this option to remove the vehicle.
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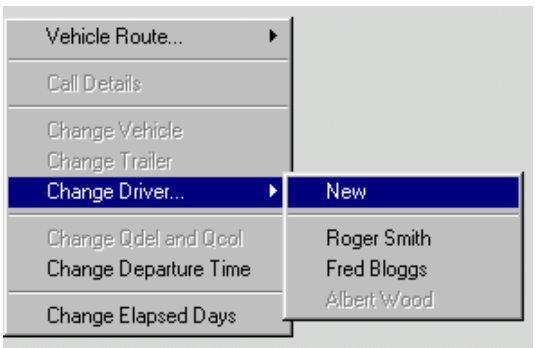
Moving Vehicles and Trailers using the Summary View

In the Summary Panel it is also possible to move vehicles between trip and routes using the mouse to drag and drop. This function is only available in the Vehicle Id or Trailer Id column of the Route Summary report. To move a vehicle or trailer, click and hold down the RHB on the necessary text and drag the highlighted resource (it will appear in red) into a new position on the report. When the button is released again the selected vehicle or trailer will replace the original resource allocated.

Where appropriate the same vehicle will be allocated to all trips of a route if this is required by the parameter on the MASS file.

Change a Driver or create a new Driver

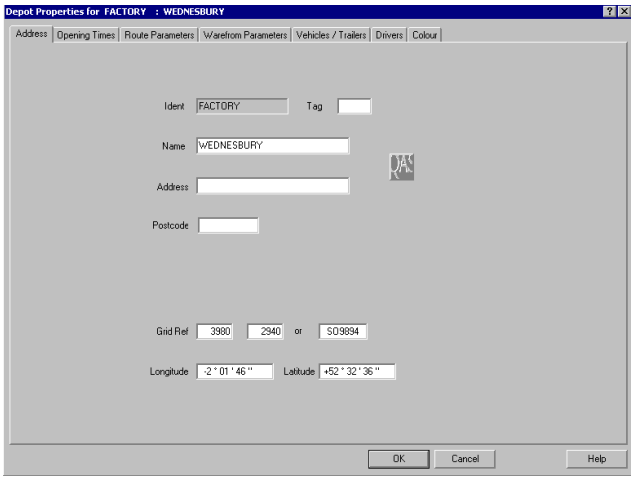


Click with the RHB on the required route to display the pop-up menu and as the mouse cursor is moved over the Change Driver item the next level of menu automatically appears. In the first instance all the available drivers will be displayed (those greyed-out are already allocate to other routes) and a **New** option.

Using the LHB click once to add an existing driver or if New is selected a further pop-up box will appear to allow another driver to be created. This box will initially display a temp Identifier with default Class and Pay Schemes set to 1. However it is possible to select this field and edit the Ident as necessary to create a name using up to 20 characters, and also clicking on the appropriate radio buttons to set another Class or Pay Scheme. Finally click with the LHB on OK to create the driver or choose Cancel to exit.

Modifying Overall Depot Fleet Totals

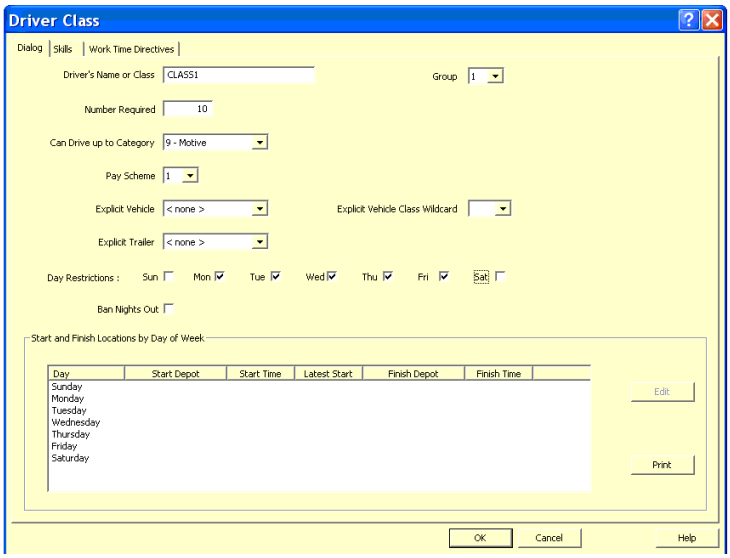
To change vehicle fleet totals at a depot, from any panel displaying a depot name, point to the appropriate depot using the mouse cursor and click with the RHB to display the pop-up menu. From the list of options select Depot Details using the LHB or point to the appropriate line and double-click the LHB.



A notebook containing various information is displayed as a pop-up. Click with the LHB on the Vehicles / Trailers tab at the top of the notebook. This page will allow the input or modification of vehicle numbers. From the tab list select the Vehicles / Trailers using the LHB, and then double-click on the relevant Class # field or click the field followed by the click the Edit button to modify. The Modify Vehicles dialog will appear.

Using the LHB, click into the number required field, amend as necessary and then click on OK to save or Cancel to exit. The vehicle numbers will be modified accordingly, with any vehicles removed also being deleted from existing routes. Finally at the depot notebook, click on the OK button to save the changes or Cancel to quit.

Individual Drivers and Classes



Individual Drivers or Types of Driver (called Classes in DiPS) may be created using the Drivers Page. Click on New to create a new driver or Class. A Class might be thought of as DAYS or NIGHTS for example, with each type having its own defined parameters such as Start Time, Finish Time, Maximum Daily Shift Time and so forth. Use the dialog box to fill in details including Name or Class (which is a required field) and click OK to save. Once it has been established Use Edit to change details or delete to remove a driver/class.

Driver's Name or Class

For an individual driver, enter the required name at this point. To establish a Class enter the required term (e.g. DAYS, NIGHTS, EARLY, WEEKENDS and so on). Up to 20 characters may be used. This is a required field and must be unique.

Number Required

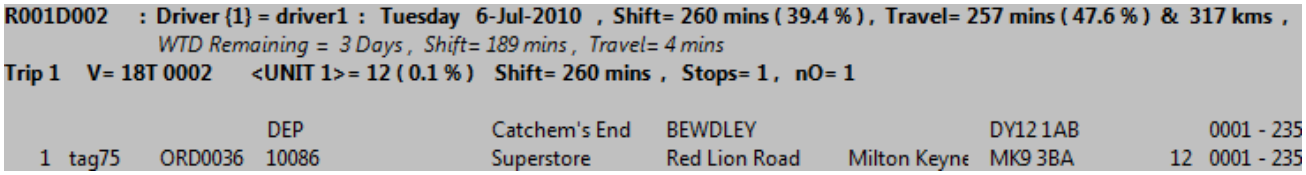
For an individual driver this field is set to 1.
For Classes, the Number Required field may be used to limit the drivers in a Class available in the route planning options. The number of drivers planned for this class at any one time will not exceed this limit. Each driver used will generate a single route number (i.e. the DiPS Rxxx number). More than one vehicle may be used on any route, but a single driver will always occupy a single individual route number. Similarly a vehicle may often be used on more than one route in order to maximise utilisation and optimise vehicle fleet requirements. If more than one class is in use, route numbers will be reserved at the depot for each class. As an example if a depot with route sequence set at 1 has 20 of driver class DAYS, and 20 of driver class NIGHTS, routes using the NIGHTS driver class will have numbers from 20 onwards, with routes 1-20 used by the DAYS drivers.

To ensure double-shifting of vehicles input, set up a Class with a Number Required value higher than the number of tractor units and rigid vehicles at the depot. If there are no Classes set the number of drivers will equal the number of motive units (tractor units and rigids) available.

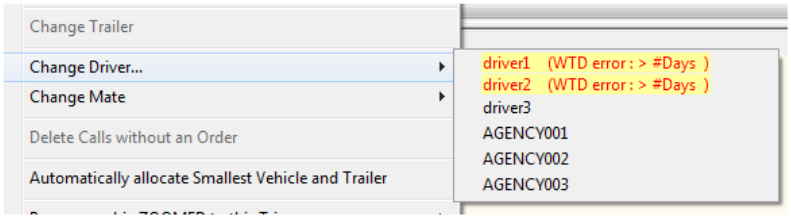
For more detailed information on all these settings, please refer to the section in the Edit Menu on Driver Classes.

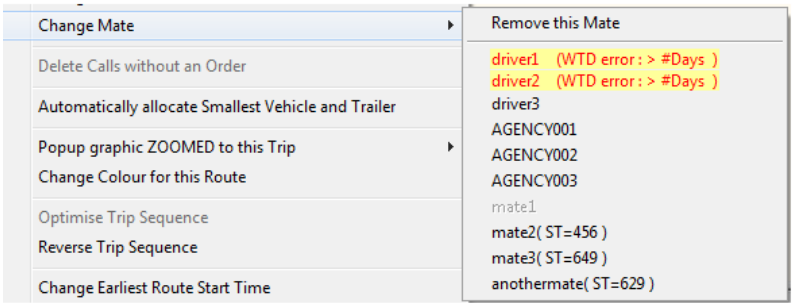
Working Time Directive - Information when Changing a Driver

If WTD values have been set, on each route panel, the second line will show the remaining days, shift and travel time available for this driver within the Working Time Directive period defined in the Routes, Parameters dialog. In the example below driver1 has 3 remaining days available in this period, with 189 minutes shift and 4 minutes travel.



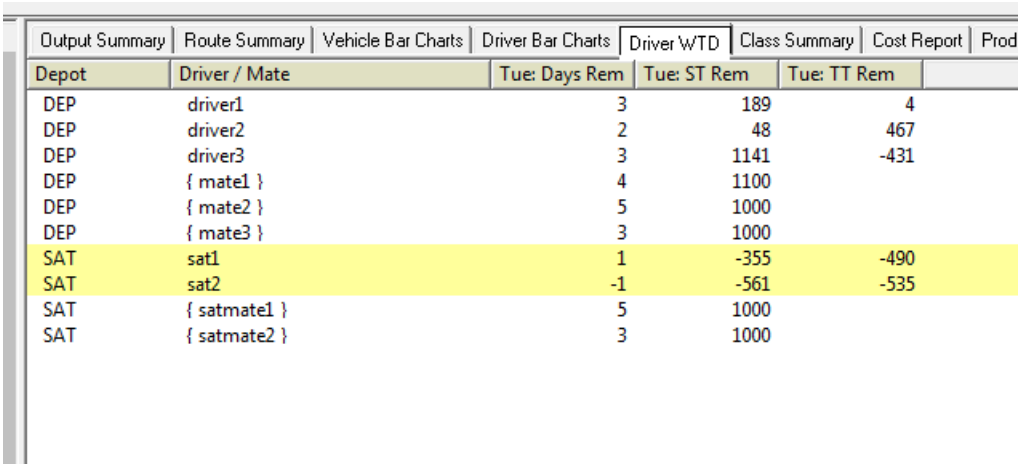
Click with the RHB on the required route (either in a route panel or in the Route Summary section) to display the pop-up menu and as the mouse cursor is moved over the Change Driver item the next level of menu automatically appears. In the first instance all the available classes or drivers will be displayed (those greyed-out are already allocated to this route or are otherwise unavailable). If using driver statistics and Working Time parameters, errors will be displayed in red with the usual WTD error background (in the example below they show that the driver will exceed his maximum no. of working days in that period). Values for available shift time and driving time will also show in brackets after the driver name **only** if the time is less than the maximums available (see examples below for mate2 and mate3; driver3 has available time greater than shift limits)





There is also a new tab on the summary reports to show the available remaining days, shift time and travel time.

The Driver WTD tab will list each driver and mate and show the remaining figures in terms of days and time. Travel time will not show for mates. As an example on the report below driver2 has 2 remaining days available in this period, with 48 minutes shift and 467 minutes travel; whilst mate1 has 4 days and 1100 shift minutes still to use.

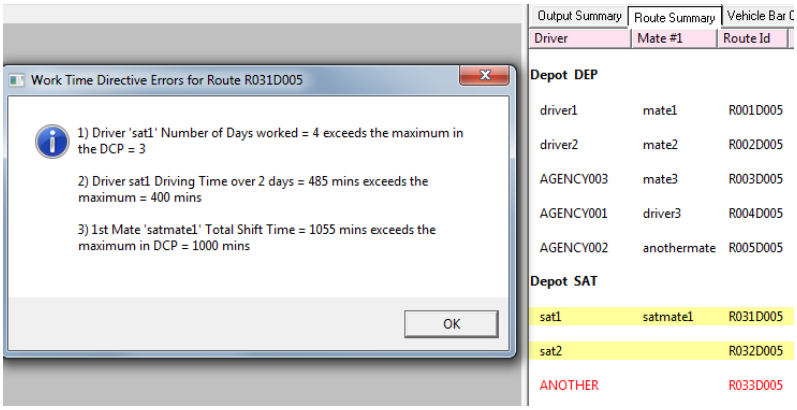


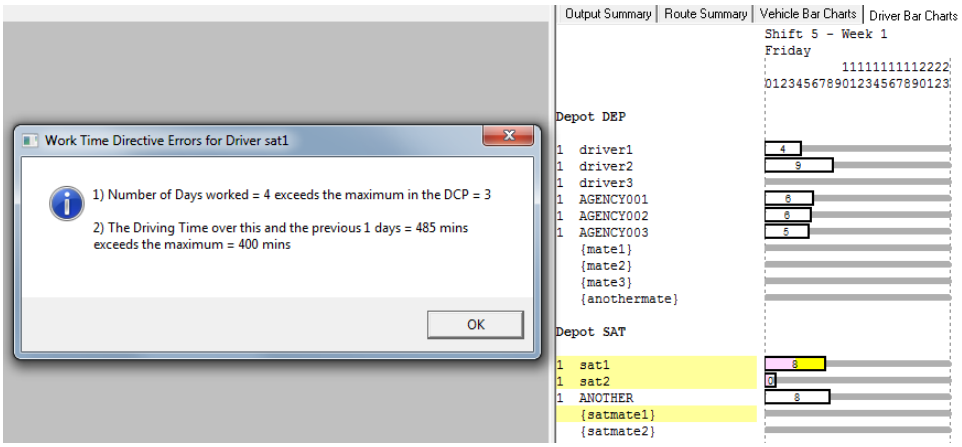
Depot	Driver / Mate	Tue: Days Rem	Tue: ST Rem	Tue: TT Rem
DEP	driver1	3	189	4
DEP	driver2	2	48	467
DEP	driver3	3	1141	-431
DEP	{ mate1 }	4	1100	
DEP	{ mate2 }	5	1000	
DEP	{ mate3 }	3	1000	
SAT	sat1	1	-355	-490
SAT	sat2	-1	-561	-535
SAT	{ satmate1 }	5	1000	
SAT	{ satmate2 }	3	1000	

Errors are again shown with a yellow highlighting if limits have been exceeded, with the minutes in excess of the maximum displayed as a negative figure. As an example driver sat1 has exceeded his shift time maximum by 355 minutes and his travel time maximum by 490 minutes.

Error Messages

In terms of error messages when WTD parameters have been exceeded, in route panels, on the Route Summary tab and in Driver Bar charts section, routes and drivers are shown highlighted with a yellow background. Right clicking on a menu will also reveal a Work Time Directive Error Details option to display a dialog with more detailed information. On routes this will show errors for both drivers and mates, whilst on the Driver Bar Charts information for individual drivers and mates (which are shown in brackets) can be viewed.





Add a new Trip to a Route

From the Text Panel or Summary View

To enable a vehicle to go on an extra trip after arriving back at the depot, that is to do a 2nd trip :-

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Create New Trip After using the LHB.

To add a first trip before the current trip :-

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Create New trip Before using the LHB.

Both instances will create a new trip without a vehicle in the required location so that calls or orders may be added to it.

Delete an Empty Trip or Route

From the Text Panel or Summary View

To delete an empty trip or route , click with the RHB on the required route or trip to display the pop-up menu and click with the LHB on the relevant menu option..

Transfer a Trip from one Route to another

From the Text Panels

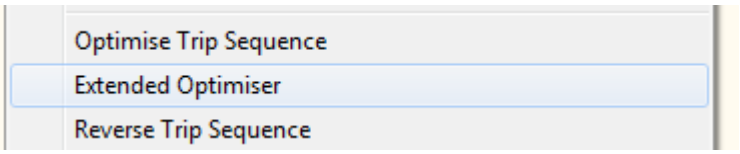
To highlight a trip click with the LHB on a depot line. To drag the highlighted calls into the new position in the other route click and hold down the RHB and release in the required position. A red bar will appear in the required route to indicate the position before or after existing depot lines. A “No-Entry” sign will display in any areas where the trip cannot be placed.

Please note that the vehicle is not moved automatically if the trip is transferred. The vehicle will remain allocated tot the trip even if it now becomes a blank route.

Automatically Allocate Smallest Vehicle and Trailer

This feature will re-allocate all routes to a new vehicle based on the available fleet, optimizing use of the vehicles so that the smallest vehicle is allocated to each route. All routes are processed, including those without a current vehicle. To activate this feature, simply click the menu item from the Routes menu.

Optimise the Sequence of a Trip



From the Route Panels

Click with the RHB on the required route to display the pop-up menu and select the Optimise Trip Sequence item

The Optimise function works by putting the drops into the DiPS routing code to try and achieve the best sequence possible, whilst obeying all the rules set. Parameters such as time windows, vehicle capacity, shift times and driving issues will if possible be considered in the final option. It can be thought of as the program temporarily removing all of the drops from the route and then putting just those drops back into the routing program. The 3 current Algorithm Key settings on the Routes, Parameters dialog are used to sort the drops into a sequence before planning, drops are added and different options calculated. If adding any drop into the routes causes an error, the process re-starts using this drop and adds the others around it in order to achieve the best possible route. If route errors are unavoidable the process will return the best driving sequence.

There is now a second option for optimising routes in Egotrip Mode. Selecting the menu option Extended Optimiser will consider more options than the original Optimise Trip Sequence and will take longer to complete but may offer a further reduction in travel time and distance For routes with 8 stops or less the routine will look at all the possible combinations (for 8 calls this consists of 40,320 options), and return with the best option whilst maintaining route integrity. For routes with more stops, the routine will employ the existing trip optimise code and then look for further savings if possible as looking at all possible combinations with a large number of stops becomes extremely time consuming (with billions of possibilities).

Both processes will display a progress indicator and then re-load the new route information. The progress dialog will show blue when the route can be achieved without errors, changing to red when errors are inevitable. Errors accounted for are vehicle capacities, banned calls, waiting time, and compartment or side loading issues. Routes with errors such as vehicle size exceeded at a call, crew size, or product mixing will still optimize within time windows. The complexity of the route (e.g. no. of drops, time windows, products etc.) will govern the time taken to complete the optimise routine.

The Extended Optimiser functionality has also been added as a menu option to enable a selected block of calls to be optimised as well as an entire trip or route. To use this function, simply select a range of calls on a route using the left hand mouse button to highlight them. Once the drops are marked, right click the mouse button and the menu option will now show Optimise Selected Calls. Using this feature will enable certain drops to be left in position and others optimised around them. For example, first and last drops can remain whilst others are re-configured.

Reverse a Trip or Selected Calls

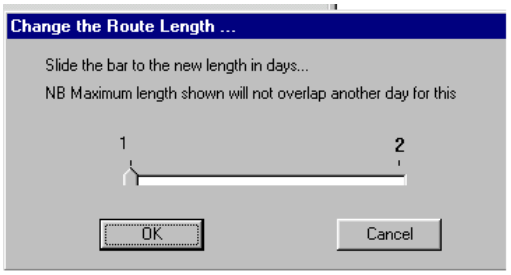
From the Route Panels

Reversing a trip will amend the sequence of calls to make the last call the first call. Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Reverse using the LHB.

An additional menu option is available on the right click men for a route allowing a selections of calls to be reversed (rather than a full trip). Highlight the required calls using the left hand mouse button, then right click on the menu and choose *Reverse Selected Calls.*

Change the Route length in Elapsed days

From any Route Panel or the Summary Panel



Click with the RHB on the required route or trip to display the pop-up menu. From the list of options select Change Elapsed Time in Days using the LHB.

This action displays the Route length slide bar dialog to select the route length in days. The default setting will always be for a 1 day route. If you need to amend the length click with the LHB on the slide bar to select it. Click and hold down the LHB to drag the indicator to a new route length or point to the required number and click the LHB. Note that the maximum shown will not allow a route to overlap the same route number on a subsequent day.

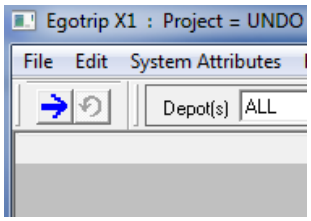
Click the OK button to amend the route or choose Cancel to quit.

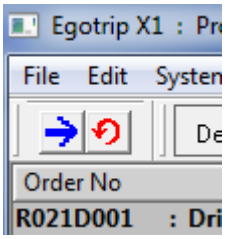
Undo Changes Made when Routing

The latest program update also now includes the initial release version of an Undo function for use when calls or orders are moved within routes or between routes.

Using either the red Undo button (top left of the selection bar under the File Menu), choosing the Edit, Undo option or pressing the F10 button, changes to the sequence of routes can be returned back to their original form.

When routes are first displayed or a routing program is run, the Undo button will be greyed out until changes are made.

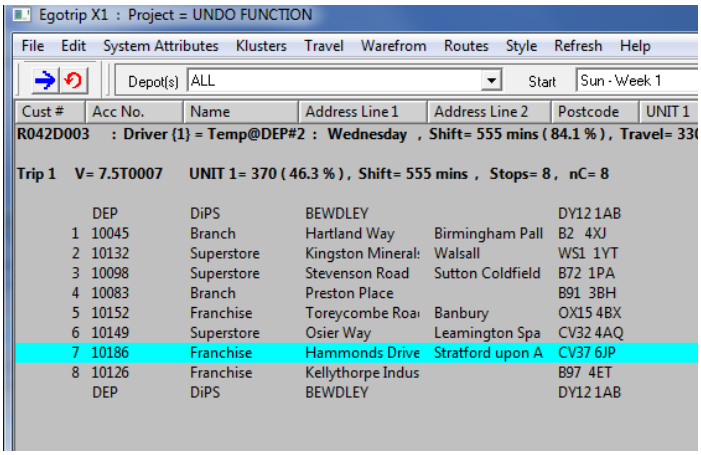


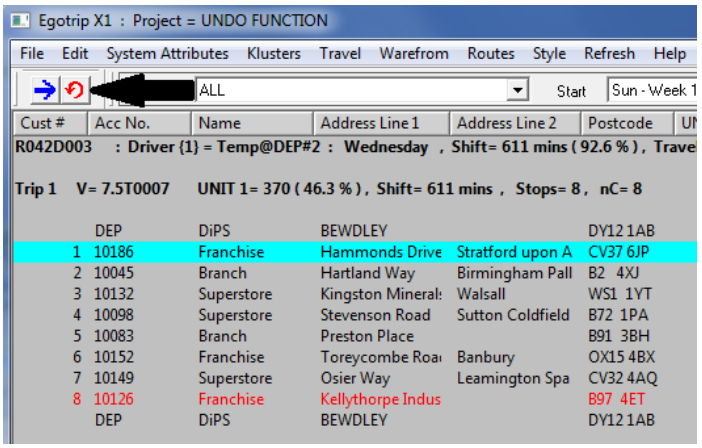


Once routes are displayed in routing panels and changes are made the button will show in red and become available.

Click Once to undo the last change, twice to undo the last two changes and so on until the desired sequence is once again restored.

As an example in the pictures below, if the route displayed in the top routing panel and call 10186 is dragged into a new position on the route to make it first drop rather than drop 7, clicking the Undo button once will revert the route back to its original sequence.





Once a number of changes have been to routes the amount of Undo options will increase, meaning it is possible to return the plan back to a previous state, restoring all the modified routes back to their desired state.

The Undo button will also remove any routes from display panels and close graphic windows so it is possible to scroll back through the routing activity. In the case above click the Undo button a second time to remove the route from the panel.

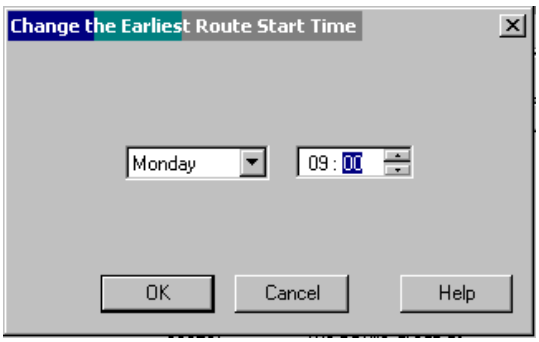
Where the Undo function will work –
Dragging Call or Orders in Text Route Panels
Dragging Graphics Lines to Move Calls or Orders
Dragging Calls from Draw Area or Click Call Mode blue pop-up lists
Optimise Trip
Reverse Trip
Create Trip Before / After
Change Route Start Time
Change Trip Gate Departure Time
Change Elapsed Days
Deleting an Empty Route

Changes not currently available in Undo –
Change Driver
Creating a New Route
Setting Trip Labels or Fleet Numbers for Routes
Setting the To be Called Over Flag
Remove Vehicle
Change Vehicle

As changes can be made in a variety of ways in DiPS and the pattern can become complicated, it is advisable to employ the Undo function for as short a number of changes as possible and to use the existing File, Restore functionality to revert back over a longer period of time.

Whilst the options available for the Undo function will remain if Modes are changed within a program session (e.g. going into Edit, Kingpin Mode and then returning to Routes, Egotrip Mode) they are cleared and re-set if the program is closed.

Change the Departure Time of a Trip or Route



From the Text Panels or Summary View

There are two methods of setting the departure time for a route, using either the traditional Earliest Route Departure Time, which controls the time the driver clocks on to start his shift, or using the Trip Gate Departure Time, which can be set for any or all trips of a route to define the time the driver actually leaves the depot (that is after any pre-shift allowance or depot work time) To control the use of one or the other of these parameters, set the System Attributes parameter *Use Explicit Gate Departure Times.*

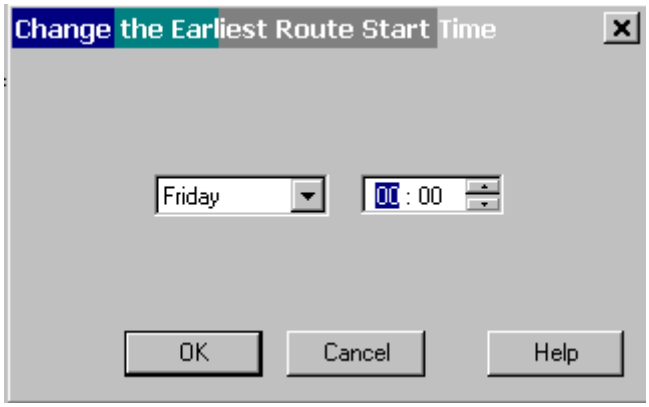
To set the required time, from the Text Panels or Summary View, click with the RHB on the required route or trip to display the pop-up menu. From the list of options select either **Change Earliest Route Departure Time** or **Change Trip Gate Departure Time** using the LHB. A Dialog window will then appear with a spin button to increment the hours or minutes accordingly. Alternatively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before. Use the drop-down box to set the day Choose OK to confirm and apply the changes or Cancel to quit.

Strategic Planning with Vanguard

With the increasing complexity of route planning in strategic programs (including multiple driver shifts and 24hour running of vehicle across midnight), the planning programs have been modified to save all departure times from depots and arrival times at calls once the run is finished. This ensures that any manual intervention after the initial run cannot inadvertently affect much of the plan by re-calculating a range of times across a number of routes. The initial route start time is displayed as **Earliest Route Start =** on a route panel as part of the summary line (see below)

This time will be preserved whilst any manual changes are made to the route (either adding calls or removing them). It can only be re-set manually by use of the menu option - **Change Earliest Route Departure Time** or **Change Trip Gate Departure Time.** Setting the time to **00:00** (see diagram example for a Friday route) will remove the Saved Time and allow the program to re-calculate.

To set the required time, from the Text Panels or Summary View, click with the RHB on the required route or trip to display the pop-up menu. From the list of options select the Change option using the LHB. A Dialog window will then appear with a spin button to increment the hours or minutes accordingly. Alternatively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before. Use the drop-down box to set the day Choose OK to confirm and apply the changes or Cancel to quit.

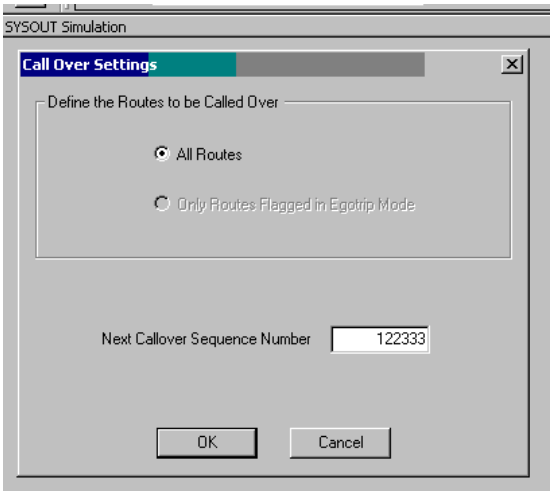


Callover Routes or Send Routes back to……..

Daily Scheduling Only

The CALLOVER command is usually used to tell DiPS that any manual adjustments are done and all the routes are ready to transfer back to the MAINFRAME. Normally this is completed once per day for **all** routes after every change has been made and is termed a Bulk Callover. This may be done using New Egotrip menu option **File, Callover Routes to Mainframe or File, Send Routes back to……..,** by a menu/icon option from a DiPS Planning folder, or even using the print function within the old Kingpin program.

The New Egotrip option will create a file of routed information (normally called RIOTIN.DAT or DIPSOUT.EXP) from the given depots and dates currently applied on the toolbar. On running the File , Callover Routes to Mainframe option the settings dialog will appear as displayed. The default settings will create callover all routes. The Sequence Number field allows amendments to be made to the next number to be used. This initial number is constructed from the last callover run on this database. Note that care will need to be taken if the database has been retrieved from a previous old or backup copy.



However it is possible to send back details for some routes and not others using Egotrip to flag particular routes. In the route summary view click with the RHB to display the menu and then click with the LHB on the **To Be Called Over** menu option. A tick will appear and A CO flag by the side of each route marked. The field may be changed until a callover is done.

These routes are then selected in the callover phase. To do this either at the prompt in the callover process CALLOVER ONLY THE ROUTES YOU FLAGGED IN EGOTRIP ? press **Y** key and select the correct date; or click on the relevant option on the dialog screen.
The details to be sent back to the Mainframe will now only include the routes marked as *CO* in Egotrip.
If **Prevent Partial Callover** is set on the Routes Parameters, Dayplan screen, this will prevent the callover of routes unless ALL depots are applied. Single depots cannot be transmitted separately.

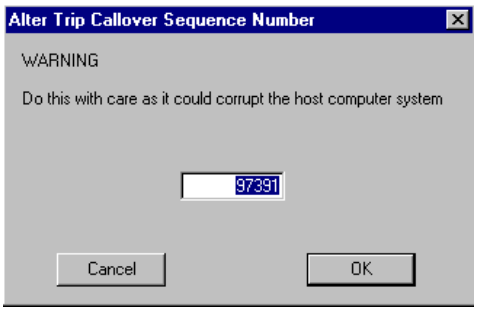
There may be some occasions where we need to access these routes again in order to add to them (e.g. late orders etc.). For this reason DiPS will allow you to use these routes again in Egotrip, and display warning messages accordingly. When a Called-Over route is retrieved it will appear with the CO flag and the To Be Called Over option will be unavailable. This status will change to ALT or PCO if the route is amended after a callover is done.

You can add either unscheduled calls or calls on other routes. If a new call is added to this route it will need to be called over again to account for this. Called-Over Orders may be added or transferred between routes as required **if your site permits such changes**. Un-setting the tick-box **Allow Alteration of Called Over Routes on the Routes Parameters, Dayplan screen** will prevent any alteration to routes that have been called-over. Orders cannot be moved, added or deleted if this is set.

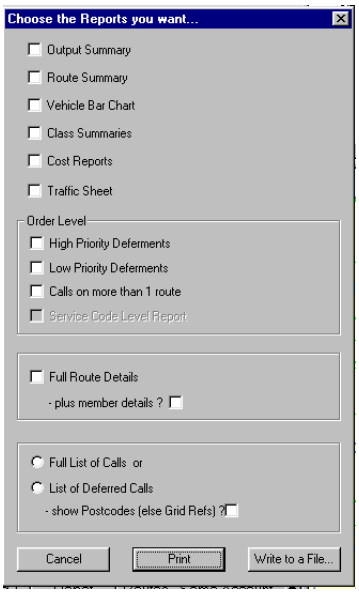
If host systems allow it, to re-set the status for all the routes in DiPS use the Refresh menu option – Undo callover Flags. This will set all routes back to before any Callovers were run or To Be Called Overs flags set (call DiPS for more advice if necessary).

Orders without Grid References on Routes will not be Called-Over
In order to avoid any excessive shift and travel times being transmitted back to mainframe systems, the Callover (or Send Routes back to….) option will not work if any route has a call on it without a grid reference. An error message will display the route and offending call. To set grid references, click Travel, Highway mode to display these calls in the middle panel and then double-click on each call with the Left Hand mouse button and input the correct address information as necessary.

Changing a Callover Sequence Number
To modify a Callover Number once set **IF YOU ARE ABLE**, in the route summary view click with the RHB to display the menu and then click with the LHB on the **Change Callover Sequence Number** menu option. Modify the number using the field provided and click OK.



Reports for Modified Routes

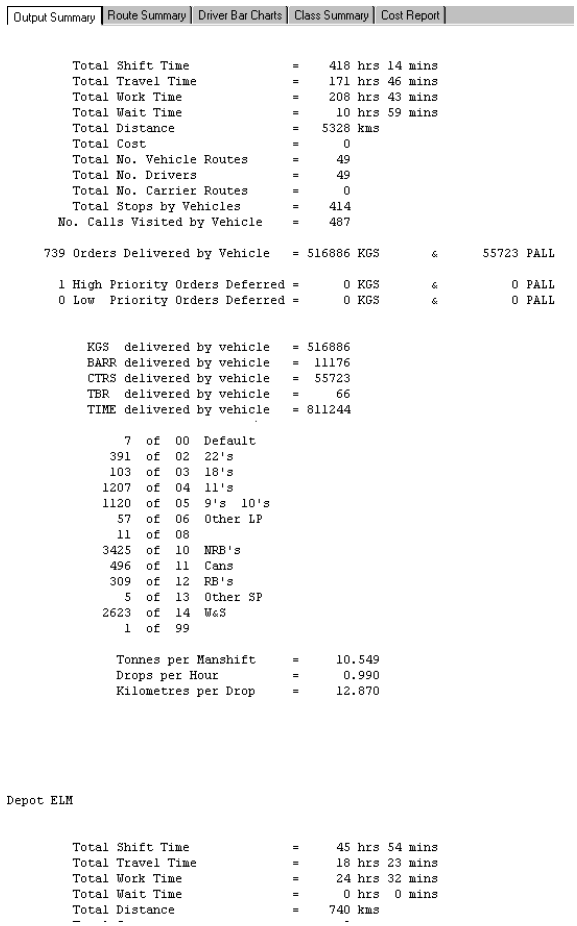


Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports.

To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

To print information for a single specific route click with the RHB in any route panel and select the Print menu option to display the Print Reports dialog window. This will allow the selection of certain output and pass it either to a printer or to create a file with the reports.

Report Types

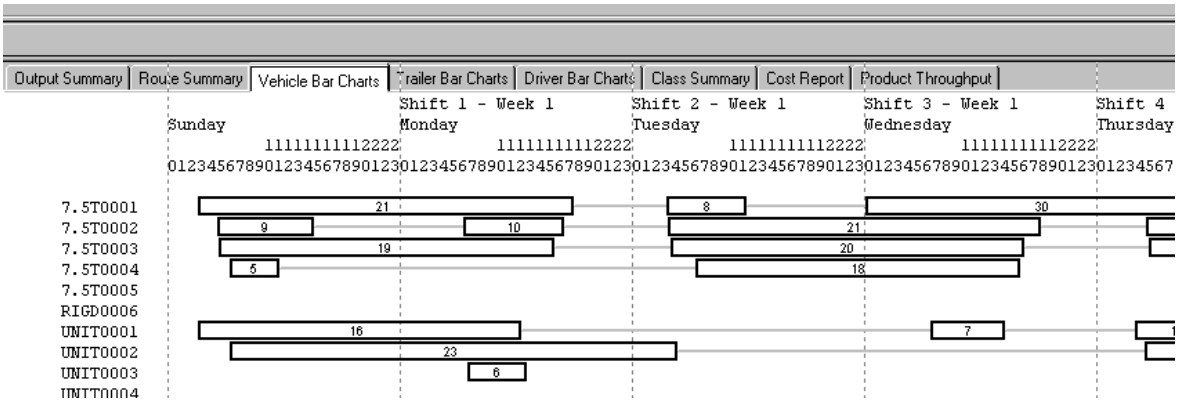


The Output Summary section gives the same basic total information as displayed on the program text window when the route planning is finished. It provides an overview of the totals planned and resource used. Where calls have not been routed, a summary of the deferred calls may follow this section listing the amount of calls and product and vehicle units currently deferred.

The route summary is a useful report. Using the Shift % and Capacity % columns, a quick analysis may be made of the success of the changes made. In terms of the other columns printed from left to right :

Route Ident gives the DiPS route reference number (used to re-print the route from Kingpin or amend in Egotrip)
Trip No. gives the trip number 1, 2, 3, etc.
Departure columns give the day and time of departure for each trip of the route
Veh+Trlr gives the vehicle class and trailer class in use (see the Traffic Sheet or full print for individual details)
Capacity section gives the Maximum Available Unit capacity, MaxU is the capacity used, and % the percentage utilisation figure
No. Pts is the number of individual calls visited and NC is the total number of drops made at those calls
Shift section gives the Maximum Available Shift Time, Used is the Time used, and % the percentage utilisation figure
Travel Time and Dist gives the route travel time and distance in appropriate units (miles or kms)
Work Time is the total work time for the route including pre-shift allowances, unloading/loading time at calls and any depot time incurred
Total Cost is the cost for that route based upon sum of vehicle/driver costs set
Std. Shift and Perf. % give standard shift times compared with the basic shift position if work or driving performance factors are set in Kingpin to represent the activity levels achieved in comparison with the levels without these factors.
CO_Seq is the Callover sequence no. for the route and *Fleet No* the allocated fleet code (daily planning)

Bar charts will demonstrate where drivers, tractor units, rigids, and trailers are utilised throughout the day. Each day is broken down into 24 1-hour sections represented across the top of the chart starting with **0** for midnight and ending with **23** for 11pm.
Where a trip starts within that hour a T will appear and a bar - will appear in every hour that the trip is away from the depot, even if it is for a single minute's duration. This logic applies to all the charts. A vehicle will only appear on the chart if it is used. Those vehicles not in use will NOT appear. The bar charts will appear for a 7 day period for each week of the plan.



The Resources Used by Class Summary will provide a breakdown by resource class (rigid,unit,trailer) and drivers of the totals used by depot by day for the plan as well as totals. The Total number of trips made by each class is also shown along with the number of calls visited, deliveries made, and nights out. The Unit 1 maximum available and used are also given to show % Utilisation (which is a function of maximum capacity of the class) and may be greater than 100% if resources are double-shifted, that is used by more than one driver in a day. (Example shows Unit 1 utilisation only.)

Output Summary | Route Summary | Vehicle Bar Charts | Trailer Bar Charts | Driver Bar Charts | Class Summary | Cost Report | Production Takeup

Resources Used by Class for Depot NE - Week No 1

			Sun	Mon	Tue	Wed	Thu	Fri	Sat	: TOTAL	Trips	Stops	NC	Nights	Ul-Max	Ul-Used	%	ST-Max	ST-Used	%	Miles	TravT
Rigids	: RIGD		0	0	1	0	0	1	0	: 2	2	23	23	0	1600	1462	91.4	1320	477	36.1	108	278
	7.5T		0	3	3	3	2	2	0	: 13	17	40	40	0	11050	2548	23.1	8580	3065	35.7	1435	2607
		TOTALS	0	3	4	3	2	3	0	: 15	19	63	63	0	12650	4010	31.7	9900	3542	35.8	1543	2885
Tractors	: UNIT		0	5	5	5	5	5	0	: 25	34	532	532	0				16500	12537	76.0	3671	8166
Trailers	: 40FT		0	6	7	7	7	7	0	: 34	34	532	532	0	34000	33296	97.9	22440	12537	55.9	3671	8166
Drivers	: Cat 9		0	5	5	5	5	5	0	: 25	53	595	595	0	46650	37306	80.0	16500	16079	97.4	5215	11051
Drivers	: Group 1		0	3	3	3	3	3	0	: 15	30	297	297	0	25250	18180	72.0	9900	9864	99.6	3548	7180
	Group 2		0	2	2	2	2	2	0	: 10	23	298	298	0	21400	19126	89.4	6600	6215	94.2	1666	3871
		TOTALS	0	5	5	5	5	5	0	: 25	53	595	595	0	46650	37306	80.0	16500	16079	97.4	5215	11051

Detailed costs are displayed for each depot for resources in use only. Those vehicles or trailers that have not been used at all during the planning period will not appear. Zeros are shown for resources not used on those particular days: each class and type is sub-totalled and overall grand totals are given for each depot.

Output Summary | Route Summary | Vehicle Bar Charts | Trailer Bar Charts | Driver Bar Charts | Class Summary | Cost Report | Production Takeu

Detailed Cost Report (Non-Zero Costs Only) for Depot NE - Week No 1

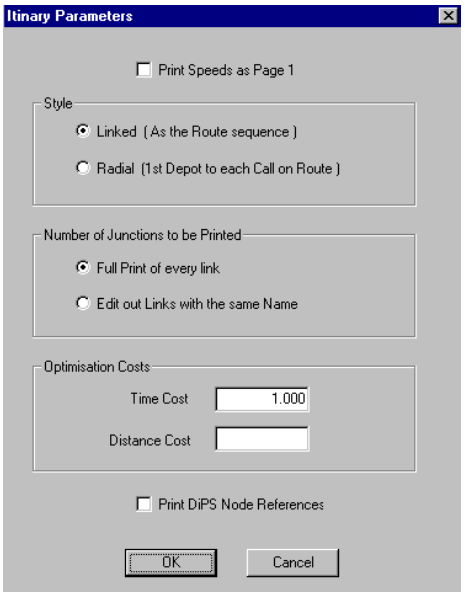
			Sun	Mon	Tue	Wed	Thu	Fri	Sat :	TOTAL
Rigids	: 7.5T0066		0	17385	9869	10674	21108	12042	0 :	71078
	7.5T0067		0	13362	7585	9066	13341	9665	0 :	53019
	7.5T0068		0	10537	2071	7576	0	0	0 :	20184
	RIGD0091		0	0	14917	0	0	3798	0 :	18715
		TOTALS	0	41284	34442	27316	34449	25505	0 :	162996
Trailers	: 40FT0006		0	25812	24250	21270	21834	20235	0 :	113401
	40FT0007		0	20061	22705	21399	19651	20716	0 :	104532
	40FT0008		0	20970	14088	22678	20520	15021	0 :	93277
	40FT0009		0	19651	15030	14464	11790	14877	0 :	75812
	40FT0010		0	10989	12126	16269	14436	14772	0 :	68592
	40FT0011		0	13450	13462	13518	16327	14512	0 :	71269
	40FT0012		0	0	13723	13804	12355	12153	0 :	52035
		TOTALS	0	110933	115384	123402	116913	112286	0 :	578918
Drivers	: NE-D001	(281)	0	90	90	89	89	89	0 :	447
	NE-D002	(282)	0	89	90	89	89	90	0 :	447
	NE-D003	(283)	0	89	89	89	89	89	0 :	445
	NE-DD001	(284)	0	89	89	89	89	89	0 :	445
	NE-DD002	(285)	0	89	87	88	89	76	0 :	429
		TOTALS	0	446	445	444	445	433	0 :	2213
		GRAND TOTALS	0	152663	150271	151162	151807	138224	0 :	744127

The Traffic Sheet print was designed to replace the old edited Route format. It displays depot ident, route,trip no. (separated by a dotted line), EAT start and finish times for the trip, the ident and address information (more is provided on the actual print than in the example). The Sl column identifies the delivery slot number for the call if slots are set up on the MASS file in KINGPIN. The EAT is shown for each location, along with the Vehicle units delivered (with totals for the trip in brackets at the bottom), and the vehicle and trailer combination used. The distances traveled for each trip are also shown at the bottom of the rigid or tractor column. WT has been designed to show work times and break times during the day.

The Full Route Print displays Vehicle and Capacity for each trip above the trip details, and the driver ident (usually Temp x @ Depot) at the top of each route. It is the only section of output which will show the inter-drop travel times and distances between all points visited. Work times are displayed for calls, depots (pre-shift allowance at start of day and turnround times between trips), and trip sub-totals. The e.a.t. column provides the earliest arrival time at each point. The q1 column displays the vehicle units delivered (or product if complex mixing logic is being used), and the Slot column shows the slot number used if slots are set for the call data. The break time column displays the point during the route at which a break has been taken and the appropriate times. Any values in brackets will represent time included in another section (work or break).

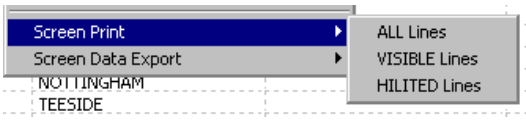
The Full List of Calls section shows address details for the call, demand figures (q1 column), frequency information (Fr), number of drops (NC), Opening Times and Days (for slot numbers where appropriate in the Sl column), the maximum vehicle allowed into the call (Max. Veh.), Work Time in minutes for loading or unloading, Call Priority value, Stem driving time from the delivery depot in minutes, crew size required (Cr), and route information. In the route information for each call, each week (wk1 = week 1), the route number is given for the departure day of the route delivering the call under the appropriate day. In this way if this is a multi-day route the delivery day may not necessarily be shown. Where Profiles or Slots are used the quantity delivered on each route will also be shown as well as the slot number used.
If the call is left unrouted a message will be printed accordingly complete with the relevant deferment code.

One useful by-product of the DiPS UK Road Database and the System's ability to generate travel times and distances is the corresponding capability to generate route detail between given points. Itinerary is the print option provided for this feature. Simply tick the print option box and set the parameters as follows when the Parameters dialog appears.



The first section of output (if speeds tick box is set) lists the current road network parameters, including access information, road speeds for all classes of road, and congestion factors. The standard optimisation cost factors shown are also those currently set. For style, if linked is selected the route will be processed as it stands. If radial is selected a separate print will be provided from the origin depot to each of the calls on the route in turn. Every link may be printed or just where the road changes as selected by the radio buttons. Finally optimisation costs may be set for quickest time or shortest distance depending upon the higher cost values input (default is for minimum time). Finally DiPS node references may be printed. This is useful if road links are to be amended in the inidividual links section on road speeds (e.g. to close a section of road)

Printing Screens



From Text Panels in all modes there are a number of print options for printing the screen as displayed (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB. ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed

Profit & Cost Information for Routes

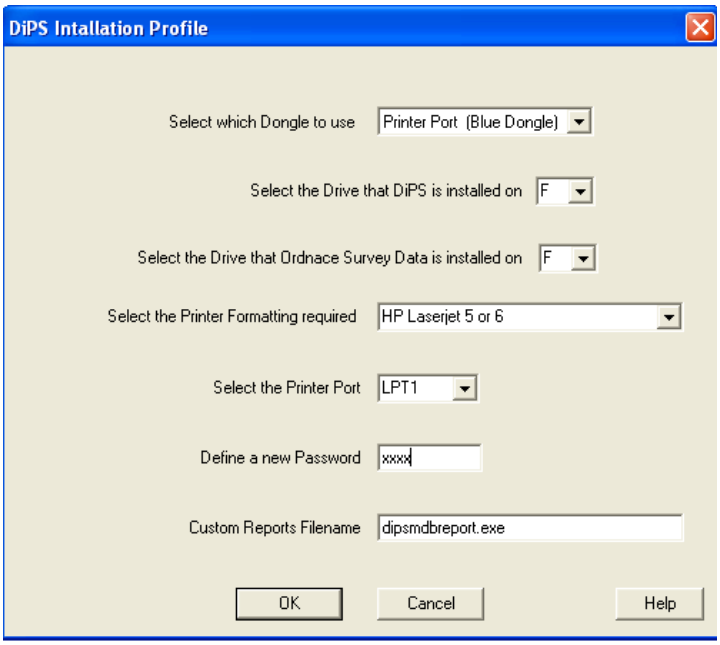
The cost of each route and carrier list is displayed on the Route Summary Panel as part of the overall total lines. In the Output and Summary panels whilst routing, calculated values for Margin, Cost and Net are updated when changes are made.

In the Route Summary section (when using Style, Route Summary Headings options), for each route values for Route Cost (sum of all vehicle & driver details), Marginal Cost (total of all orders' margin values) and Carrier Cost (total of all orders' carrier costs) can be displayed. A Net Value figure can also be displayed which will provide the difference between the Margin and Cost, and thus provide an indication of the route's profitability. In addition for all vehicle routes, the Carrier Cost figure in brackets will represent the total carrier cost for all orders on this route if they were sent via their "best carrier", thus giving an indication if these deliveries may be achieved at a lower cost than the vehicle route (also shows as a purple line in summary panel).

In the overall Output report, values are given for Total Cost, Total Margin & Total Net : being the sum of all the individual route and carrier list totals.

Customised Reports

To allow more flexibility in reports, a new item in the Routes menu list called Customised Reports has been introduced. This enables reports written using the Microsoft standard Business Objects Crystal Reports facility to be incorporated into the DiPS program. You will need Microsoft Office installed to run this facility.



Setting Up Custom Reports Facility

From the DiPS Install select the option “Install Custom Reports”. This is a Microsoft routine that will add the required Windows Components if they are not already installed on your PC.

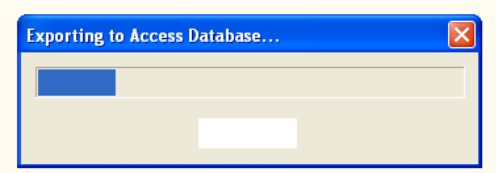
To activate the facility re-run the DiPS profile. Click File, Study and choose the Settings option. At the dialog click on the Change Settings button to display the Profile dialog. In the Custom reports Filename option, make sure the entry is **dipsmdbreport.exe**.

When routes are visible in Egotrip mode, the Routes menu will now have an extra option available called Customised Reports. This will run a reports routine on the depots and days or dates applied.

Single routes can be printed using the menu option *Custom Report* on the menu accessed by clicking the right hand mouse button when a route is displayed.

Running Customised Reports

Click on the Routes, Customised Reports menu option and an export routine will initially create a database for the reports. A progress indicator will be displayed.

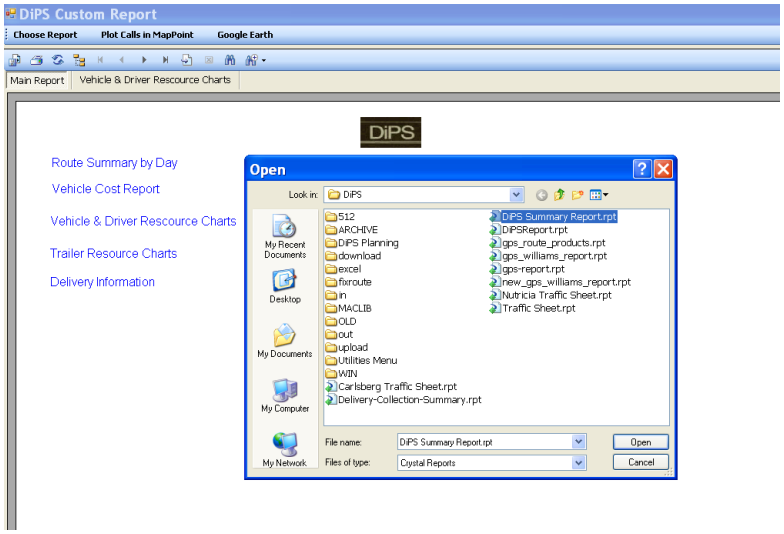


Once this export is complete, the Crystal Reports display dialog will appear. The **Choose Report** button will allow the selection of a company specific report or a general report. As an example, the standard file **“DiPS Summary Report”** is a good place to start, offering summaries, charts, and graphs as explained further below.

Once selected, the required report will then be displayed in the Reports window.

Use the toolbar icons to move around the pages of the report and Zoom or Find Text. Hover over the buttons to display help. Icons can also be used to Toggle a Tree View and Print or Export the report. Exported data can be passed into Excel, Adobe and Word formats using the Save as File type option.

Close the report once you have finished to revert back to DiPS.



DiPS Summary Report

Once displayed, the main report window will offer the following sections for selection:-

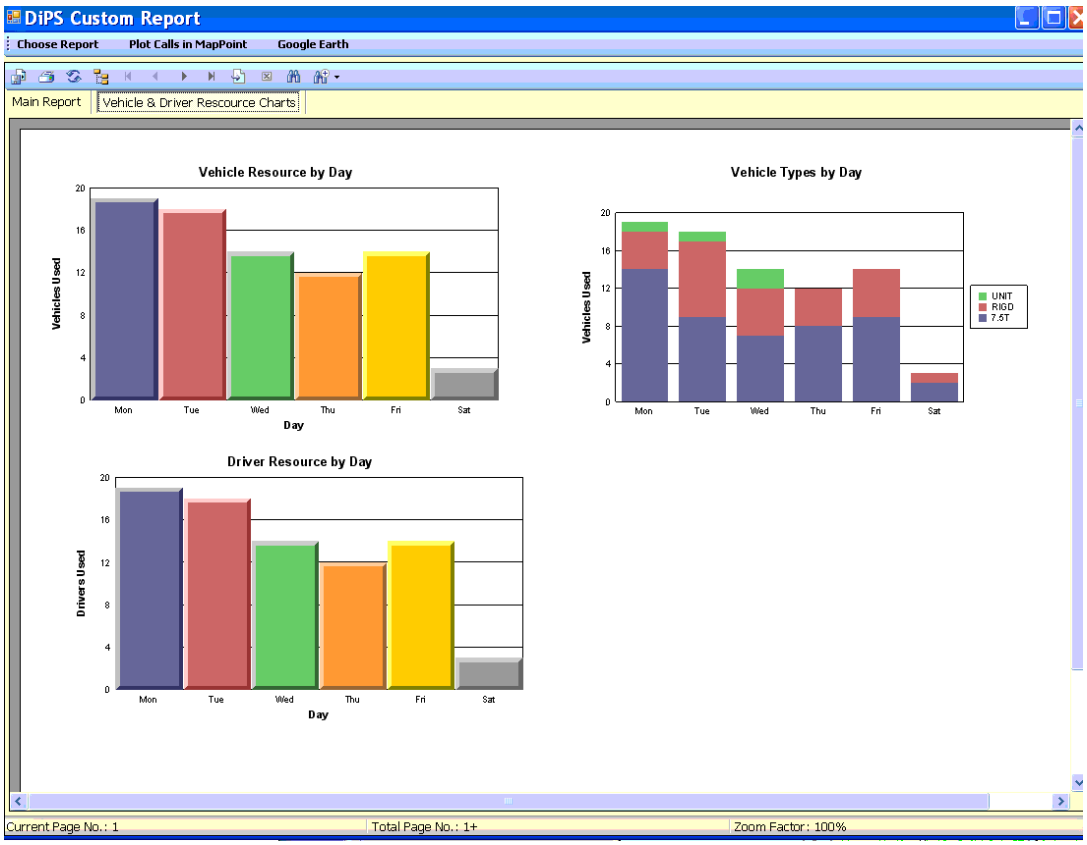
Route Summary by Day
Vehicle Cost Report
Vehicle & Driver Resource Charts
Trailer Resource Charts
Delivery Information

The **Route Summary by Day** report will give a table of individual route information broken down by day of week, including Shift Time, Travel Time, Distance, Breaks, Wait Time and Vehicle Units. A additional table and graphic chart will show averages by depot.

The **Vehicle Cost Report** will detail by day of the week for vehicle ident, costs for travel (distance + time values) and costs for the crew. An overall total line is also displayed.

The **Resource Charts** will graphically chart the resources used by type over the week. A chart of Vehicle Unit 1 delivered and collected over the week and a graph detailing each of the 12 products types despatched over the week can also be viewed.

The **Delivery Information** report has tables giving information over the weekdays for: Total Calls by Route, Vehicle Units by Depot (with % split of the overall depot total for each day), Delivery/Collection Vehicle Units by Call and Route, and Arrival times by Call and Route.



Additional Buttons

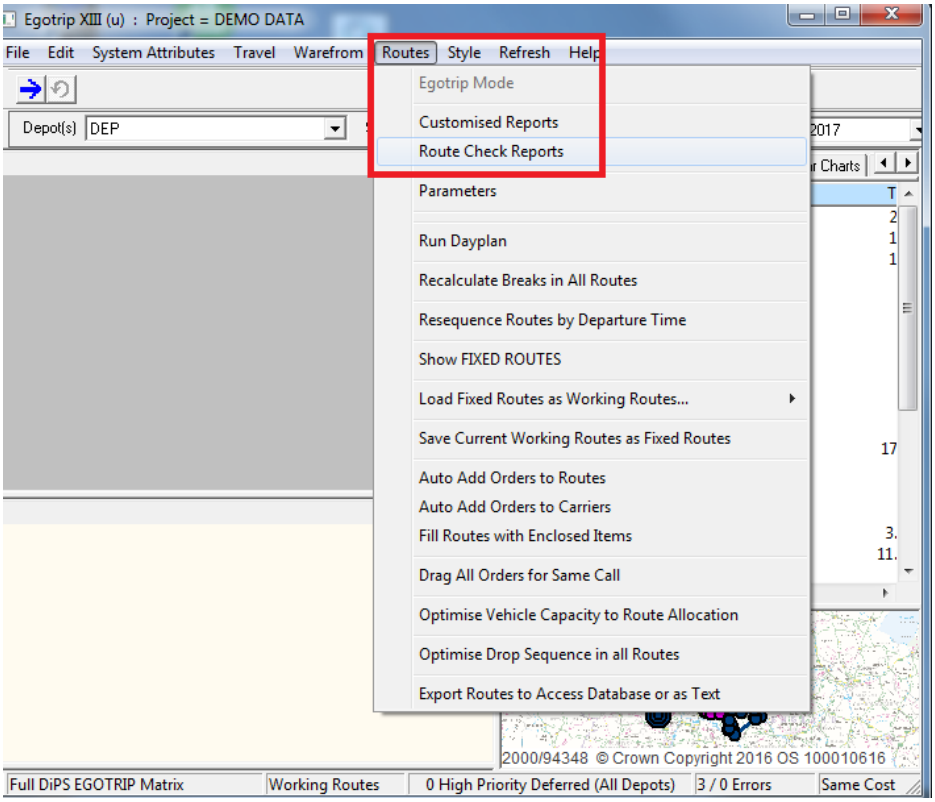
The **Export to CSV** button will export all the report into a CSV format file.

The **Google Maps** button will display another window split into 2 panels to show a table of the calls at the top and an Internet Explorer panel on the bottom displaying Google Maps. To display a call on the map, either select the required Postcode field of the call and click on the Find Selected Postcode button; or, to search for an address, select the appropriate row and use the Find Address button. Please note that the Internet Explorer panel is fully functional and can be operated separately by the user independently of the data section at the top.

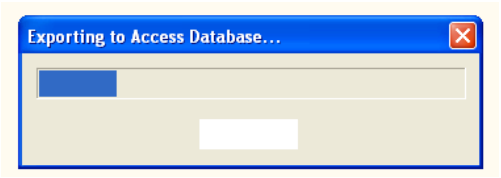
Route Check Reports – Customised Errror Checking

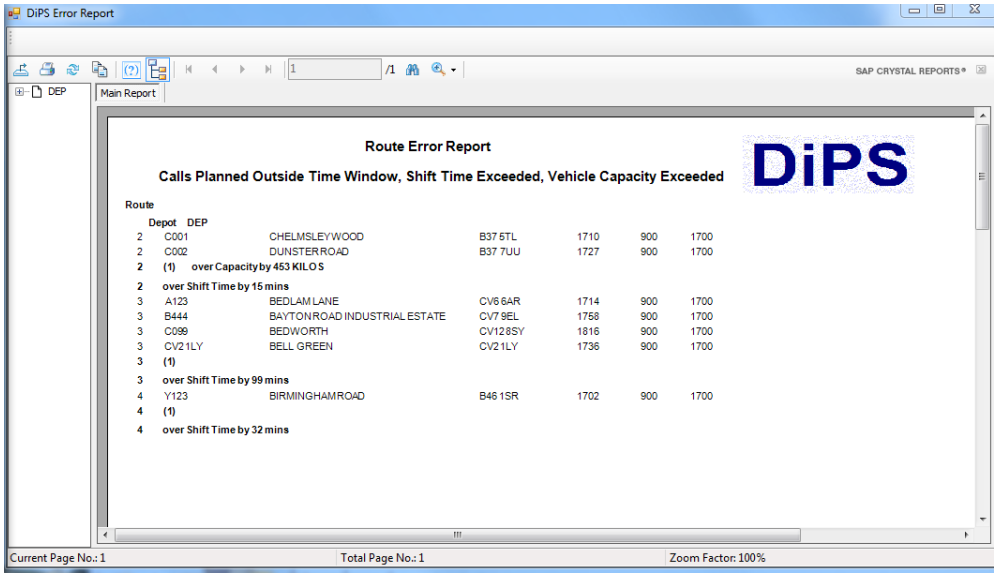
A new item in the Routes menu list called Route Check Reports has been introduced. This enables customised route error reports written using the Microsoft standard Business Objects Crystal Reports facility to be incorporated into the DiPS program.

A standard report is provided as default but can be modified to check for other requirements as required. Examples may be checks for Orders placed on carriers using Tag / SDI text or vehicle checks based on product combinations. Please contact support@dips.co.uk for more information.



The routines are based upon the usual Custom Reports facility so clicking on the menu option will initially create a database for the reports (showing a progress indicator). Once this export is complete, the Crystal Reports the required report will then be displayed in the Reports window.





Use the toolbar icons to move around the pages of the report and Zoom or Find Text. Hover over the buttons to display help. Icons can also be used to Toggle a Tree View and Print or Export the report. Exported data can be passed into Excel, Adobe and Word formats using the Save as File type option.

Close the report once you have finished to revert back to DiPS.

The routine requires an updated version of Custom Reports to be installed as the routine now shows the error report by default. The required files can be downloaded from the Customer Zone at www.dips.co.uk or installed from DVD as required. If the program isn't updated or the Error Report file is missing from the DiPS folder the Report as shown above will not display. Please let us know if you have any questions or require more information.

Exporting Route Information to Database

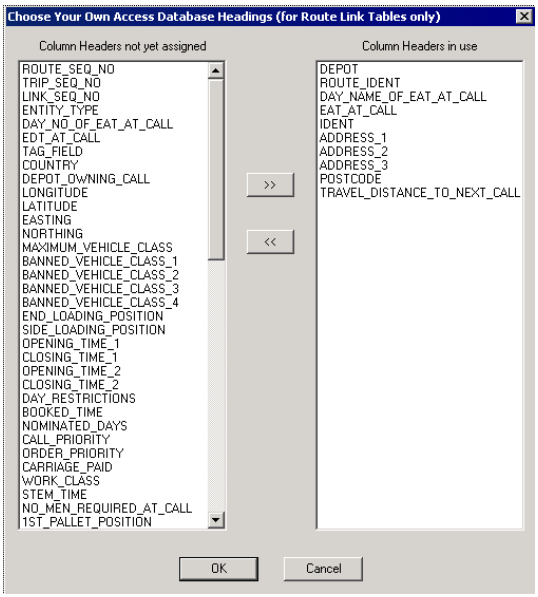
For detailed route information on every route and its calls, this option is activated from the Routes Menu, using Export Routes to Access Database or as Text. An output file can be produced from this option to load into common database programs such as Lotus Approach or Microsoft Access; or into a spreadsheet package. The file has headers on each column and contains all the necessary route information to produce individual tailored report styles from 3-D graphical utilisation reports to custom route print showing the material required employing your own designed presentation (perhaps with company logos for example). The report will contain all the route information for depots and days currently applied in the program.

For summary information, if the Style options for customised Route Output Lines and Route Summary Panels are set for Spreadsheet layout, the reports may be exported by clicking the right hand mouse button when in the panel and choosing the option for Screen Data Export. The report detail as defined will then be exported with columns and rows as displayed on the screen.

Export Types

The file can be imported in three ways using the “file save as type” in the dialog box – as a normal text file, directly into Excel or into an Access database.

For a text file each of the 116 fields printed is separated by a comma and can be loaded using any File,Open routines (for Excel use *delimited* and *comma* at the Import Wizard prompts). Text fields such as Addresses or Special Instructions are enclosed in quotation marks, e.g. “TEXT”, whilst numeric field appear between commas. A full specification is attached below. Due to the width of the file you may find it difficult to view or edit with a normal text editor program By default the output file is called DIPS2AXS.TXT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.



For an Access database the route information is exported as tables in two parts – for route summary information and for individual route details. The required information for each may be set using the Style menu options for Access headings. Select the required section and add the fields required in the dialog box. Only those fields in use in the headers option will be added to the database. When a database is re-used all the existing tables will be automatically replaced with new information. Select a new name each time if the existing information is required for future reference.

FIELD TYPE

1. ROUTE SEQ NO
2. TRIP SEQ NO
3. LINK SEQ NO
4. NO DRIVER SHIFTS
5. DEPARTURE DAY NAME
6. DEPARTURE DATE (YYMMDDW)
7. ROUTE IDENT
8. DRIVER’S NAME OR CARRIER
9. CALLOVER SEQUENCE NO
10. FLEET NO
11. ROUTE NAME
12. VEHICLE IDENT
13. VEHICLE CLASS
14. VEHICLE CAPACITY UNIT 1
15. VEHICLE CAPACITY UNIT 2
16. TRAILER IDENT
17. TRAILER CLASS
18. TRAILER CAPACITY UNIT 1
19. TRAILER CAPACITY UNIT 2
20. ENTITY TYPE (C,D, K)
21. DAY NAME OF EAT AT CALL
22. NO. OF EAT AT CALL
23. EAT AT CALL
24. EDT AT CALL
25. IDENT OF CALL OR DEPOT
26. TAG FIELD OF CALL OR DEPOT
27. ADDRESS LINE 1
28. ADDRESS LINE 2
29. ADDRESS LINE 3
30. POSTCODE
31. COUNTRY CODE
32. CALL’S OWNING DEPOT
33. LONGITUDE
34. LATITUDE

35. EASTING
36. NORTHING
37. MAXIMUM VEHICLE CLASS
38. BANNED VEHICLE CLASS 1
39. BANNED VEHICLE CLASS 2
40. BANNED VEHICLE CLASS 3
41. BANNED VEHICLE CLASS 4
42. LOADING POSITION
43. LOADING POSITION
44. OPENING TIME 1 (call or order)
45. CLOSING TIME 1
46. OPENING TIME 2
47. CLOSING TIME 2
48. DAY RESTRICTIONS
49. BOOKED TIME
50. NOMINATED DAYS
51. CALL PRIORITY
52. ORDER PRIORITY
53. CARRIAGE PAID
54. WORK CLASS
55. STEM TIME
56. NO. MEN REQUIRED AT CALL
57. NO. MEN ON VEHICLE
58. 1ST PALLET POSITION
59. LAST PALLET POSITION
60. CALL SPECIAL DELIVERY INST
61. ORDER SPECIAL DELIVERY INST
62. ORDER TYPE (O,S BLANK)
63. ENTRY DATE
64. BOOKED DATE
65. DELIVER BY DATE
66. CALLED OVER FLAG
67. ORDER OR SHIPMENT IDENT
68. DELIVERY UNIT 1
69. DELIVERY UNIT 2
70. COLLECTION UNIT 1
71. COLLECTION UNIT 2
72. DELIVERY PRODUCT 1
73. DELIVERY PRODUCT 2
74. DELIVERY PRODUCT 3
75. DELIVERY PRODUCT 4
76. DELIVERY PRODUCT 5
77. DELIVERY PRODUCT 6
78. DELIVERY PRODUCT 7
79. DELIVERY PRODUCT 8
80. DELIVERY PRODUCT 9
81. DELIVERY PRODUCT 10
82. DELIVERY PRODUCT 11
83. DELIVERY PRODUCT 12
84. LABEL UNIT 1
85. LABEL UNIT 2
86. LABEL PRODUCT 1
87. LABEL PRODUCT 2
88. LABEL PRODUCT 3
89. LABEL PRODUCT 4
90. LABEL PRODUCT 5
91. LABEL PRODUCT 6
92. LABEL PRODUCT 7
93. LABEL PRODUCT 8
94. LABEL PRODUCT 9
95. LABEL PRODUCT 10
96. LABEL PRODUCT 11
97. LABEL PRODUCT 12
98. TRAVEL TIME TO NEXT CALL
99. TRAVEL DISTANCE TO NEXT CALL
100. WORK TIME
101. LENGTH OF BREAK IN MINS
102. BREAK TAKEN IN WHAT PERIOD
103. TRIP NO. CALLS
104. TRIP MAX SHIFT TIME
105. TRIP SHIFT TIME USED
106. TRIP MAX TRAVEL TIME
107. TRIP TRAVEL TIME USED
108. TRIP WORK TIME USED
109. TRIP TRAVEL DISTANCE

110. ROUTE MAX SHIFT TIME
111. ROUTE SHIFT TIME USED
112. ROUTE MAX TRAVEL TIME
113. ROUTE TRAVEL TIME USED
114. ROUTE WORK TIME USED
115. ROUTE TRAVEL DISTANCE
116. RECORD NO IN THIS FILE
117. KLUSTER ID
118. CALL OPENING TIME 1
119. CALL CLOSING TIME 1
120. CALL OPENING TIME 2
121. CALL CLOSING TIME 2
122. CALL DAY RES
123. CALL BOOKED TIME
124. WAIT TIME
125. OVERNIGHT BREAK IN MINUTES
126. STEM DISTANCE
127. EXPLICIT VEHICLE WILDCARD
128. ADDRESS LINE 4
129. ADDRESS LINE 5
130. ORDER TAG FIELD
131. COLLECTION PRODUCT 1
132. COLLECTION PRODUCT 2
133. COLLECTION PRODUCT 3
134. COLLECTION PRODUCT 4
135. COLLECTION PRODUCT 5
136. COLLECTION PRODUCT 6
137. COLLECTION PRODUCT 7
138. COLLECTION PRODUCT 8
139. COLLECTION PRODUCT 9
140. COLLECTION PRODUCT 10
141. COLLECTION PRODUCT 11
142. COLLECTION PRODUCT 12
143. BEST CARRIER
144. BEST CARRIER COST
145. BEST CARRIER TABLE
146. THIS CARRIER COST
147. THIS CARRIER TABLE
148. ORDER MARGIN VALUE
149. ROUTE TRAVEL COST
150. ROUTE CREW COST
151. CUSTOMER SEQ
152. PICK DEPOT
153. MATE NO.1 NAME
154. MATE NO.2 NAME
155. TELEPHONE NUMBER
156. PRE NOTIFICATION
157. LATE NOTIFICATION
158. TRIP TAG

(116	ITEM QUANTITY 1	(if multiple model)
(1176 + nCommodity	ITEM QUANTITYn	

(116	TRADETEAM SOP COMPANY NO)
(117	TRADETEAM CUSTOMER CODE)
(118	TRADETEAM DEL SEQUENCE)
(119	TRADETEAM ORDER NUMBER)
(120	TRADETEAM PICKNOTE)
(121	TRADETEAM ASSEMBLEY STOCKROOM)

Use the Graphics Screen to display Routes

From the Graphics Panel

Point to any link in the required route and click the left mouse button as follows -

single click	display the route in the top text panel
double click	display the route in the middle text panel
click three times	display the route in a pop-up window (repeat for multiple routes)

Delete all Calls without Orders from a Route

From the Route Panels

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options click on Delete Calls without Orders using the LHB. All the Calls (for this route only) without a valid order will then be permanently removed for this day's work.

Recalculate Breaks

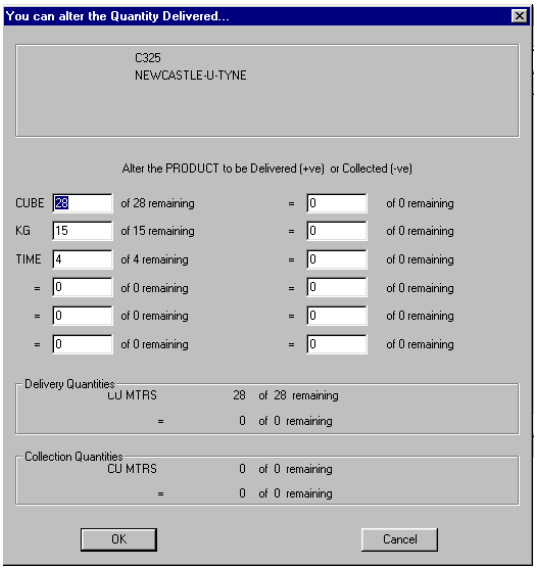
The menu option Recalculate Breaks will re-define the breaks in this route and calculate their best positions.

Change Quantities delivered or collected at a Call

From the Route Panels for Strategic Studies

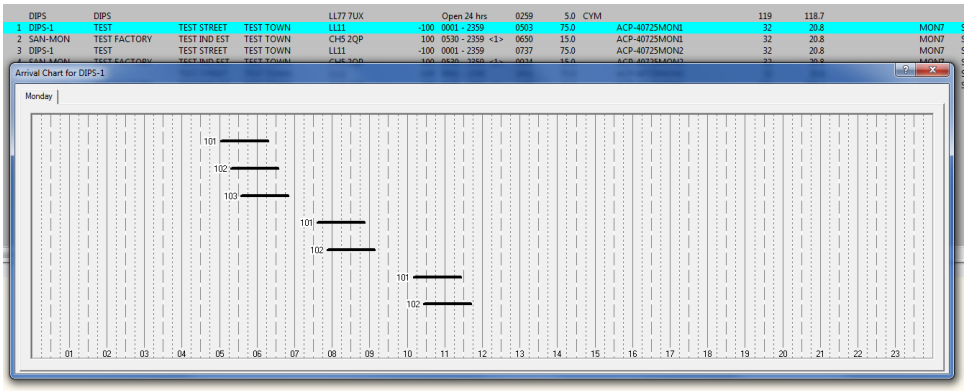
Point to the appropriate call using the mouse cursor and click with the RHB to display the pop-up menu. From the list of options select Change Qdel and Qcol for.....

A dialog window will then appear with the Call Ident and address information with fields for all 12 product types and summary boxes for Delivery Quantity (Unit 1 and 2), and Collection Quantity (Unit 1 and 2). These will be 0 where values do not apply. Using the LHB on the mouse click into the relevant field and change the Product Quantity accordingly using the keyboard. Click on OK to change values or Cancel to quit.



Arrival Charts for multiple visits to a call in the same plan

When multiple visits are being made to the same location ina a single plan (using orders or shipments for example), a new menu option on the route panel **Arrival Chart for……** will show a bar chart with the route numbers and the time of the day that route is at the call. The chart spans 00:00 to 24:00 for the day in question with each hour indicated at the bottom.



Route Planning Deferment Codes and Errors in Routes

If a call or order cannot be route by a planning program, it is possible to display a deferment reason code. Once the Reason Code column has been set in the required position using the Style, Deferments list menu option, a numeric value will be displayed including theses codes

0	Call was not entered into routing phase (prevented by parameters set, routing interrupted by user or default case as program is loaded)
-1	Call Frequency is too low in DCP (Filters have been set)
-3	Call is never open (delivery windows severe or vehicle unloading times too high)
-4	Call is never open (Day Restrictions)
-5	Call Frequency exceeds Depot Shifts available (amend call or use frequency modifier parameter
-7	No row on TTMATRIX for call (re-run the matrix option to include the call)
-9	Call not assigned to a depot (mass file may be corrupt)
-11	Vehicle Size Restriction too small
-12	More than 1 Product Combination Index (Temperature) for this call
-16	Cannot mix deliveries and collections and this call does both
-17	Illegal mixture of PRODUCTS at this call
-18	Not enough combinations of routes for the required number of visits found (high frequency and distance from depot may conflict)
-19	Not enough insertion possibilities found on routes (not enough shift time, vehicles, days available etc)
-28	Strict Phasing Gaps is Set & Frequency is not a multiple of the no. of weeks in the DCP (eg 6 in a 28 day DCP)
-33	Call has Booked Time set to MUST and the order has no booked time set
-49	Call has Carriage Paid set to YES to exclude it from routing
-52	Frequency is ZERO due to Profile settings for the call or product
-53	Profiled Delivery Days conflict with Call Opening Day Restrictions or Linked Jobs do not have the same frequency as the days they are open
-55	Quantity too low in DCP (Filters have been set and this call fails on one or more)
-66	Call maximum vehicle size restriction is smaller than the smallest vehicle available
-76	Work Time is too high exceeded when call is put on longest route possible
-77	Maximum Shift time exceeded when call is put on longest route possible
-78	Maximum Travel time exceeded when put on longest route possible
-79	Maximum Travel distance exceeded when put on longest route possible
-81	Linked Job is missing (could be due to the due date not being visible in the Start and End dates)
-91	Call grid reference has not been set (ZERO) or is invalid
-92	Call has either '1st Week of Delivery' defined and it lies beyond the study length

Errors in Routes displayed in Egotrip mode

Errors in routes or trips are displayed initially an error column showing simple information such as EAT for time violations or >Unit1 for over-loading. For more detailed information and tips to solve problems, click with the RHB on the required call or order to display the pop-up menu. From the list of options click on **Error details for……** using the LHB. A pop-up information box will then appear for this call. Click on OK or press the Enter key to continue. When the Route Summary Panel is visible, pressing the **F2** key will jump to the next route with an error and display the route in the top route panel. Pressing the key again will move to the next and so on. At the end of the list it will loop round and show the first route again.

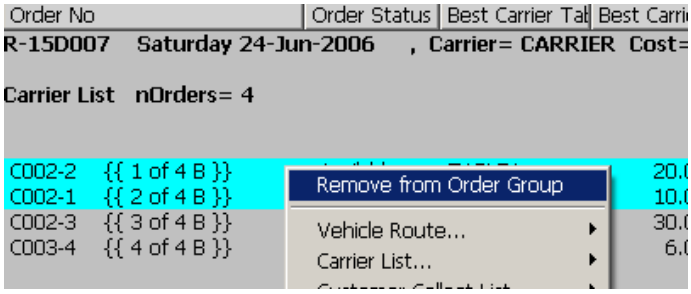
Show Orders or Calls on Multiple Routes

There are two methods of displaying other routes for the same delivery point.
1. Click with the RHB on the required call line to display the pop-up menu. From the list of options go to Other Routes for…….. and then from the sub-menu that appears select either Same Days (to display all routes for the same departure day) or All Days (displaying all routes for the call including other days).
2. Available on either route headings or the deferred list headings is an option to display **Routes with the same account** . If this option is employed it is possible to display the routes for that account by a double-click of the LHB on this field.

In both cases all the indicated routes will then appear as pop-up route boxes (if any are currently displayed in a panel these will be cleared). For orders on the deferred list, this list will be sorted so that the relevant account number appears at the top of the list. A menu option is also available for this function if the call line selected has an order on other routes or deferred. Bold type is used for each occurrence of the call to aid identification.

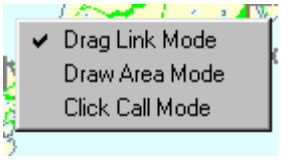
Removing Orders from Groups

By selecting orders within a group and clicking the right hand mouse button, the menu option **Remove From Order Group** can be used to isolate deliveries and deal with them individually. This may be useful for larger orders or where groups may be too large for a single vehicle. Once isolated orders can be moved individually. If they are moved onto another route or into the deferred list, they can subsequently combine into or form another group. For example if both highlighted orders in the picture below were moved onto another route together they would form a group of 2 with the description {1 of 2 C} and {2 of 2 C}.



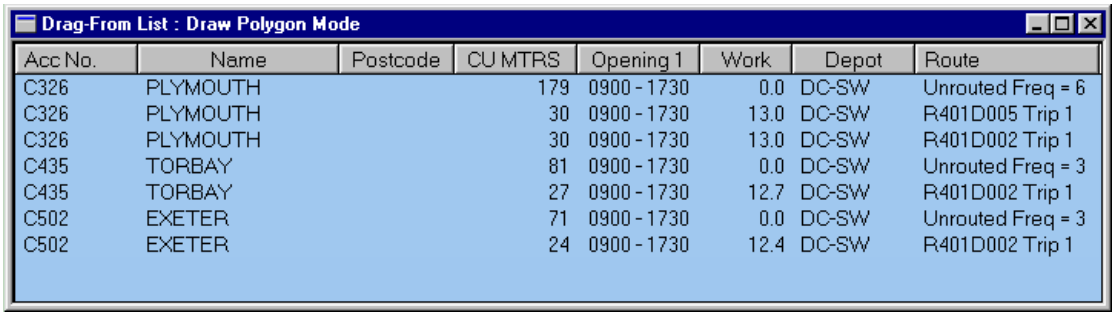
Working with the Lists in Graphics Mode

Click with the RHB on a graphics window to display the pop-up menu. From the list of options select either Draw Area Mode or Click Call Mode using the LHB.



Working with Lists in Draw Area Mode

Draw Area Mode allows the mouse to be used to draw freehand a line around a group of calls, which are then added to a list-box for dragging onto other routes in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Draw Area Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.



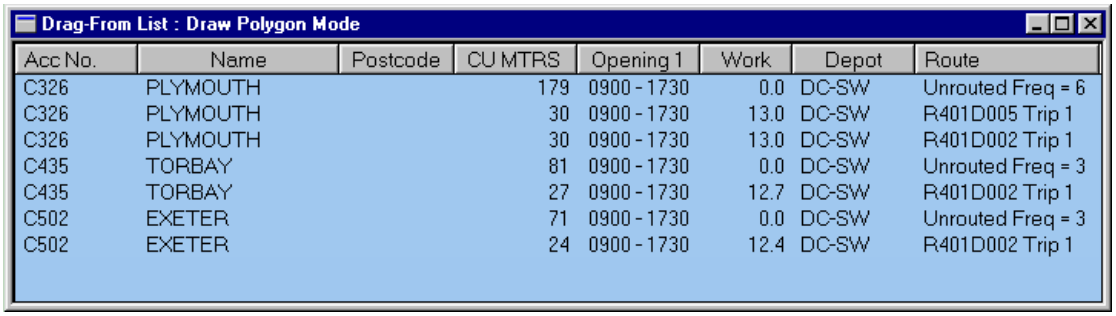
Acc No.	Name	Postcode	CU MTRS	Opening 1	Work	Depot	Route
C326	PLYMOUTH		179	0900 - 1730	0.0	DC-SW	Unrouted Freq = 6
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D005 Trip 1
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D002 Trip 1
C435	TORBAY		81	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C435	TORBAY		27	0900 - 1730	12.7	DC-SW	R401D002 Trip 1
C502	EXETER		71	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C502	EXETER		24	0900 - 1730	12.4	DC-SW	R401D002 Trip 1

On the graphics screen, then **click and hold down the LHB** and begin to draw the line as required. Once the LHB is released any calls within that area will be added into the list-box (including those on already routes). Click with the LHB on the necessary call or calls in this list to select them and drag the highlighted calls into position in the required route text panel using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

The blue display box used by Draw Area Mode to list the Calls / Orders in the user defined area now has a Summary field on the top line to show a total sum for all of the primary vehicle units of the calls.This option is available for modes such as Warefrom and Egotrip Routing and should therefore provide a useful guide when moving drops into a route or allocating them to a depot.

Working with Lists in Click Call Mode

Click Call Mode allows the mouse to be used to click on groups of calls, which are then added to a list-box for dragging onto other routes in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Click Call Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.



Acc No.	Name	Postcode	CU MTRS	Opening 1	Work	Depot	Route
C326	PLYMOUTH		179	0900 - 1730	0.0	DC-SW	Unrouted Freq = 6
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D005 Trip 1
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D002 Trip 1
C435	TORBAY		81	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C435	TORBAY		27	0900 - 1730	12.7	DC-SW	R401D002 Trip 1
C502	EXETER		71	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C502	EXETER		24	0900 - 1730	12.4	DC-SW	R401D002 Trip 1

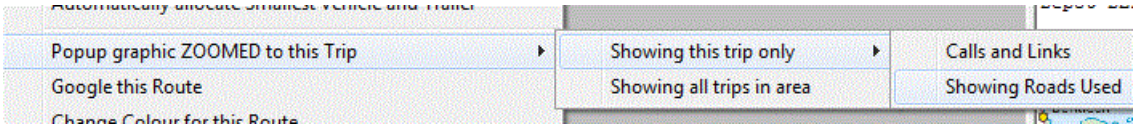
On the graphics screen, then **click the LHB** on the required calls, which are added into the list-box (including those on already routes). Click with the LHB on the necessary call or calls in this list to select them and drag the highlighted calls into position in the required route text panel using the RHB. A red bar will appear in the required route to indicate the position between existing calls or depots.

Displaying Individual Routes in Pop-Up Graphics Windows

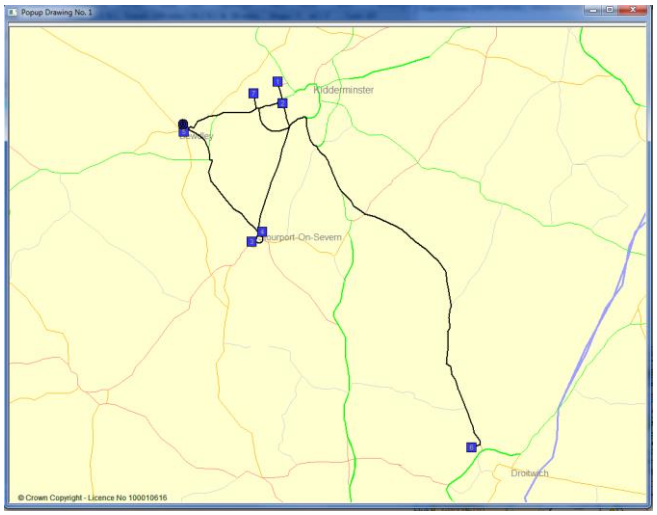
From the Route Panels

Click with the RHB on the required route or trip to display the pop-up menu. From the list of options go to Pop-up Graphic ZOOMED to this Trip and then from the sub-menu that appears select either Showing Only this Trip (with options for Calls and Links or Roads Used) or Show All Trips in Area using the LHB.

A Graphics window will then open to display the required area including this trip (and all other trip is required). The selected trip will be displayed using wider graphics lines than other routes to aid identification.

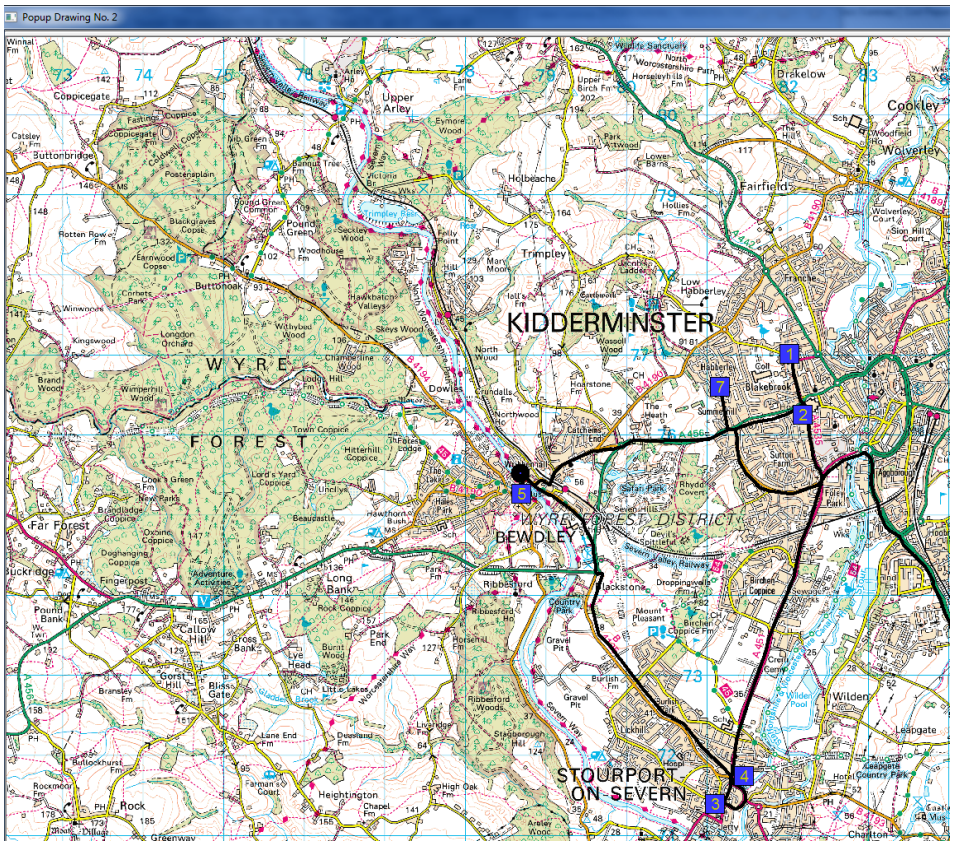


If Showing only this Trip is selected with Calls and Links, the route will also feature the drop numbers displayed at each call. These drop numbers can also be added to the route text panel display using the column '#' in Style Headings. Links may then be dragged to modify the route sequence or to add other drops as required.



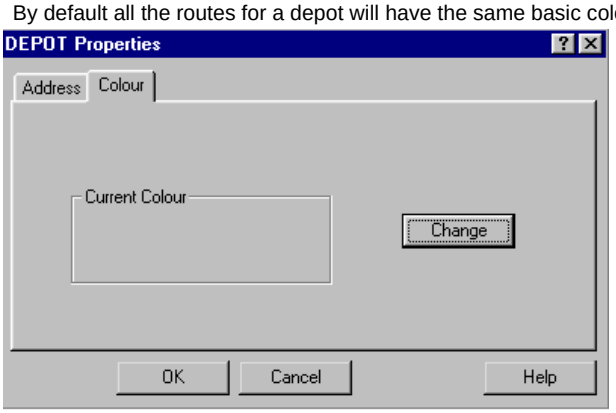
The Showing Roads Used item will draw a new Graphics window to display the depot and drop numbers, but for information purposes will show a black line along the roads used to travel from point to point. Links cannot be dragged onto other drops in this mode.

Whilst this option is designed with finished routes in mind, it is possible to move links on the text panel to re-sequence or add drops whilst this picture is displayed – use the Refresh menu option on the map to re-draw as required.



Setting Colours for Routes

By default all the routes for a depot will have the same basic colour defined by the depot colour field. To change the colour, point to the relevant depot using the mouse cursor and click with the RHB to display the pop-up menu. From the list of options select Depot Details using the LHB or point to the appropriate line and double-click the LHB.

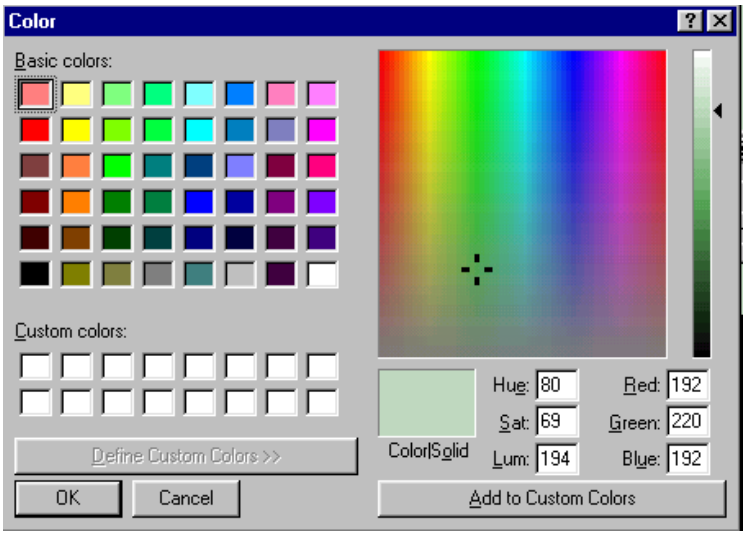


A notebook containing various call information is displayed as a pop-up. Click with the LHB on the appropriate tab at the top of the notebook to select the required page. Click with the LHB on the Change Colour button and the colour dialog will appear.

Either

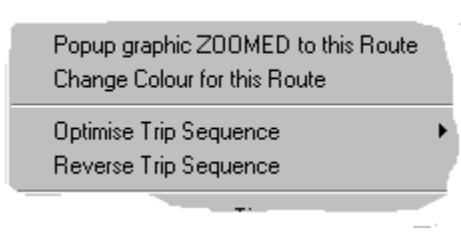
a) select a colour from the given palette of basic colours , or

b) to define a custom colour, click the option button to display the right hand side of the dialog, click anywhere in the matrix and then use the slides at the right of the matrix to adjust the colour attributes (add to custom colours if required)



the click OK to save the choice. This will amend all basic route colours for that depot; that is those numbers not having an individual setting.

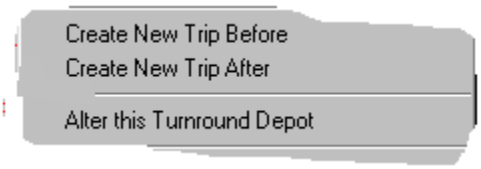
Changing the colour for individual routes



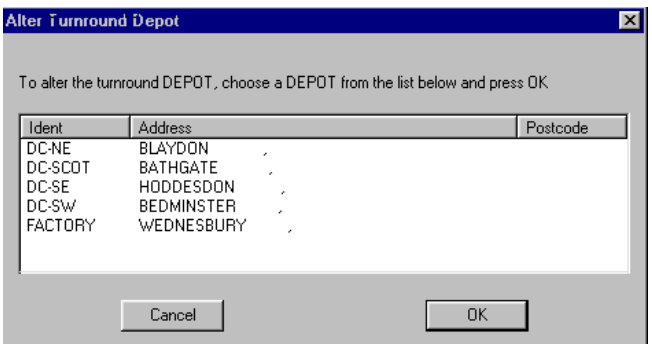
Click with the RHB on the required route or trip to display the pop-up menu. From the list of options click on Change Colour for this Route using the LHB. The colour dialog will then operate as above.

The route colour once set will apply **permanently** to this route.

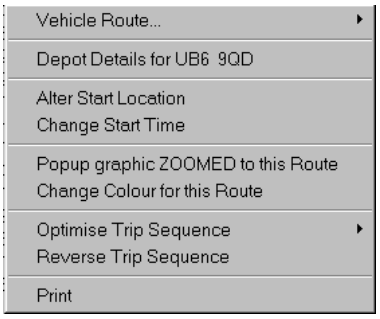
Changing the Turnround Depot between Trips



To use this function two or more trips must already exist for a route. To change the depot between trips, point to the depot at the end or beginning of either trip and click with the RHB on the required route or trip to display the pop-up menu. From the list of options click on Alter this Turnround depot. A selection window will then open to display the depots available. Select a depot and then click OK .



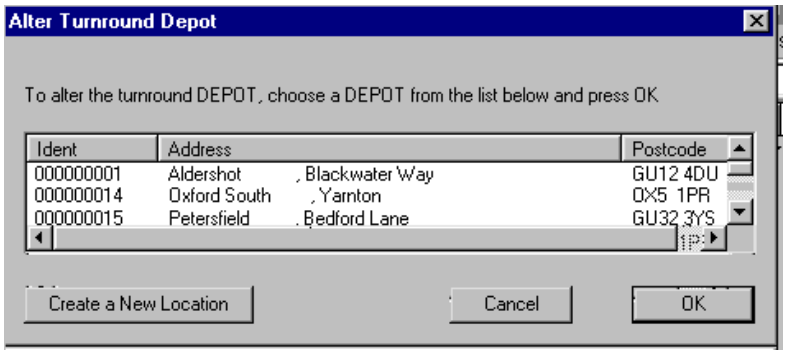
Alter Start/Finish Times and Locations for Manplan



Changing a Start or Finish Location for a Route

To use this function two or more trips must already exist for a route. To change the start or finish location of a route, point to the location at the end or beginning of the route and click with the RHB to display the pop-up menu.

From the list of options click on Alter Start (or Finish) Location. A selection window will then open to display all the current locations available. Select a point and then click OK .

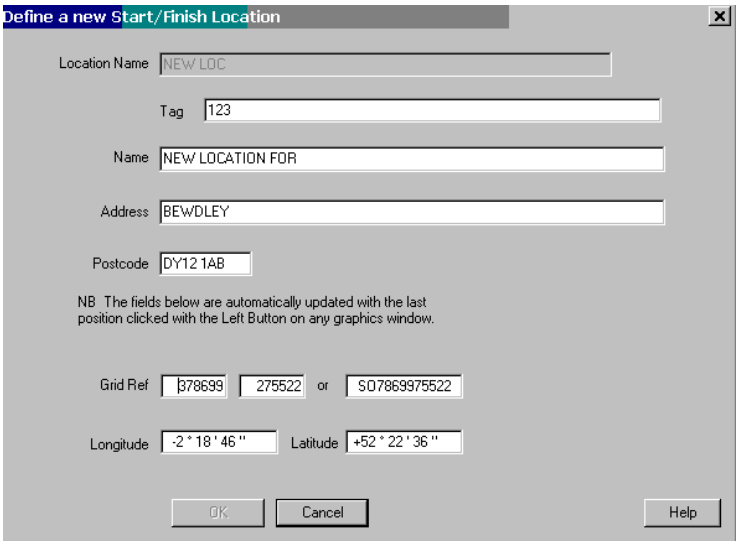


To create a new location click on the appropriate button to display the dialog for a new point. Fill in a location reference and hit the TAB key to move to the address details. There are a number of ways of selecting a point -

1. using the postcode field to enter a valid postcode
2. entering Ordnance Survey or Longitude/Latitude grid reference values
3. clicking a point with the LHB on a graphics screen

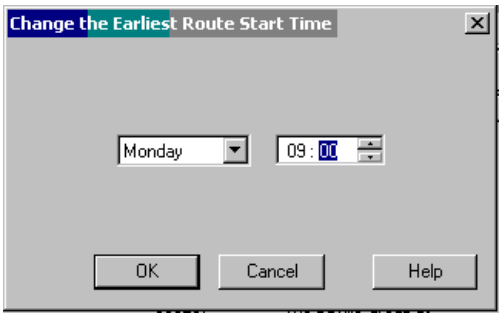
Click on the OK button to complete the process.

Please note that if you have created a new location in this way, the Travel, Run Matrix option must be completed in order to calculate times and distances properly.



Changing a Start or Finish Time for a Route

Click with the RHB on the required route to display the pop-up menu. From the list of options select Change Start (or Finish) Time using the LHB. A Dialog window will then appear with a spin button to increment the hours or minutes accordingly. Alter



From the Text Panels or Summary View
natively values may be edited using keyboard numbers. To change the minutes value, point to it and click with the LHB to highlight the value and then change as before. Choose OK to confirm and apply the changes or Cancel to quit.

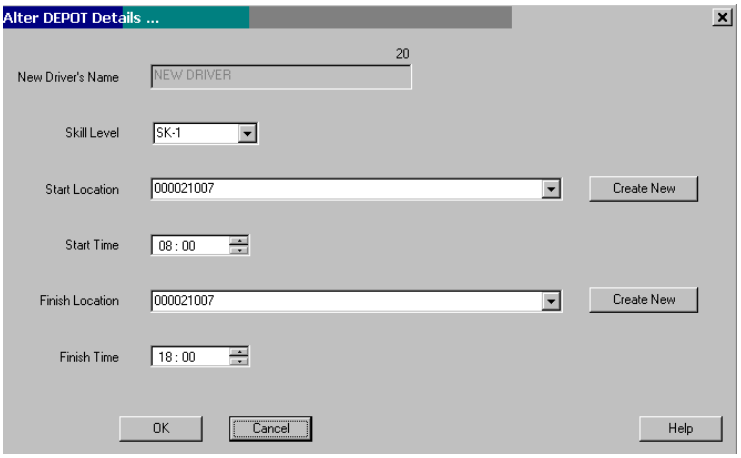
Create a new Driver's Route for Manplan

This process can be done from the relevant Depot properties page in Route Summary Panel. Point to the depot and click the RHB to display the menu and then click LHB on the option. Use the Drivers Tab Page to click on New to create a new driver When New is selected a further pop-up dialog box will appear.

Fill in a name for the new driver and hit the TAB key to move to the detail. Skill levels and locations may be selected from drop-down boxes and times amended using spin buttons.
To create a new location, click on Create New to display the dialog for a new point. Fill in a location reference and hit the TAB key to move to the address details. There are a number of ways of selecting a point -

1. using the postcode field to enter a valid postcode
2. entering Ordnance Survey or Longitude/Latitude grid reference values
3. clicking a point with the LHB on a graphics screen

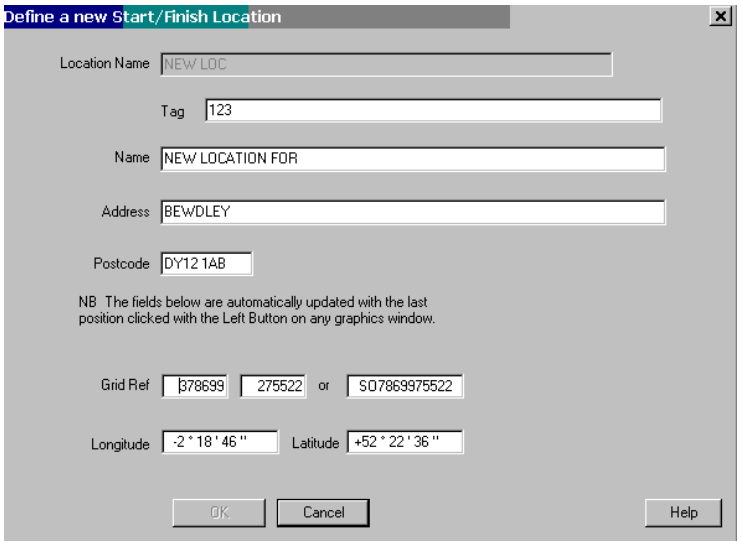
Click on the OK button to complete the process.



Please note that if you have created a new location in this way, the Travel, Run Matrix option must be completed in order to calculate times and distances properly.

Finally Click the OK button to display the route.

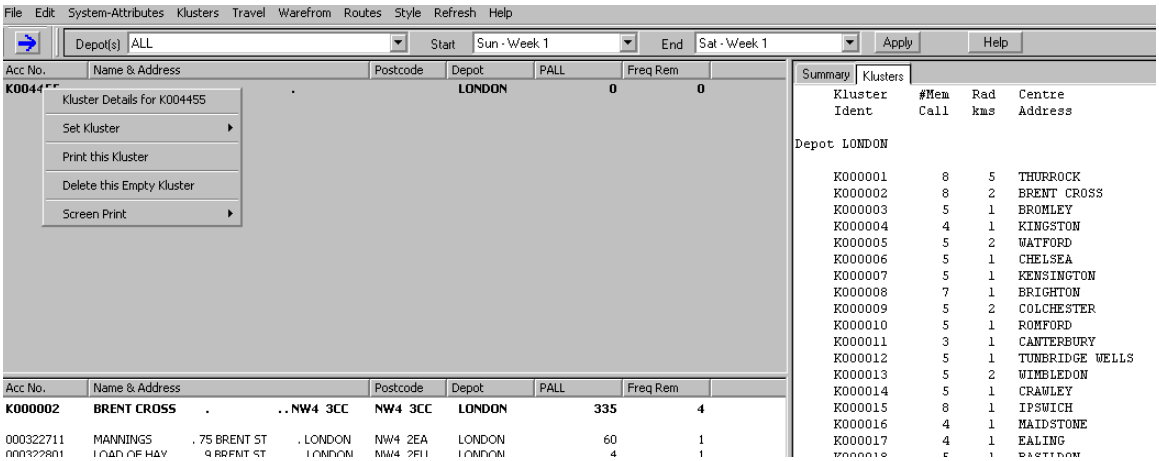
New routes can also be created from the Summary Panel using the Route Summary section. Each depot is displayed above the appropriate summary section listing all routes. Click with the RHB on the depot name and from the menu select the required option to receive the dialogs above.



Klusters

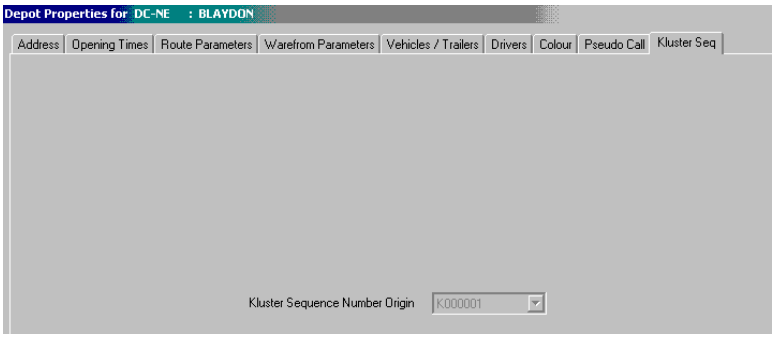
Klusters Mode

The Klusters function provides a means of dealing with larger numbers of strategic call entities by grouping them together in an area. The area is termed a kluster and is made up of the individual call entities that keep their identity, though the Route Planning, Warefrom and Matrix functions can all deal simply with the kluster entity itself rather than each individual call.



In such a way using klusters can decrease the time taken to run DiPS programs and the output produced as it reduces the detail involved in analysis. Once klusters are established on a study they will appear in all modes rather than the individual call data.

They will be created with a sequence number between 000001 and 999999 which can be set by the Kluster Seq Number Origin field available on every Depot Properties screen.



Allocation of calls to klusters is based on the grid references of the calls and will not take into account factors such as rivers, tunnels and so forth. The kluster will be constructed around a main call (usually high frequency or high visit time) and this will appear as the primary call within the kluster. It is this call that is used to give the cluster a location grid reference. Certain parameters are employed to ensure that the kluster sizes do not exceed acceptable levels (in terms of radius, delivery quantity and so on). In most instances the default values set for these options will provide adequate results for a Klusters run.

Once Klusters have been created any manual amendments may be done with no regard to the constraining factors of the parameter settings. For example more calls may be added to a Kluster than the maximum member field allows.

Klusters Mode

Klusters mode provides the means for data to be displayed and calls to be transferred between klusters by manual interaction using the mouse pointer. The option will load all klusters and calls selected and construct a scaled graphical image of the area to be examined (displayed on the graphics panel). Calls may then be moved either using text panels to drag calls or graphically by drawing boundaries or clicking calls.

Initially klusters must be set so that any calls identified by mouse actions may be transferred. To set the kluster click the RHB on either of the text panels to display the menu and select the kluster using a single click of the LHB on the relevant cascade menu option.

Alternatively from the graphics panel to choose a kluster click with the LHB as follows -
single click - display the kluster in the top text panel
double click - display the kluster in the middle text panel
click three times - display the kluster in a pop-up window (repeat for multiple klusters)

In the text panels the selected kluster is displayed with the following default information in columns - Acc No., Name & Address, Postcode, Depot, Unit1, Freq Rem. Use the Kluster Headings option in the Style menu to set the required columns and positions for the text panels. Select the option by clicking the LHB on the mouse to display the dialog window. For more

information see the section on Creating and Changing Styles. Summary information is also shown for all klusters giving ident, no of member calls, radius in kilometres, address, and postcode.

A row is shown for each call in a kluster. A row can be highlighted using the LHB to enable a call to be moved. Double-click will display the call properties dialog. As entities are moved the kluster displays are updated automatically to reflect the changes made. Scroll bars are available at the right and bottom edges of the document window. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the document. You can use the mouse to scroll to display other sections of the kluster.

To display a kluster or change the current kluster click with the RHB in a text panel and move over Set Kluster. The cascade menu displays all the current klusters. As the mouse cursor is moved over an item the next level of menu automatically appears. In the first instance the depot will be displayed. If the cursor is moved over a depot a further menu will appear to display a choice of existing klusters and a **New** option. Using the LHB click once to add an existing kluster or if New is selected a new kluster with the next sequence will appear. The sequence number is set by the Kluster Seq Number Origin field available on every Depot Properties screen.

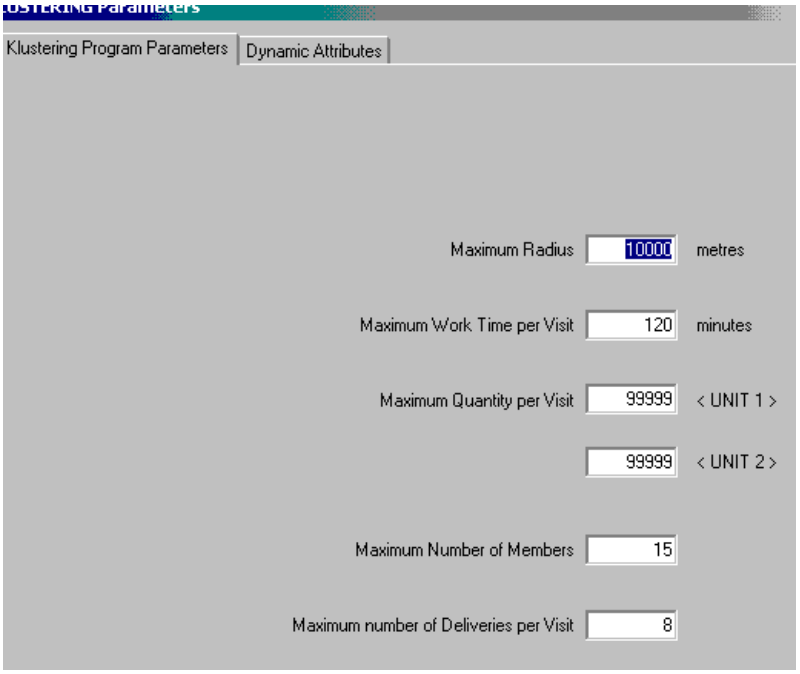
Klustering Parameters

These should be changed if necessary before attempting to Run Klusters. There are a number of values available to restrict the kluster building mechanism. In most instances the default values set for these options will provide adequate results for a Klusters run. They will be created with a sequence number between 000001 and 999999 which can be set by the Kluster Seq Number Origin field available on every Depot Properties screen.

Program Parameters

Maximum Radius

This parameter governs the Maximum Radius in meters for any cluster of calls constructed by the KLUSTERS program. The radius is defined as the straight line (crowfly) distance from the main central call to the furthest call on the periphery of the cluster. By default it is set to 10,000 meters or 10 kilometres. This value may be reduced in dense delivery areas to reflect a more concentrated profile of points. It is not recommended that the limit be set much higher than 10 kms under normal circumstances as the allocation of calls to klusters is based on the grid references of the calls and will not take into account factors such as rivers, tunnels and so forth. With too high a maximum radius set this could produce adverse groupings of calls that are in fact inaccessible from each other (e.g. across a river estuary).



Maximum Work Time

This parameter controls the maximum total work time permissible for any kluster at all the calls on a single visit. It provides a way of ensuring that the klustering process does not pre-empt any routing solution by creating klusters that must be routed as single drops on a route. By default it is set to 120 minutes to reflect this policy.

Maximum Quantities per Visit

This parameter controls the maximum total vehicle units permissible for any kluster at all the calls on a single visit. It provides a way of ensuring that the klustering process does not pre-empt any routing solution by creating klusters that must be routed as single drops on a route; or klusters that cannot be routed on even the largest vehicle class. By default it is set to a high value (99999) as vehicle units are a function of data input on creating a study. Set the value to an appropriate level if it is required as a limiting factor.

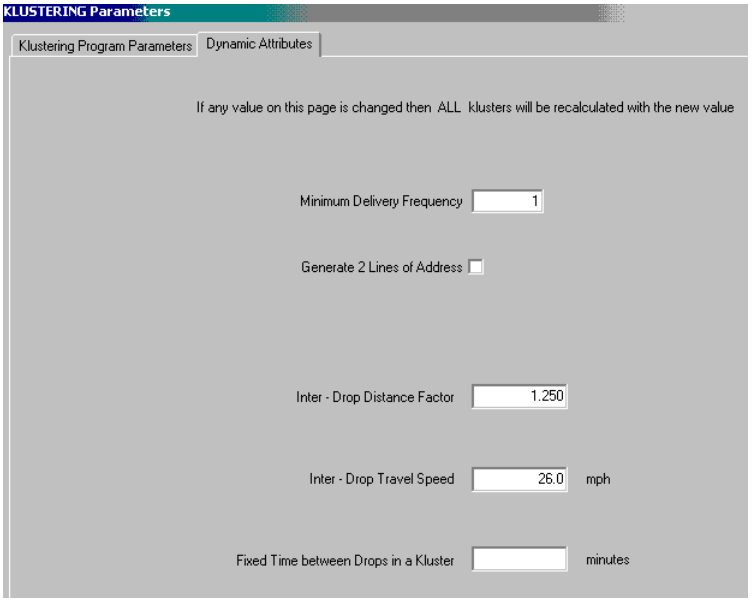
Maximum Number of Members

This field defines the Maximum Number of Members (or Calls) that any automatically constructed Kluster may contain. No Kluster will be created with more than this limit. By default it is set to 15 calls as a maximum

Maximum Number of Deliveries per Visit

This field defines the Maximum Number of Calls that may be serviced on any ONE visit to any Kluster. No Kluster will be created with more than this limit. By default it is set to 8 calls per visit as a maximum.

Dynamic Attributes



These attributes are applied to all existing data such that when they are changed the klusters are automatically re-calculated to reflect the new parameters.

Minimum Delivery Frequency

This parameter defines the minimum frequency that any resultant kluster will have. It is often useful when employing the klustering logic to overcome problems of infrequent demand. For example with a DCP of 28 days (or 4 weeks) a setting of 4 will ensure that each kluster will contain a call that requires a delivery once per week on average; that is 4 times in the monthly period. Any isolated lower frequency calls will be allocated to their nearest kluster if possible or have a frequency increase factor to create a kluster of their own if this is impossible. By default it is set to 1.

Generate Two Lines of Address

When Klusters are created and displayed it is possible to employ either one or two lines of address. This information is drawn from the primary call within the kluster and is usually merely the town or area name, using the last line of the call address fields. By default a NO is set to produce a single address line. However in cases where one lines is not sufficient or where the last line includes information such as a county name, changing this field to YES will provide a second address line.

Inter-Drop Distance Factor

Since the use of the Klusters routine pre-empts the running of a Matrix, it does not use accurate road data for distances along links of the network. The Inter-Drop Distance factor is a curvature factor applied to the assumed straight line distances between call points, which combined with the calculated crowfly distances produces a valid estimate of travel distance within a kluster once it has been constructed. This estimate is also then used with the Inter-Drop Travel Speed to produce a driving time between calls in a Kluster. The default curvature factor is 1.25 which allows for an extra 25% over and above the crowfly distance.

Inter-Drop Travel Speed

Since the use of the Klusters routine pre-empts the running of a Matrix, it does not use defined Road Speeds. This Inter-drop Travel Speed parameter is employed as an average vehicle speed between calls, which combined with the calculated crowfly distances and Inter-Drop Distance Factor produces a valid estimate of travel time within a kluster. The default speed is 26.0 mph, being an acceptable average speed for most vehicle types and delivery areas.

Fixed Time between Drops in a Kluster

This field is used to add an additional fixed time between drops in a kluster, in effect adding a "dead-time" to the travel time between points. It is used in addition to any travel time calculated using the Inter-Drop Travel Speed and the Inter-Drop Distance Factor parameters. There is no default value for fixed time.

Run Klusters

Select Run Klusters using the menu option and the routine will then operate to allocate calls to new klusters. On the graphics screen calls will begin by appearing as green dots and will be coloured to match the kluster they belong to as it is built (the same colour calls are in the same kluster). They will be created with a sequence number between 000001 and 999999 which can be set by the Kluster Seq Number Origin field available on every Depot Properties screen.

Please note that any existing routes for depots included in the klustering process will be removed as they will be invalidated by the grouping of calls, since calls in a single kluster cannot be on more than one route.

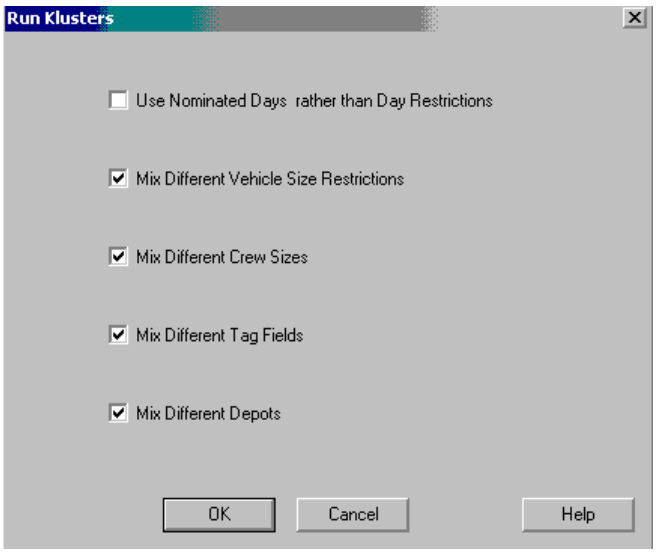
Klusters Run Options

Use Nominated Days rather than Day Restrictions

The klustering routine by default will only group calls with the same day restrictions. This will ensure that klusters are not produced that are restricted from being delivered on every day of the week by calls with varied open days. As an alternative to calls' day restrictions, the nominated day fields may be used.

Mixing Criteria

A number of parameters may be employed to stop calls mixing within a kluster. Criteria include Vehicle size restrictions, crew size, call tag fields and depot. By default all are set on: that is a single kluster may include calls with different vehicle size restrictions in which case the smallest vehicle size will apply.



Create Klusters by Postcode

Select Klusters by Postcode using the menu option and the klustering routine will allocate all calls having the same postcode area to a kluster. As an example calls with postcodes DY12 1AB, DY12 2RR, DY12 3DD will all be added to a kluster called Dy12. All normal klustering parameters are ignored.

Changing Kluster Members

From the Text Panels

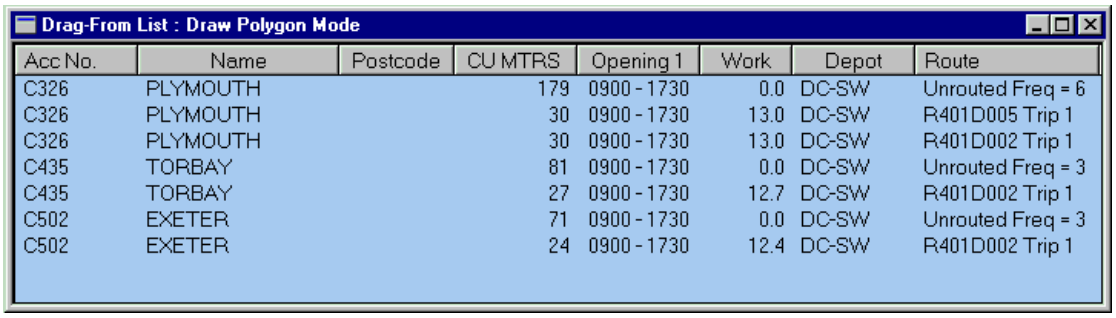
Click with the LHB on the necessary call or calls in any kluster list to select them and drag the highlighted calls into the required new kluster list. A red bar will appear in the required route to indicate the position between existing calls or klusters. Multiple transfers may be achieved either by holding down the LHB and dragging over the required objects or using CTRL key to click on and thus select individual calls. All reports will be updated as activity occurs.

From the Graphics Panel

Click with the RHB on a graphics window to display the pop-up menu. From the list of options select either Draw Area Mode or Click Call Mode using the LHB.

Working with Lists in Draw Area Mode

Draw Area Mode allows the mouse to be used to draw freehand a line around a group of calls, which are then added to a list-box for dragging onto klusters in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Draw Area Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.



Acc No.	Name	Postcode	CU MTRS	Opening 1	Work	Depot	Route
C326	PLYMOUTH		179	0900 - 1730	0.0	DC-SW	Unrouted Freq = 6
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D005 Trip 1
C326	PLYMOUTH		30	0900 - 1730	13.0	DC-SW	R401D002 Trip 1
C435	TORBAY		81	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C435	TORBAY		27	0900 - 1730	12.7	DC-SW	R401D002 Trip 1
C502	EXETER		71	0900 - 1730	0.0	DC-SW	Unrouted Freq = 3
C502	EXETER		24	0900 - 1730	12.4	DC-SW	R401D002 Trip 1

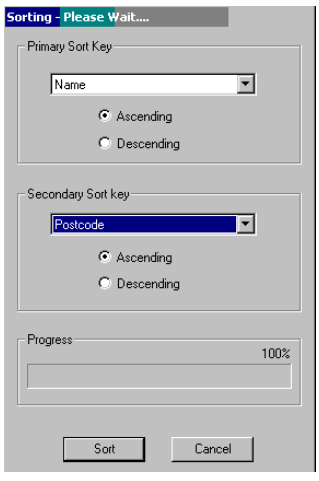
On the graphics screen, then **click and hold down the LHB** and begin to draw the boundary area line as required. Once the LHB is released any calls within that area will be added into the list-box (including those already in a kluster).

Click with the LHB on the necessary call or calls in this list to select them and drag the highlighted calls into position in the required kluster text panel using the RHB.

Working with Lists in Click Call Mode

Click Call Mode allows the mouse to be used to click on groups of calls, which are then added to a list-box for dragging onto klusters in text panels. Click with the RHB on a graphics window to display the pop-up menu and select Click Call Mode using the LHB. A pop-up list-box will then appear showing a maximum of 1000 items.

Dragging functionality is as above for Draw Area mode.



Sorting the List of Calls

To sort Data lists by any column click once with the LHB on the column heading. Use a double click to show a dialog offering the choice to sort by any of the columns in the data list using Ascending or Descending priorities (the default is ascending). A secondary sort key may also be selected using the list box option. Data will be sort firstly on the primary key and then within equal values by the secondary key. Click on the Sort option button with the mouse LHB and the progress indicator will start. It is possible to interrupt a long sort by clicking the LHB on the Cancel option, and just display the initial re-ordering already completed.

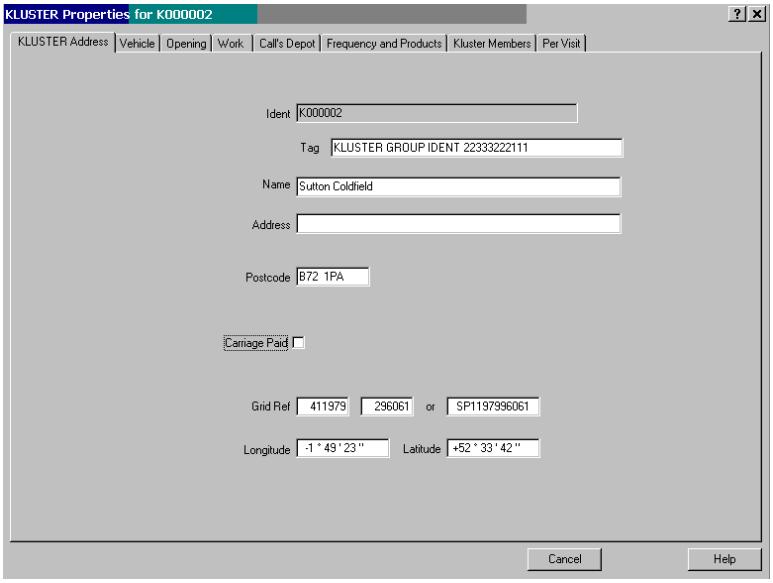
Deferred Calls

Calls not currently allocated to a kluster are added to the deferred list which appears as the bottom left hand panel. Basic information displayed includes Account No. Address, Postcode, Quantity in terms of vehicle units, and work time. These defaults may be changed using the Style menu option for Klusters headings if required. To add a call to a kluster, click with the LHB on the necessary call or calls in the deferred list to select them and drag the highlighted calls into the kluster list using the RHB.

Delete an Empty Kluster

To delete an empty kluster , click with the RHB on the required kluster to display the pop-up menu and click with the LHB on the Delete menu option.

Kluster Details



Point to the appropriate kluster in any of the displays, and using the mouse cursor either double-click with the LHB or single-click with the RHB to display the pop-up menu. From the list of options select Kluster Details using the LHB. A notebook containing various information is displayed as a pop-up. Click with the LHB on the appropriate tab at the top of the notebook to select the required page.

Please note that as a kluster is made up of a number of calls, the information initially visible on the screen is calculated with regard to these member calls. Changing call details will lead to a re-calculation of the kluster information. In this way Kluster information may not be changed directly with Cancel and Help buttons only available. To change information amend the individual call details as required.

Examples of information would be ADDRESS - a valid grid reference to identify the location; Vehicle access and timing RESTRICTIONS that can also be placed upon an individual kluster location; and DEPOT to allocate a kluster to a depot.

Address Details

Tag Field

In addition to the Ident a further 40 character sub-field (known as the TAG FIELD) may be used to allow for sub-grouping of klusters within the print / delete / transfer functions.
Any combination of characters allows klusters to be processed by matching tag fields following an ALL identifier for an activity. Examples would include the use of the tag XXXX in the tag modifier field of the delete menu which if following the Ident ALL would only delete klusters with the XXXX tag; or the tag A1?? in a transfer option between depots A and B, which would lead to all klusters at depot A with a tag field of A and 1 as the first two characters with any other characters in positions 3 or 4 being transferred to depot B.

Address

Address information is displayed in order to aid identification of points, and appears in the following formats :

Ident
Grid Reference
Address Field 1, 2 (includes Name)
Postcode

The main purpose in using address information is to provide the delivery point or depot point with a valid grid reference so that the Time/Travel Matrix generation programs can calculate an accurate time and distance between points.

Grid Reference

This field is used to display an Ordnance Survey grid reference. It can be made up of either a single alpha-numeric value or a pair of numeric values (one for easting, one for northing). Examples would be - **SU1234** for an alpha-numeric value, and **2233 4455** for a numeric value (easting northing). The purpose of a grid reference within DiPS is to locate the entity in relation to the road network database. It is important to note that only entities with valid grid references will be used in the planning processes. Values may be entered directly into grid reference fields or the use of postcode or gazetteer databases will produce appropriate values to locate the entity.

Address Fields

Up to 40 characters may be used to define the first address line of an entity. There is no limit to the number of entities having the same address lines (either 1 or 2). If this field is blank and a valid postcode is entered into the postcode field of an entity then the name associated with that postcode will be allocated to this field. In the case of sector level postcodes (e.g. DY8 5xx) the first two lines of address will be completed.

You must not use commas , or brackets ( ) in any address lines as the use of these can affect DiPS operations conducted using the macro language, such as rescuing the MASS file.

Postcode

A postcode may be used to define a grid reference for an entity. The general format of the postcode is AAxxB yZZ, where AA is the area code (one or two letters), xx is the area code number and B is a suffix occurring in densely populated areas (London) where only one letter is used for the area code or one number for the area number. The y is the sector number and ZZ is the final walk/street code. All but the ZZ part can be used in normal DiPS operation.

Valid postcode input can be for

AREA level - for example DY12. This is the minimum information required.
SECTOR level - for example DY12 1xx. This provides for a more accurate location.

If a full postcode entry is used (DY12 1AB) the information is accurate to sector level under normal operation.

The postcode entry is cross-checked with the postcode database and the appropriate values are placed in the grid reference fields. You will be warned if the system detects any errors on the input. Messages include :-

Not enough Postcode specified - you must enter an area number (no grid reference produced)
Illegal Postcode area - either the area code or area number is incorrect (no grid reference produced)
Illegal sector number - area level postcode grid reference is used
Missing Space between - cross-check has detected the lack of a space between sections
Missing suffix letter - area requires a suffix letter

Carriage Paid

For strategic issues a Carriage Paid Kluster simply reflects a delivery or collection location that need not be considered for routing but otherwise need to be accounted for in terms of frequency and product demand. The Carriage Paid Kluster can be used to identify certain klusters and prevent them from entering any of the planning programs. It is particularly useful for nominating isolated kluster points that would normally not be considered for routing.

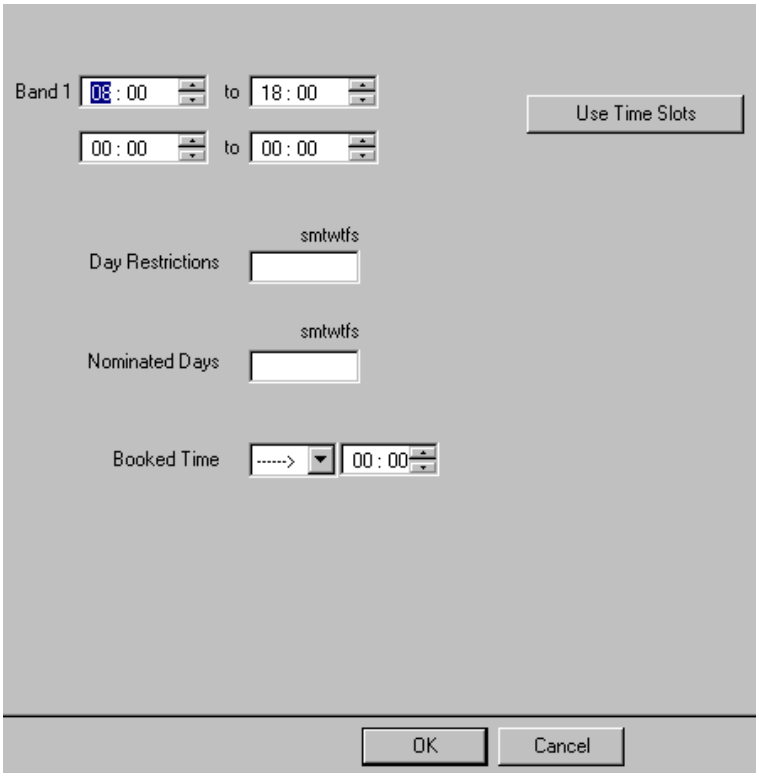
International Country Code

As new klusters are created on the system, they are allocated a default country flag (which appears next to the ident field) that is used to identify the relevant postcode or gazetteer file to locate them. Country codes may also be changed after a kluster or depot has been created.

Longitude and Latitude

As there is no common grid system (e.g. OS National Grid for UK) for the whole of Europe, the International DiPS system uses Latitude and Longitude (or Lat/Lon) to locate points. Two separate fields (one for Latitude and one for Longitude) are used and these appear in the form of: Degrees (+ for east of zero , - for west of zero), Minutes, Seconds. Other locating facilities such as the Gazetteer or Postcode lookup will provide grid references in this format.

Restrictions



Delivery or operating restrictions may be specified in terms of :-

Opening Time and Closing Time for one band; Opening Time and Closing Time for a second band; Booked Delivery Time for specific delivery times; Day Restrictions which govern days and opening bands that are available; Nominated Days which may be used to indicate acceptable delivery days; Vehicle Restrictions which govern vehicle access and loading requirements; Extra Time to allocate additional waiting time at the location
Work Difficulty Class to modify individual work rates per location; and Crew Size to indicate any vehicle manning requirements.

Opening Time of 1st Band

This field uses the 24 hour clock notation of HHMM to define the opening time of the first band of opening. For klusters this is the earliest time a vehicle may arrive to start unloading, for a depot it defines the earliest time a vehicle may leave the depot. It is quite valid to specify values in the first band of opening fields, so defining only one band of opening per day for any entity. For midnight use 0000 (which will produce a blank field). For kluster opening times always ensure that at least one band of opening lies within the shift opening times of the depot they belong to. For depot entities it is possible to define two distinct operating shifts using Shift No.1 and No.2. However it is useful to remember that all vehicles leaving the depot during Shift No.1 will return within that defined band. It is more normal to specify only one shift for a depot, for example values of 0001 and 2359 will simulate a 24 hour depot operation (remember to shut the depot for at least one minute every day so as to allow for the correct calculation of day restrictions).

Closing Time of 1st Band

This field uses the 24 hour clock notation of HHMM to define the closing time of the first band of opening. If only one opening band has been defined, for klusters this is the latest time a vehicle may leave after finishing unloading If two bands of opening are used it may be used to simulate lunchtime closing in conjunction with band two. For example if the closing time of band one is 1200 and the opening time of band two is 1300, the routing package will not allow delivery during that time. For a depot the field defines the latest time a vehicle may arrive back at the depot at the end of its route. It is quite valid to specify values in the first band of opening fields, so defining only one band of opening per day for any entity. For midnight use 2400. For kluster opening times always ensure that at least one band of opening lies within the shift opening times of the depot they belong to.

Opening Time of 2nd Band

This field uses the 24 hour clock notation of HHMM to define the opening time of the second band of opening. It is used in conjunction with opening times in the 1st band. For klusters it may be used to simulate lunchtime closing (if the closing time of band one is 1200 and the opening time of band two is 1300, the routing package will not allow delivery during that time), or in conjunction with day restrictions to simulate early closing or late opening. For example if the two band opening times are 0900-1200 and 1200-1700 it is possible to specify a closure of band two (or band one for late opening) on any particular day to prevent a vehicle being at the kluster after 1200. It is quite valid to specify values in a band of opening fields, so defining only one band of opening per day for any entity, but in this case it is necessary to use band 1. Always ensure that any specified bands of opening do not overlap each other.

Closing Time of 2nd Band

This field uses the 24 hour clock notation of HHMM to define the closing time of the second band of opening. If two opening bands have been defined, for klusters this is the latest time a vehicle may leave after finishing unloading. For a depot the field defines the latest time a vehicle may arrive back at the depot at the end of its route on Shift No.2 operation.

Booked Time and Codes

It is possible in the DiPS system to input either a specific booked time for a kluster or an order, or to use a pre-defined code that references a table of booked time codes for a time window.

Booked Times - This field is used to input a fixed delivery time that must be met for each visit to the delivery point. If required temporary overriding changes to kluster opening times are made during the route planning process to ensure that the booked time lies within the kluster opening bands. 24 hour clock notation is used to differentiate between am and pm periods. A value of 0000 will reset the booked time to be blank. To allow for a window around the booked delivery time to be accounted for when scheduling vehicle (rather than the more restrictive time), a tolerance value may be input to give a global window around the booked time. Different values may be specified for before and after the specific book time. It is recommended that if booked times are to be employed to any great degree, some tolerance be set in order to allow the scheduling process reasonable flexibility in combining deliveries together in feasible routes.

Day Restrictions

The day restrictions field is a seven digit number designed to control opening times in conjunction with the bands defined. Each digit represents a day of the week in the sequence SUN - MON - TUE - WED - THU - FRI - SAT
The value of each digit is determined from the following codes :-

0 - Open for both bands 1 and 2 (i.e. all day)
1 - Closed for band 1 and open for band 2
2 - Open for band 1 and closed for band 2
3 - Closed for both bands 1 and 2 (i.e. all day)

If only one band of opening is defined then all references to band 2 will be ignored.
As an example a value of 3102003 for band 1 = 0900-1300 and band 2 = 1300-1700 would define the following -

Closed all day (both bands) on Sunday and Saturday
Closed band 1 and open band 2 on Monday 1300 - 1700
Open all day (both bands) on Tuesday/ Thursday / Friday 0900 - 1700
Open band 1 and closed band 2 on Wednesday 0900 - 1300

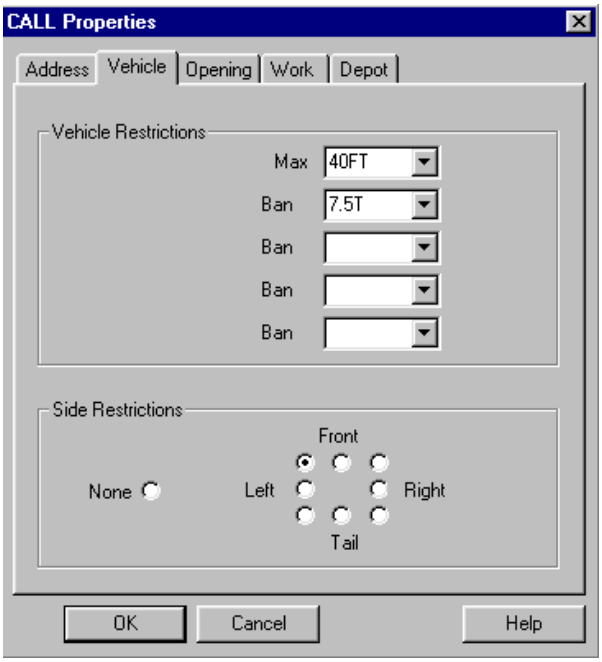
For input from a spreadsheet package use the numerical value as you would expect to see it displayed. The system will account for leading zeros in constructing the seven digit number it requires.

Nominated Days

The nominated days field is a seven digit number (similar to day restrictions) designed to control opening days in conjunction with the time bands defined. Each digit represents a day of the week in the sequence :-
SUN - MON - TUE - WED - THU - FRI - SAT
The value of each digit is determined from the following codes -
0 - Not nominated for delivery (no deliveries to be done that day)
1 - Nominated for delivery (deliveries to be done in any opening time band that day)
The main use of the field is to conduct comparative "what - if" scenarios planning deliveries one way with day restrictions in place and another using the nominated days for delivery. To switch nominated day parameters on within a scheduling run, set the Use Nominated Days rather than Day Restrictions field on the VANGUARD ALGORITHM screen to YES. By default kluster Day Restrictions are used by the scheduling programs.

Vehicle Size Restrictions

The Maximum Vehicle Size drop down box is used to specify the biggest vehicle that may access the delivery point or depot and displays all current vehicle types for selection using the mouse LHB. The system will compare the first unit of capacity of the class in deciding whether it be allowed access. Use any class identifier previously set up using the Vehicle Class option. Kluster vehicle size restrictions (Maximum and Banned) can also be manually typed with ??? wildcards to exclude any vehicle type which match the criteria given and can include ? in any of the four available characters. The system will provide a cross-reference to any value to ensure that it matches at least one existing vehicle class. Four wildcards (????) to exclude all vehicles from a kluster cannot be used. Any attempt to input such values will lead to an error message with the restriction being set to the Default Restrictions maximum specified. Examples of valid fields would be **A???** (excluding classes such as AR22, ARIG, and AB); or **?2??** (excluding classes such as AR22 and ARIG). For route planning purposes a wildcard value in the Kluster's Maximum Vehicle Size field will set the restriction to the **BIGGEST** vehicle type that matches the criteria.



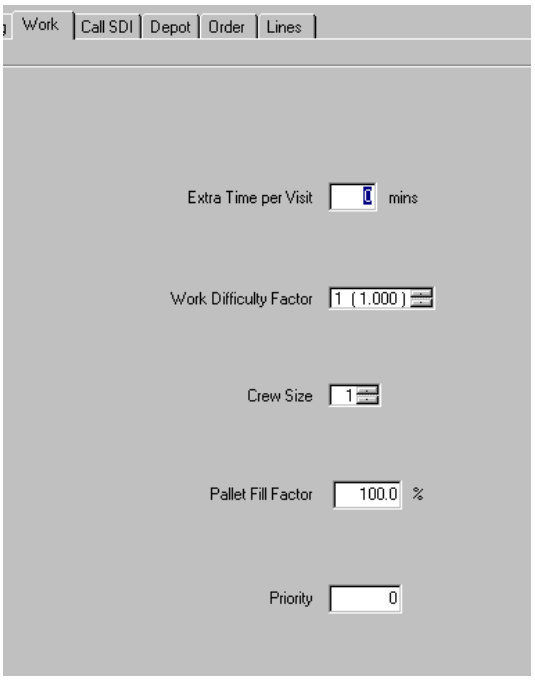
Banned Vehicle Classes

For a kluster entity it is also possible to specify up to four smaller classes that are not allowed access to the kluster. The use of the maximum vehicle field already excludes any larger classes.

Side Loading restrictions

A special feature of DiPS is the ability to establish additional loading restrictions for customers dependent upon loading position on the delivery vehicle. Used in conjunction with loading by side of vehicle parameters, the appropriate radio button is clicked

Kluster Work Parameters



Extra Time

This field has two main meanings in DiPS according to the entity type being updated.
For depots, it represents a fixed time in vehicle minutes for turn-round in between trips of the same route, allowing for unloading/re-loading/driver de-brief etc. This may also be used in conjunction with a Depot Rate to allow for variable turn-round time dependent upon product or vehicle unit values. For klusters, the time represents an additional fixed time in minutes to be added to any work time calculated for the visit, allowing for waiting/queuing. This is generally used as a kluster specific value, with normal work values been specified as product or unit data parameters.

Work Difficulty Class

This value is used to cross reference one of the ten Work Difficulty Factors that may be defined. These values will modify the variable work rate at collection/delivery points and depots. For example if a class of 2 corresponds to a pre-set Work Difficulty Factor of 0.500, the variable work element will be halved accordingly. For a depot this factor will affect the variable turn-round time if set. By default all factors are set to 1.000 (i.e. no modification) and the class is set to 1.

Crew Size

This field is only used where particular vehicle classes have been established with either a one or a two man crew size. It may be employed in conjunction with the Mixed Manning Levels field on the VANGUARD ALGORITHM screen to prevent the mixing of klusters requiring different crew sizes on any route. The variable work time at a kluster point is also divided by the crew size to obtain a new value. For example, a delivery with a calculated elapsed time of 20 mins per visit would be re-factored to be 10 mins if it were delivered on a vehicle with a 2 man crew.

Pallet Fill Factor

The Pallet Fill Factor is used to calculate the actual number of pallets to be delivered to certain klusters that for any reason cannot accept the normal conversion factor from products to pallets (or whatever VEHICLE UNITS are specified). For example in the case of a palletised operation, a particular kluster may not be able to accept delivery of the normal pallets because of height restrictions in racking systems. In such a way the Pallet Fill Factor can be set to re-calculate the number of pallets due for delivery taking into account the new required maximum height. A customer has a height restriction of 6ft - normal pallet maximum heights are 9ft i.e. 6/9) in order to produce the actual number necessary. In the case of a delivery of 10 pallets (at normal height of 9ft), the actual number would be 15.

The factor can be used in all types of delivery, not just palletised operations. The factor will increase all calculated vehicle units to be delivered, whether they be pallets, boxes, or cartons.

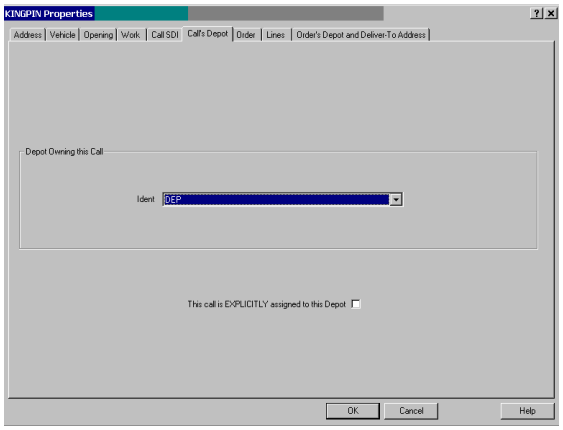
This field may also be used in conjunction with the Extra Units For Pallets parameter to add additional vehicle units for palletised deliveries. In this case where pallets are not to be factored at all a value of 100 % would not factor the number of pallets but would allow the required additional units to be added to that trip.

Priority

Priority values from 1 - 96 may be used to promote klusters within the routing program. An entity with priority set to 90 is ranked above a value of 34 for instance. By default all values are set to blanks (zero). Certain values have special meanings within the routing programs. 97 will force a kluster to be the first drop on a route. 98 will force a kluster to be the last drop on a route. 99 will force a kluster to be first and last on a route (to simulate a drawbar link)

Values of 200+ (i.e. 2xx) will create a 2-day route for the delivery.
Values of 300+ (i.e. 3xx) will create a 3-day route for the delivery and so on.

Priority values can often be useful in routing troublesome klusters that always seem to be deferred in vehicle scheduling runs. A value of 10, for example, would promote the kluster to the top of the routing list, thus ensuring it be placed on a route if at all possible. They can also be used in conjunction with Route Parameters Algorithm Passes to route certain klusters only.



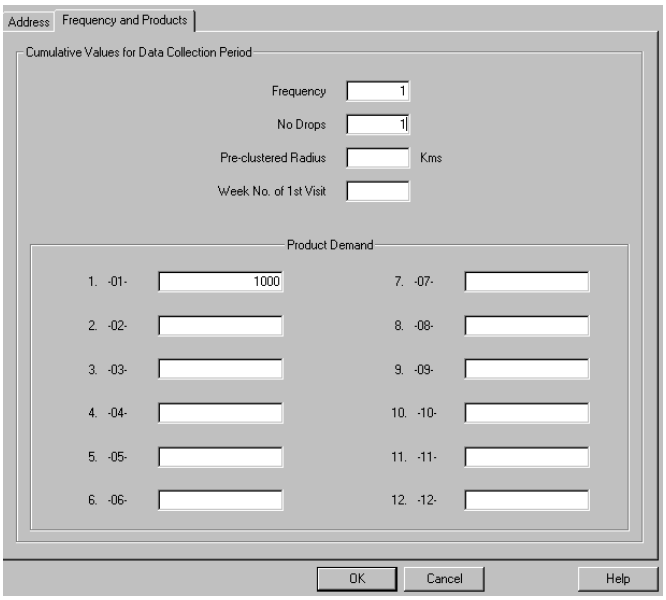
Depot

The Depot page can be used to move a kluster to another depot. Using the drop-down menu select a new depot using the LHB and then click on OK to close the notebook and allocate the kluster to the new depot.

The Explicit field is used to prevent re-allocation of this call using the Warefrom menu option unless specifically requested when the function is started. In effect the kluster will always be served by this depot**.**

Frequency & Products

Frequency for Strategic Studies



This field provides the kluster with the required number of visits in the Data Collection Period (DCP). The value will be factored by VANGUARD and WAREFROM runs in the ratio of the run length in days to the DCP. For example if the DCP = 28 days and the specified run length is 7 days, all frequencies will be factored to 25% of the original values (4 would become 1 etc.). If after factoring the frequency equals zero, then it will be set to 1. This factoring is confined to the running of the program and will not affect the value specified on the kluster screen permanently. For studies where the DCP is 28 days and length of run = 7 days, frequencies of either 1, 2, 3, or 4 will all be factored to a temporary value of 1. This will have the effect of planning all klusters in that week irrespective of their overall picture within the 4 week period.

The frequency value is also used by the planning programs to calculate the quantities to be planned on each visit. A total product demand of 20 units with a delivery frequency of 4 will produce a total of 5 units to be delivered on each of the 4 visits in the DCP.

Product Demand

Product demand is used by the strategic planning programs in to calculate the amount to be delivered to that point. The figure must be input as a total and not as a quantity per visit. Positive values denote quantities to be delivered. Negative values represent collections. Deliveries and collections may be planned simultaneously by DiPS.

The kluster frequency value is used by the planning programs to calculate the quantities to be planned on each visit. A total product demand of 20 units with a delivery frequency of 4 will produce a total of 5 units to be delivered on each of the 4 visits in the DCP. A maximum of 12 different product types can be used at any one time, but it is advisable to keep the study as simple as possible and use a single product where practical.

The quantity of each product determines the Vehicle Units to be delivered at each visit. Using the Product to Vehicle Unit conversion factors set on the Unit Data screen, the totals are calculated for each product with a valid (non-zero) factor.

If kluster product 1	=	200	100
& product to vehicle unit factor	=	1.000	0.010
& kluster frequency	=	10	1
then , vehicle unit per visit	=	20	10

No. Drops

This field specifies the visits required for clustered data; since the kluster represents an area of demand rather that an individual customer or delivery point. As an example, a kluster may be created to account for the Birmingham area in a 7 day plan. The number of visits (frequency) may be once a day (= 7), but the total number of drops would be 21 if the vehicle completed on average 3 per visit. The No. drops value is used within the planning programs to allow for extra time / distance to more accurately account for the additional activity.

Pre-clustered Radius

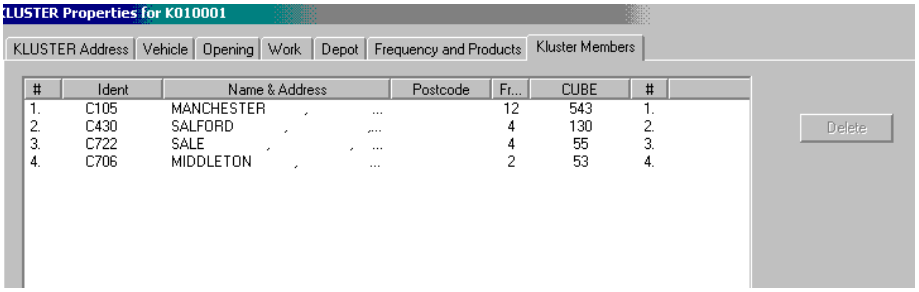
The radius in kilometers is used by the DiPS to allow for additional distance / time considerations for call points within the kluster. It is calculated from the grid references of member calls.

Week Number of 1st Drop

This file is used in conjunction with a study length (Data Collection Period) of 4 weeks (or 28 days), to force the VANGUARD program to route the first visit to that kluster in a particular week of the plan. In such a way a kluster with frequency = 2 and Week Number of first drop = 3 would receive its 2 deliveries in weeks 3 and 4 of the plan.

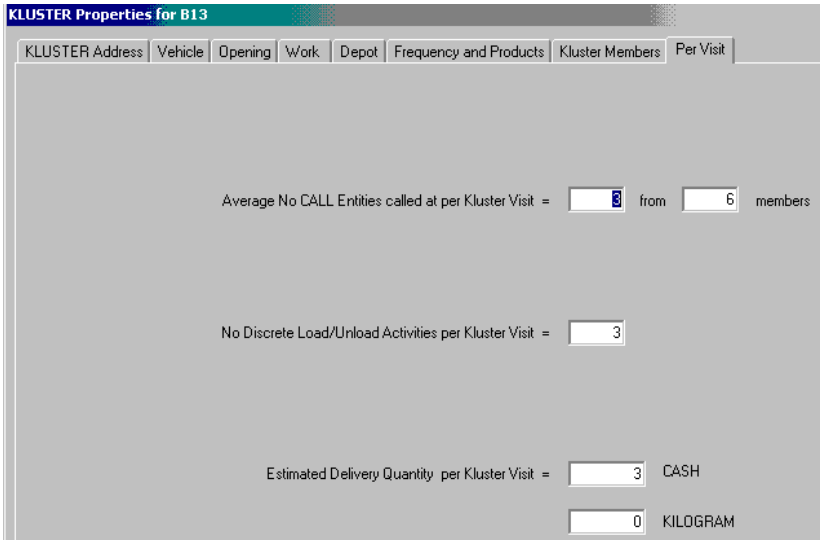
Kluster Members

The Members page can be used to display and also delete the calls belonging to this kluster. The calls will be shown in a list containing Ident, Name & Address, Frequency and Unit1. To remove a call from the kluster, click on the appropriate # field next to the call and then click on the Delete button. Click on OK to save the changes.



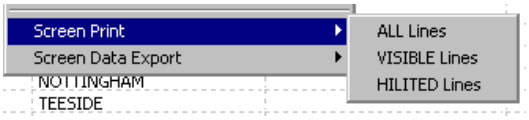
Per Visit

The Per Visit page can be used to display delivery or collection information used for routing purposes. Estimated values for Vehicle Units per visit are given along with the number of activities per visit and the average number of call entities per visit. This information is calculated from the frequency / product data from member calls.



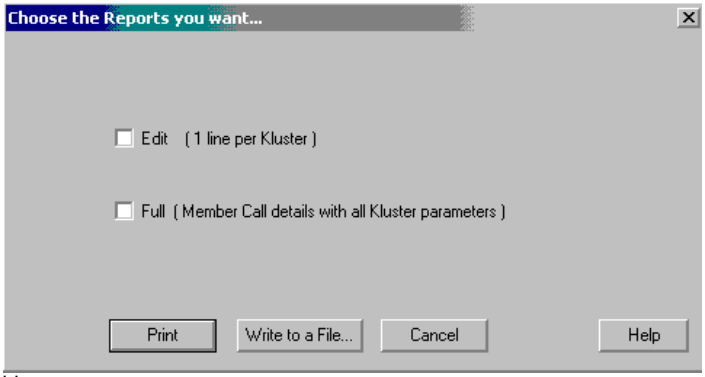
Printing Klusters

Printing Screens



From Text Panels in all modes there are a number of print options for printing the screen as displayed (i.e. with all the columns currently selected in the Style options). These include printing a page or printing the complete list of data file and are selected using the Screen Print menu choices available after clicking the mouse RHB. ALL Lines:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text; VISIBLE Lines :- Select this option to print just the page currently visible on the display; HILITED Lines :- to select a range of data click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the mouse LHB. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed.

Printing Klusters Reports



Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports.

To select a report type (both Edit and Full can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

To print information for a single specific kluster click with the RHB in any panel and select the Print menu option to display the Print Reports dialog window. This will allow the selection of certain output and pass it either to a printer or to create a file with the reports

Edit – will print 1 line per kluster with summary information (Acc. No., Name & Address, Postcode, Grid Ref., Unit 1, Unit 2, Freq, Drops, Opening Hours, Day Restrictions, MaxVeh, and Crew.)

Full – will print a detailed report for each kluster showing all member call data and a summary of the kluster as outlined below.

Kluster K000001

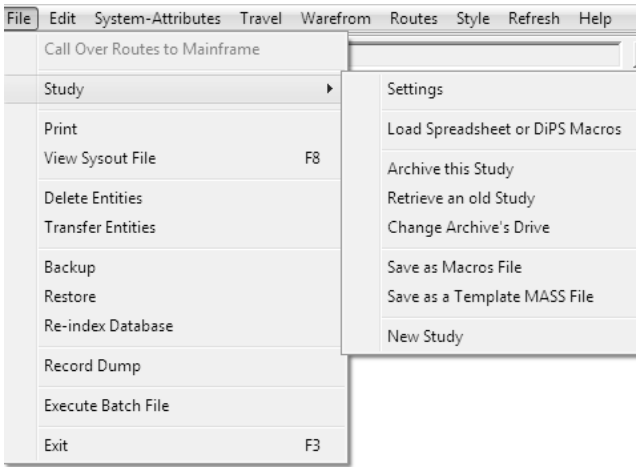
Acc. No.	Name & Address	Postcode	Grid Ref.	Unit 1	Unit 2	Freq	Drops	Opening Hours	Day Res	MaxV	Cr
10185	BRANCH WYBOSTON LAKES THURROCK	RM16 1ZQ	5644 1825	17	0	3	3	0800 to 1700		40FT	1
164450	SHOP HIGH ST STANFORD LE HOPE	SS17 0ER	5686 1810	58	0	1	1	0800 to 1700		RIGD	1
00034	ROYAL OAK HIGH ROAD SOUTH OCKENDON	RM15 6SD	5602 1826	49	0	1	1	0800 to 1700		RIGD	1
12601	LANGDONS HILL LOW ROAD BULPHAN	RM14 3TY	5612 1859	30	0	1	1	0800 to 1700		RIGD	1
1241	MARTIN SMITH ESSEX	SS16 6HF	5672 1872	23	0	1	1	0800 to 1700		RIGD	1
12851	SANDMARTIN	RM16 6PP	5602 1792	23	0	1	1	0800 to 1700		RIGD	1
12311	BALDWINS 23 HIGH STREET ESSEX	RM17 6NB	5621 1776	11	0	1	1	0800 to 1700		RIGD	1
00034	SMITH CO ST ROOKS UPMINSTER	RM14 3LT	5612 1859	2	0	1	1	0800 to 1700		RIGD	1
K000001	THURROCK	RM16 1ZQ (TQ6482)	5644 1825	213	0	3	10	0800 to 1700		RIGD	1

Total No. Members = 8 Expected U1/Visit = 71 PALLETS
Total No. Visits/Period = 3 Expected U2/Visit = 0
Expected No. CALLs/Visit = 3 Work Factor = 1
Expected No. Drops/Visit = 3 Matrix Row = 0
Radius = 5 kms
Expected Work Time/Visit = 114 mins (includes 0 extra time & 13 travel). Distance/Visit = 5.5 miles
Depot = LONDON

	PALL
Total in Period =	213

Menu Commands

File menu commands



The File menu offers the following commands:

Study

Settings
Load Data from Spreadsheet or macros File
Archive this Study
Retrieve an old Study
New Study
Save as Macros File

Only one study may be worked upon at any one time within DiPS, this being the set of files currently on the \DIPS directory. All of these study files may be copied to from and to other parts of the fixed disk using the File , Study menu option.

By selecting the Study, Archive this Study option these files are copied to another directory. Retrieving files from the archive location works in the same way, employing the Study , Retrieve an Old Study menu option and clicking with the LHB on the required Project field. For more information see the section on Working with different Studies using Archive and Retrieve. Using the Save as Macros File option , the DiPS Macro language is used to for longer term storage of study information in a compressed format. These files are normally saved with a .MAC extension.

Data can be loaded into a study from macro format or from spreadsheets, using the File option. For more information see the section on Loading Data from Spreadsheet or macro files.

New studies can also be setup in a number of different ways. For more information on this option see the section on Creating a New Study. For more information on Study Settings see the section in System Attributes.

Backup

Click with the LHB on this option to create a backup of the current file containing all the routes. This file will then be added to the available list of files for the *Restore* function.

Restore

Click with the LHB on this option to display a User Selection dialog box to choose the backup file to be restored as the working copy. The dialog box will appear to prompt you to select the required file by clicking the LHB on the project name. To help choose the correct file the dialog box will display the Project Name, User, Date of Backup, Time, and Size of file. Once a selection has been made, click on the **Restore Selected File** button to activate the choice. Alternatively select **Cancel** to quit.

For more information see the section on Backup and Restore Files

Print

Click with the LHB on this option to display the Print Reports dialog window. This will allow the user to select the required output and pass it either to a printer or to create a file with the reports. To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed..

For more information on the type of output available see the section on Print Reports for Modified Routesor Reports and Printing Output in Warefrom or Whatinsq Mode.

View a Sysout File

To create an output file for any mode of operation, Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports. To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field. Once the file has been created it is possible to view it with the File, View a Sysout File option. For more information see the section on Viewing and Printing Output Files. The F8 key can also be used.

Re-index Database

The Re-index Database facility is used to solve any problems with the integrity of the MASS file database. It may be run after seeking advice from DiPS staff following problems running the software. Automated re-indexing will occur as necessary during use of the program. The Re-index function will copy all data to a temporary location, reset the Indexing system, and re-load all the data that was able to be saved. Take care to check that all data has been recovered after a

Rescue, since only data that was recognized by the program can be re-indexed. Some data if badly damaged may not be salvaged - look out for the appropriate warning messages.

Record Dump

The record dump option is used to display the constituent parts of individual records in a database.

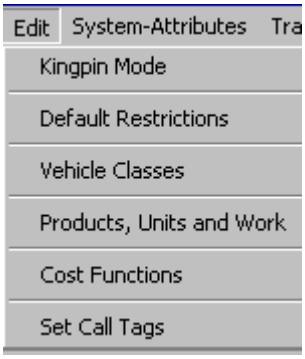
Delete Entities

The delete option is used to remove data from a study. For more information see the section on Deleting Entities.

Transfer Entities

The transfer option is used to move data within a study, such as calls between depots. For more information see the section on Transferring Entities.

Edit Menu



The Edit menu is used to access data screens for study information and offers the following commands.

Kingpin mode

This mode is used to manipulate data, such as depots, calls, orders, vehicles and so forth.
To switch to this mode click Edit menu, followed by Kingpin mode. The screen will change accordingly to display 3 panels - Graphics, Summary panel and Data on the left. The initial display will be for depots. To change the view to see any other items, click on the appropriate tab on the Summary Panel. The details will be displayed in a spreadsheet view with one cell for each field of the item - for example a call may have an Ident field, Name, and Postcode in separate cells. The Ident will always be displayed as the first column in Kingpin mode.

Default Restrictions

Default Restrictions properties specifies the times and access criteria for all calls created unless input information (from a spreadsheet for example) dictates otherwise. The minimum fields normally required are opening times for band 1 and a maximum vehicle size field; although other data such as day restrictions may be used. For more information see the section on Default Restrictions.

Vehicle Classes

A basic vehicle class is a fundamental requirement of any planning process to be undertaken using DiPS. Every call and depot is given a maximum vehicle class by default (usually the biggest) to govern vehicle access restrictions. This vehicle may be defined as either a trailer or a rigid classification. The route planning packages can use rigid vehicle types, fixed tractor-trailer fleets; or tractor unit and trailer combinations if necessary. For more information see the section on Vehicle Classes.

Products, Units and Work

Product groups are used in order to provide a delivery demand factor for calls. Up to 12 different products may be specified to allow discrimination between types of delivered or collected goods in terms of their loading/unloading rates, space required in a vehicle load, and ability to mix together on the same trip Units and Work parameters are used in conjunction with Products and Vehicle Class names to govern the amounts to be delivered or collected and the rates at which vehicles are loaded and unloaded. For more information see the section on Products, Units and Work.

Stats Manipulation

Stats Manipulation may be used to re-define product and frequency values for groups of calls based upon a percentage factor. For more information see the section on Stats Manipulation.

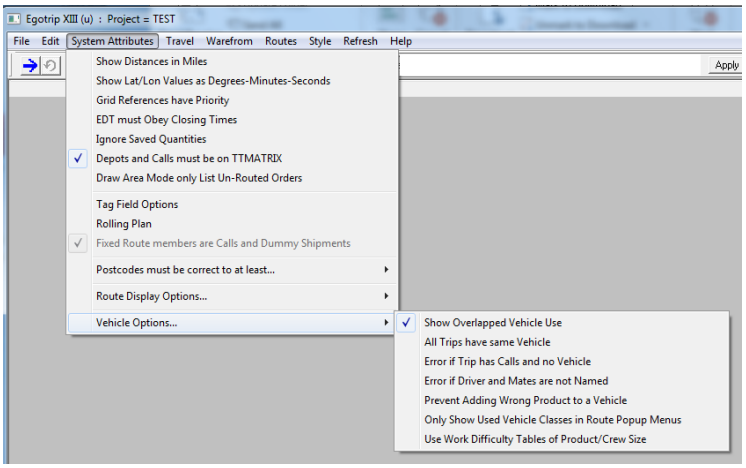
Cost Functions

Cost functions can be used to add costing values to tables in studies. For more information see the section on Cost Functions.

Set Call Tags

Information may be copied from the owning depot into the tag field of call calls currently belonging to the depot using the Edit , Set Call Tags menu option. Either the depot tag field itself or the first 4 characters of the depot may be copied. This may prove useful in further manipulation of calls, for example where the trace ability of calls moved from depot to depot is important.

System-Attributes Menu



The System-Attributes menu can be used to change DiPS system parameters and currently offers the following commands:

Show Distance in Kilometers (Miles)
By default when a new study is established speed and distance information will appear in miles (field is not set). By checking the tick-box provided, the system will modify all parameters and output values to appear in kilometers.

Show Lat/Lon Values as Degrees-Minutes-Seconds or Decimal Numbers
This option will toggle the display and entry of Latitude and Longitude values in the system between decimal and traditional formats.

Grid References have Priority
By default when postcode information is input into an address field it will automatically update the grid reference fields, which DiPS uses to locate the call or depot. This is the case when the option is not selected, that is marked with a tick. By clicking on the option the LHB and setting the value, the system will no longer assumes that the postcode is more accurate, and the reference will not be changed unless it is first deleted. In this way any amendments to the address postcode field will not have an adverse affect on detailed OS grid data where it has been collected.

EDT must obey Closing Times
Setting this parameter will ensure that the vehicle must depart the Call before the Closing Time indicated, having completed all required work. By default vehicles are only required to arrive within the time window

Ignore saved Quantities
By default when a study is loaded existing call quantities are stored and applied to any routes. By checking the tick-box provided, the system will ignore previous values and re-calculate all call quantities again from scratch. This is useful if new data is to be applied to existing route patterns.

Depots & Calls must be on TTMatrix.
If set this parameter will ensure that all calls are on a proper valid Matrix before they can be added to a route or called over. This does not affect the ability to place these call on a Carrier List or Customer Collect List. To avoid this error, ensure that all calls have valid grid reference and click the Travel, Run Matrix option.

Draw Area Mode only List Un-routed Orders is available which can be toggled ON/OFF depending individual requirements. If ticked using Draw Area Mode or Click Call Mode when routing with Orders will only put the un-routed Orders into the blue box. When initially running the program it is always set OFF so you see all the Orders – routed or not.

Tag Field Options
In the Style, Graphics Options dialog there is Symbol set parameter (Freq+Tag+OT) that will allow calls to be displayed by a colour attributed to a call tag field. The size of the symbol is defined by the Frequency per week, the shape by the Opening Time, and the colour by the Tag Field table. This table is found in the System Attribute menu and may be modified using New, Edit and Delete buttons to display a simple dialog enabling the 40 character field to be input and a colour chosen. The table can also be re-sequenced using Move Up and Move Down options. The sequence of tags has no effect on the graphics display.

Orders may now be added to routes automatically if either the Call Tag Field or the Order Tag field matches a defined number of characters within the Trip Tag of a route. To activate this functionality use the System Attributes Tag Field option and tick the parameter on the dialog – set the number of consecutive characters that you wish to match as required. Then as required, simply click the Routes menu option – Auto Add Orders to Routes to move any un-routed drops in the Deferred List into the trip that matches. The logic involved will look for the set number of characters from the call tag within the text in route tag field, i.e. the Call or Order Tag may just be part of the trip tag. Orders will be added onto the end of any existing drops currently on the trip. Different trip tag text may be used for each trip of a route to enable orders to be added to a first or second trip for example.

Calls with same Tag Field as a Node Call of Trip will be made 1st in lollipop.
As the first or “node” call is placed on a trip any call with a non-blank tag field that matches the node call’s will be made top priority in the lollipop and considered first when calls are added to the trip.

Pair two Call Idents if they have the same Tag Field and their Product Groups are paired.
This parameter only works with multiple format studies or strategic studies where the split by product flag has been set on the Product Units and Work properties dialog. If the Product Groups are also set to be paired on the Product Units and Work properties dialog, two calls with a non-blank tag field will both be routed together on the same trip or neither will be added.

Rolling Plan
The Rolling Plan logic allows Orders to be input for a range of dates (up to 7days) and scheduled in one run; or existing routes added to on an on-going basis to provide a solution for a business where the workload cannot be split into individual days and vehicles operate continually. Set this parameter on to allow routing over a series of days.

Set Fixed Route Members to…
The type of data for fixed routes is set using the System Attributes menu option Set Fixed Route Members to… and selecting either Calls, Postcode Areas or Dummy Shipments. The routes set-up function is accessible from the Routes Menu option an must use either postcodes, calls or dummy shipments: it is not permissible to mix types.

Postcodes must be correct to at least…. Area Level, Sector Level or Walk Level
This parameter will set the appropriate level of accuracy for postcodes used within DiPS. Any postcodes used must be accurate to at least the level chosen or they will not be used to locate the call/order/depot. Area level is the lowest available (checking DY12 is valid). Sector Level (checks DY12 1 is valid) and Walk Level (only allows postcodes if DY12 1A is valid) may also be used to only allow more accurate data entry.

Route Display Options

Using the Called Over options, it is possible to hide routes that have already being called over (and finished for the day perhaps) by setting **Don't Show Called Over Routes**. Hence in the example below, route1 Oxford/ Birmingham/ Wolverhampton) is hidden as it has previously been called over (see CO Status = PCO or CO). Alternatively it may also be set using the Route Summary menu option – To be Called Over.
Ticking **Only Show Called Over Routes** will reverse the logic enabling users to display only routes that have been set or finished for example. Only route 1 would be displayed in that instance.
Negative routes such as Carrier Routes, Customer Collections or the Post List can be shown in isolation or excluded from the map display using **Don't Show / Only Show Carrier Routes**. The normal squares showing for such routes are then hidden or displayed without routes so it's possible to see the areas covered.
To avoid confusion between sessions, this parameter setting is only valid for the current session of the program and will need to be re-set every time the program is re-run.

Vehicle Options

Show Overlapped Vehicle Use
This parameter can be changed to disable the warning messages regarding overlapping vehicles within the plan that appear whenever manipulation of a route causes the same vehicle to be in use by two different routes at the same point in time. By default it is set to allow messages to be displayed. Once changed it remains in force until disabled or the program is closed.

All Trips of a Route have same Vehicle
Within the planning process two distinct methods of vehicle allocation can be employed -
1) Drivers may use any vehicle ident on any trip of a route constructed.
2) Multiple trips of the same route and driver must use the same vehicle.
This facility is controlled by the Same Vehicle parameter, which by default is set to NO, thus allowing any combination of vehicles on the same route. To restrict the route to the same vehicle on ALL trips, click on the option the LHB, setting the value so that is marked with a tick. In either case any trailer may still be used by a vehicle.

Error if Trip has Calls & No Vehicle
This parameter if set will show a "Veh" error on the first depot line of any trip that has calls on it but has no vehicle assigned. The Callover of Routes will also be prevented if applicable.

Error if Driver & mates are Not Named
This parameter if set will show an error on the first depot line of any trip that has calls on it but has no driver assigned or mate assigned if the vehicle crew size requires it. The Callover of Routes may also be prevented if applicable.

Prevent Adding Wrong Product to a Vehicle
An item can be set to stop drops with certain products being added onto a route where the vehicle class has previously been set to prevent such products being carried. On the Edit, Vehicle Classes menu, select the required Vehicle Class and then using the "This Vehicle can carry Products" section un-tick the relevant products to prevent them being added.

Only Show Used Vehicle Classes in Popup Menu
If set, this parameter will suppress the display of any unused vehicle class in the pop menu whilst modifying routes. Only those classes that have existing vehicles assigned to that depot will be shown. To add vehicles for another class use the depot properties dialog

Use Work Difficulty Tables of Product/Crew Size
Tick the "Use Work Difficulty Tables" on the System Attributes menu and confirm when applicable. Work tables will then be created for any Work Classes that currently exist on the file using the same values for all entries. Up to 999 tables may be established using values to 3 decimal places for each of the 12 products and the three different crew sizes. Click New to create an extra entry or Edit to modify existing values. As an example of the new feature, for "1 Man" if the value of 3.000 is entered for all products but an individual factor of 5.000 has been set for product 2, the work time for orders at this call are calculated at 5x the rate for product 2 plus 3x the rate for all other products if the vehicle allocated to the route for that call has a Crew Size = 1. These calculations are done for both for rates set on the Products, Units & Work dialog and on individual vehicle types.

Klusters Menu

The Klusters function provides a means of dealing with larger numbers of strategic call entities by grouping them together in an area. The area is termed a kluster and is made up of the individual call entities that keep their identity, though the Route Planning, Warefrom and Matrix functions can all deal simply with the kluster entity itself rather than each individual call. In such a way using klusters can decrease the time taken to run DiPS programs and the output produced as it reduces the detail involved in analysis. Once klusters are established on a study they will appear in all modes rather than the individual call data. They will be created with a sequence number between 000001 and 999999 which can be set by the Kluster Seq Number Origin field available on every Depot Properties screen. Allocation of calls to klusters is based on the grid references of the calls and will not take into account factors such as rivers, tunnels and so forth. The kluster will be constructed around a main call (usually high frequency or high visit time) and this will appear as the primary call within the kluster. It is this call that is used to give the cluster a location grid reference. Certain parameters are employed to ensure that the kluster sizes do not exceed acceptable levels (in terms of radius, delivery quantity and so on). In most instances the default values set for these options will provide adequate results for a Klusters run. Once Klusters have been created any manual amendments may be done with no regard to the constraining factors of the parameter settings. For example more calls may be added to a Kluster than the maximum member field allows.

Klusters Mode

Klusters mode provides the means for data to be displayed and calls to be transferred between klusters by manual interaction using the mouse pointer. The option will load all klusters and calls selected and construct a scaled graphical image of the area to be examined (displayed on the graphics panel). Calls may then be moved either using text panels to drag calls or graphically by drawing boundaries or clicking calls. Calls not currently allocated to a kluster are added to the deferred list which appears as the bottom left hand panel. To add a call to a kluster, click with the LHB on the necessary call or calls in the deferred list to select them and drag the highlighted calls into the kluster list using the RHB.

Klustering Parameters

These should be changed if necessary before attempting to Run Klusters. There are a number of values available to restrict the kluster building mechanism. In most instances the default values set for these options will provide adequate results for a Klusters run. Program Parameters for automatic klustering include Maximum Radius, Maximum Work Time, Maximum Quantities per Visit, Maximum Number of Members, and Maximum Number of Deliveries per Visit. Dynamic Attributes apply to all existing data such that when they are changed the klusters are automatically re-calculated to reflect the new parameters. These include Minimum Delivery Frequency, Generate Two Lines of Address, Inter-Drop Distance Factor, Inter-Drop Travel Speed, and Fixed Time between Drops in a Kluster. For more information see the manual or on-line help.

Run Klusters

Select Run Klusters using the menu option and the routine will then operate to allocate calls to new klusters. On the graphics screen calls will begin by appearing as green dots and will be coloured to match the kluster they belong to as it is built (the same colour calls are in the same kluster). Please note that any existing routes for depots included in the klustering process will be removed as they will be invalidated by the grouping of calls, since calls in a single kluster cannot be on more than one route. The Klusters Run Options dialog includes - Use Nominated Days rather than Day Restrictions and Mixing Criteria (a number of parameters employed to stop calls mixing within a kluster including Vehicle size restrictions, crew size, call tag fields and depot).

Create Klusters by Postcode

Select Klusters by Postcode using the menu option and the klustering routine will allocate all calls having the same postcode area to a kluster. As an example calls with postcodes DY12 1AB, DY12 2RR, DY12 3DD will all be added to a kluster called Dy12. All normal klustering parameters are ignored.

Travel menu

Parameters

The Travel option is used to produce a TTMATRIX which may be envisaged as a table of times and distances between all the points in your study. All the DiPS planning programs which rely on this detailed information access the latest TTMATRIX and thus it must be completed before any planning runs are attempted. Road Speeds and other relevant values can be defined using the Travel , Parameters menu option which reveals the Matrix Properties notebook.

Run Matrix

The Travel , Run Matrix menu option is used to produce a TTMATRIX which may be envisaged as a table of times and distances between all the points in the current study. The four files created are stored on the \DIPS directory and are termed:-

Once the menu option is activated and the Go button clicked, two visible processes are set in motion.

WINDOW - This process constructs a border around those locations defined in the run with valid grid references (zero values are ignored). Within this area each unique grid reference is attached to between one and four road junctions (depending upon local geography) on a crowfly basis. A border is placed around the outermost points to ensure that key roads are not excluded. The object is to provide all the data and work files required to calculate travel time and distances in the next process. The road junctions are displayed graphically in red as they are being evaluated and added to the process.

BUILDING THE MATRIX - This process uses the window data defined in the most recent run to calculate a matrix of travel times and distances between all the defined grid references.
A simple Progress Indicator will be displayed whilst rows are being calculated (fills from left to right) before the process completes with message box - MATRIX BUILD IS COMPLETE.

For more information see section on Calculating Times and Distances with Matrix.

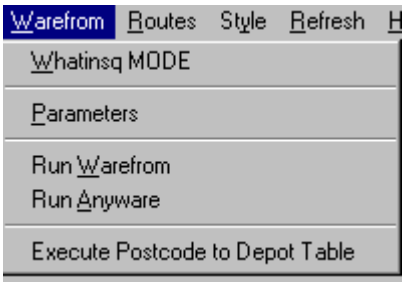
Using Highway Mode

Highway mode may be used to easily identify and then locate calls or depots without a grid reference value. It will display an Output Summary Panel, graphics image, and text panels for calls and depots.

Run Itinary

One useful by-product of the DiPS UK Road Database and the System's ability to generate travel times and distances is the corresponding capability to generate route detail between given points. Run Itinary is the option provided for this feature. Simply select the menu option and set the calls or postcodes (if a postcoded matrix run has been performed) when the Setup dialog appears.

Warefrom Menu



Warefrom mode will evaluate either: an ASIS analysis of the Distribution and Supply System as it currently operates or conduct optimisation analysis to reallocate demand (and supply) points to their cheapest depot or supply chain option. Account may be taken of multiple supply chains with their constituent individual links, product throughputs, costs and resource limitations at each depot. The Anyware option can be used to locate the ideal depot location for "greenfield" depot studies. WHATINSQ mode provides the means for calls to be transferred from depot to depot and depot boundaries changed by manual interaction using the mouse pointer.

Parameters

For more information see the section on Parameters for the Warefrom module

Run Warefrom

For more information see the section on Running Warefrom

Run Anyware

For more information see the section on Finding ideal Depot locations with Anyware.

Whatinsq Mode

The option will load all depots and calls selected and construct a scaled graphical image of the area to be examined (displayed on the graphics panel). Calls may then be moved either using text panels to drag calls or graphically by drawing boundaries or clicking calls. For more information see the section on Allocating Calls to Depots with Whatinsq.

Reports for Warefrom and Whatinsq modes

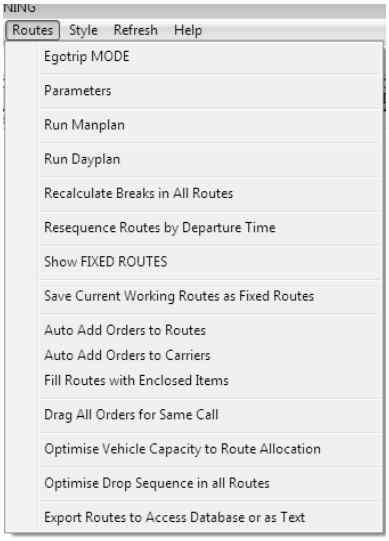
For more information see the section on Reports and Printing Output in Warefrom or Whatinsq Mode.

Execute Postcode to Depot Table

This can be used to transfer calls between depots, re-allocating all calls according to the settings in the Postcode to Depot Table on the Routes Parameters page. For more information see the Routes Parameters section.

Transfer Calls Not Orders
The Warefrom menu has a parameter **Transfer Calls not Orders** that may be set to define how orders are moved between depots in Whatinsq mode. Tick and set this option if **all orders grouped for a call are required to be moved together**. In this instance moving one order will automatically move the group and hence all others for that call or same place. The default case will allow orders to be moved individually (i.e. orders can be delivered from different depots or routes to the same call location.

Routes Menu



The Routes option is provided to produce 'optimised' vehicle or operative schedules. Routing control parameters are available to influence the type of routes produced by the program, normally set in Routing Parameters.

To route vehicles or operatives on a daily scheduling operation, first set the required depots and dates set in the toolbar, select the Routes menu followed by Run Dayplan or Manplan.

For more information on these programs see individual sections on

Daily Vehicle Scheduling with Dayplan
Scheduling Operatives with Manplan

To route vehicles in a strategic study, first set the required depots and days in the toolbar, then select the Routes menu followed by Vanguard

For more information on these programs see individual sections on

Vehicle Scheduling with Vanguard

Egotrip Mode

In Egotrip mode adjustments to routes produced by a scheduling run can be performed or manual routes built from scratch to use as a starting position for further work. For more information see the individual section on Getting Startedin Egotrip mode.

Show Fixed Routes , Save Current Working Routes as Fixed Routes , Load Fixed Routes as Working Routes

An additional facility of the DiPS system is the ability to set up 'skeleton routes' as a basis for automatic scheduling in Dayplan or Egotrip amendment. Routes can be set up with specific calls, vehicles, length in days, and so forth, and Dayplan will automatically add additional orders to the route if possible. Fixed Routes can be established for each day of the week, with the routes being set up and amended when necessary using EGOTRIP mode. To establish and maintain Fixed routes, use the Routes, Show Fixed Routes option to display the Fixed routes rather than the working routes that are displayed by default. The route numbers employed involve a 4 digit number with the first number being the appropriate week day number (e.g. 3 for Wednesday in a Monday-Friday operation), and the next 3 digits representing the route number that will correspond to this fixed route when used in daily operations. All other route functionality is as for working routes. All Fixed Route details are saved automatically in the same way as Working Routes. To revert back to Working Routes , use the Routes, Show Working Routes option. Current working routes may be saved as fixed routes using the applicable option. To use Fixed Routes use the Load Fixed…… option. For more information see the section on Working with Fixed Routes for Daily Planning in Routes Function.

Auto Add Orders to Carriers or Routes

This option will add automatically add Orders to calls or Postcodes on fixed routes transferred using the File, Transfer menu to be working routes for a day; or for carrier add all deferred orders to their best (cheapest) carrier list. Orders may now be added to routes automatically if either the Call Tag Field or the Order Tag field matches a defined number of characters within the Trip Tag of a route. To activate this functionality use the System Attributes Tag Field option and tick the parameter on the dialog – set the number of consecutive characters that you wish to match as required. Then as required, simply click the Routes menu option – Auto Add Orders to Routes to move any un-routed drops in the Deferred List into the trip that matches. The logic involved will look for the set number of characters from the call tag within the text in route tag field, i.e. the Call or Order Tag may just be part of the trip tag. Orders will be added onto the end of any existing drops currently on the trip. Different trip tag text may be used for each trip of a route to enable orders to be added to a first or second trip for example.

Re-sequence Routes by Departure Time

The menu option Re-sequence Routes by Departure Time will re-order the route numbers within each depot such that the route departing earliest in the day (i.e. with the earliest EAT) will have the lowest number.

Fill Routes with Enclosed Items

This facility is initiated using the Routes menu option and is available for both daily and strategic routing. It provides a method of adding calls or orders to existing routes by taking the envelope of the route and adding all items within that to the route. The method employed in constructing the envelope will take lines between existing points on the route and then join the first and last links together. Everything lying within this area is then added to the route *irrespective of constraints* such as

time windows or vehicle capacity, and the route is then optimised on travel time. Calls falling outside of any envelope are not added to a route. In the case of items lying within the envelope of a number of routes, they are added to the first route identified by the process. Hence the process will work best with a limited number of pre-defined routes in any area. Once the procedure is complete, the model will re-load and display the finished results.

Export Routes to Database

An output file can be produced from this option to load into common database programs such as Lotus Approach or Microsoft Access; or into a spreadsheet package. The file has headers on each column and contains all the necessary route information to produce individual tailored report styles from 3-D graphical utilisation reports to custom route print showing the material required employing your own designed presentation (perhaps with company logos for example). The report will contain all the route information for depots and days currently applied in the program. The file can be imported in two ways using the “file save as type” in the dialog box – as a normal text file and now directly into an Access database.

For a text file each of the 116 fields printed is separated by a comma and can be loaded using any File,Open routines (for Excel use *delimited* and *comma* at the Import Wizard prompts). Text fields such as Addresses or Special Instructions are enclosed in quotation marks, e.g. “TEXT”, whilst numeric field appear between commas. A full specification is attached below. Due to the width of the file you may find it difficult to view or edit with a normal text editor program By default the output file is called DIPS2AXS.TXT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

For an Access database the route information is exported as tables in two parts – for route summary information and for individual route details. The required information for each may be set using the Style menu options for Access headings. Select the required section and add the fields required in the dialog box. Only those fields in use in the headers option will be added to the database. When a database is re-used all the existing tables will be automatically replaced with new information. Select a new name each time if the existing information is required for future reference.

Optimise Vehicle to Route Allocation

This feature will re-allocate all routes to a new vehicle based on the available fleet, optimizing use of the vehicles so that the smallest vehicle is allocated to each route. All routes are processed, including those without a current vehicle. To activate this feature, simply click the menu item from the Routes menu.

Drag All Orders for Same Call

This option, if set, will enable users to select and move all orders for the same call ident irrespective of any “deliver to” addresses on the calls or any Order Grouping logic set. If one order is selected and dragged onto or off a route, all orders are automatically highlighted and moved at the same time.

Optimise Vehicle Capacity to Route Allocation

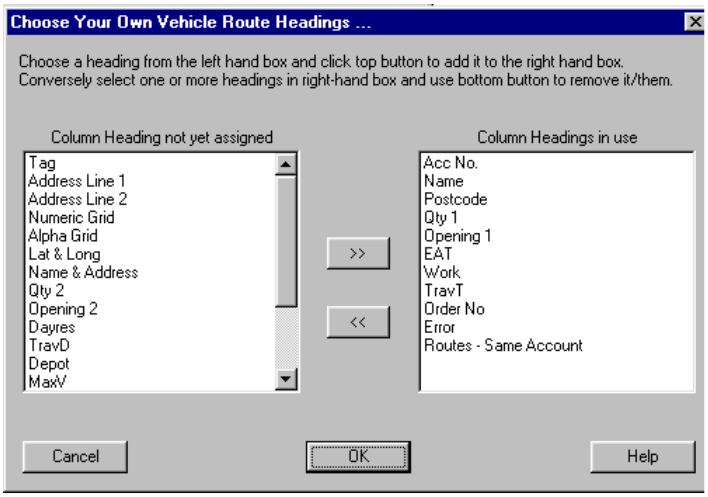
This option will automatically optimise the sequence of all drops in all routes currently applied. If possible the routine will obey any time restrictions, but if time errors are already displayed for the route will operate and ignore EAT Errors to calculate the absolute minimum cost without reference to opening time restrictions.

Style menu commands

The Style options are used to control size and position details for windows, panels and route columns for each user. When a user logs onto Egotrip at the initial dialog window the previous settings are restored. It can also be used to remove the Toolbar and the Status Bar from display. The Style menu itself offers the following commands to control headings in the text areas:

Route Headings

This option is used to set the required columns are positions for route panels. Select the option by clicking the LHB on the mouse to display the dialog window.



The available column headings are displayed in the left hand selection box and include options such as account no., order no., address, times, quantities, access restrictions, work times, and error codes. The headings currently in use are displayed in the right hand box in the order the will appear from left to right in a route panel (i.e. the top heading will appear on the far left). To select a heading and add it to the bottom of the current list, click on the heading with the LHB and then click the **>>** button. Multiple selections may be made by clicking on a number of headings. These will be added to the list in the order selected. The sequence of headings in the right hand box may also be changed by clicking on a heading with the LHB to select it and then using the RHB to drag it to a new position in the list.

Conversely to remove an item select a heading in the box with the LHB and then click the **<<** button to put it back into the available list.

Once you are happy with the headings and their positions in the right hand box click the OK button to save the settings. The Cancel button will restore the previous order.

Deferred Headings

This option is used to set the required columns are positions for the Deferred List panel. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

Carrier Headings

This option is used to set the required columns are positions for Carrier List panels. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

List Headings

This option is used to set the required columns and positions for List dialog boxes used in Draw Area or Click Call Mode graphics mode. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature

Matrix / Warefrom / Klusters Headings

This option is used to set the required columns and positions for the text panels in Warefrom, Whatinsq, Klusters or Highway mode. Select the option by clicking the LHB on the mouse to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

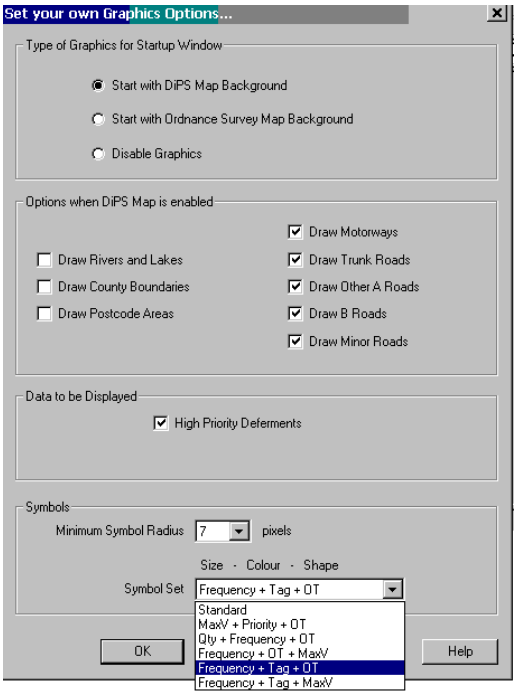
Kingpin Headings

Kingpin mode is available from the Edit menu to manipulate data, such as depots, calls, orders, vehicles and so forth. The details will be displayed in a spreadsheet view with one cell for each field of the item - for example a call may have an Ident field, Name, and Postcode in separate cells. The Ident will always be displayed as the first column in Kingpin mode.
This option is used to set the required columns and positions . Select the relevant data type by clicking the LHB on the cascade menu option to display the dialog window. The dialog window functions in exactly the same way as the route headings feature.

Remove Status Bar / Show Status Bar

The Status Bar appears as the bottom line of the program and is used to display information for the user such as the number of deferred calls or the depots currently in use. This option may be used to remove or display the Status Bar. Select the option by clicking the LHB on the mouse to activate it. The StatusBar is then removed or displayed.

Set Graphics Options



This option is used to display the Graphics Panel options. Select the option by clicking the LHB on the mouse to activate it. Options may be changed at any time and apply to the Style in use.

Select the appropriate options by clicking the LHB in the tick box. If the Disable Graphics option is set the Graphics panel is then removed and the summary view panel is extended to fill the available space.

Click OK to accept settings or Cancel to cancel the dialog.

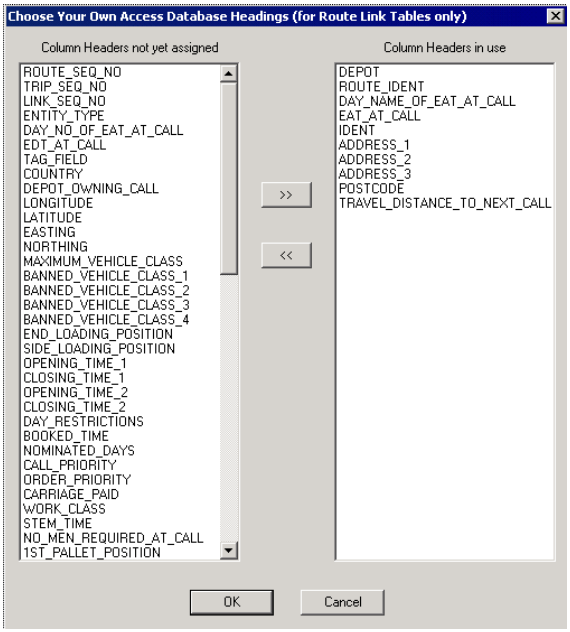
Changing the Automatic Backup Interval

Use the menu option **Style, Set Backup Interval** to set the required time between automatic backups for this style. Each logon style has its own unique value.

Turn Beep Off/On

This option will control the beep that sounds as an indicator for errors for example as the program operates.

Access Headings



An output file can be produced from the Routes option to load into Microsoft Access. For an Access database the route information is exported as tables in two parts – for route summary information and for individual route details. The required information for each may be set using the Style menu options for Access headings. Select the required section and add the fields required in the dialog box. Only those fields in use in the headers option will be added to the database. When a database is re-used all the existing tables will be automatically replaced with new information. Select a new name each time if the existing information is required for future reference.

Customising Route Summary Headings

Use the Style, Route Summary Headings menu option to set the required layout and columns and positions for the route summary area. Select the option by clicking the LHB on the mouse to display the dialog window.

The selection options can be used to define the layout style preferred : either using the traditional fixed format report, or one of the spreadsheet style layouts. The pure spreadsheet layout will display information in rows of cells , whereas the formatted layout will leave some cells blank (forming a “half-way house” to the traditional layout).

If a spreadsheet style is preferred use column definition panels to select the required information and its sequence in the summary panel.

When using the Spreadsheet styles, the Summary information can also be printed or exported from the menu accessed by clicking the right hand mouse button. Pure spreadsheet formats can also be sorted by clicking with the left hand mouse button on a header.

Refresh Menu

The Refresh menu enables general re-setting and the re-drawing of the main graphics window and currently offers the following commands:

Graphics

Click with the LHB on this menu option to re-draw the routes and calls on the current graphics window.

Reset Popup Window Sizes and Positions

Click with the LHB on this option to reset all window positions to their default arrangement. This is particularly useful if windows have been lost or corrupted for any reason. This will apply to the current Style (User Logon) only.

Water Mode

Click with the LHB on this menu option to re-draw the current water mode on the graphics window.

Check Grid Refs from Postcodes

Click with the LHB on this option to check the grid references for all calls or orders based upon their **curren**t postcode. The program will switch to Kingpin Mode and, if any exist, then display a blue List Box for all calls that have a grid reference outside the radius given by the Postcode Area (e.g. postcode DY12 1AB will be displayed if its location is outside the radius of DY12). These calls can then be displayed and amended in the usual way.

Reset Grid Refs from Postcodes

Click with the LHB on this option to re-calculate the grid references for all calls or orders based upon their **curren**t postcode. This can prove important where new call data is incorrectly overlayed onto existing data. Please note that since postcode information is imposed, any calls with corrected grid references may have to be re-done (for example where the address gazetteer has been in preference to a postcode field).

Correct Wrong Date

This option is only applicable to daily scheduling operations. It will enable all order and route dates to be changed to a new date. A dialog will appear showing a range of dates. Select the new date to be used and click OK. All the data will be amended accordingly.

Undo Callover Flags

This option may be used to remove the route flags (e.g. route sequence numbers) set by a callover if the situation arises where routes may have been called-over in error. It will not modify any of the other route attributes or change what is on a route.

Help menu commands

The Help menu offers the following commands, which provide you assistance with this application:

Help Contents	Offers you a contents page to topics on which you can get help.
About	Displays the version number of this application.
Search	Displays the help search facility with selected keywords for Egotrip.

Viewing and Printing Output Files

To create an output file for any mode of operation, Click with the LHB on the File menu option and select Print to display the Print Reports dialog window. This will allow the selection of required output and pass it either to a printer or to create a file with the reports. To select a report type (more than one can be chosen), simply click the LHB of the mouse in the relevant check-box by the side of each type and then click the LHB on either *Print* (to send the reports directly to the printer) or *Write to a File* to choose a file and folder location from the dialog displayed. By default the output file is called M3REPORT and is placed in the \DIPS folder - to change the name over-type the file name field; to change the folder use the Save In field.

Once the file has been created it is possible to view it with the File, View a Sysout File option. The F8 key can also be used. All relevant files on the \DIPS directory are displayed in a selection panel; to nominate a file the following options are available :

Type in the filename (including the relevant .OUT extension). Point to the appropriate filename in the file box using the mouse and double click using the left hand button. Point to the appropriate filename in the file box using the mouse and click once using the left hand button to select the file and click on the OK dialog button. This display will clear after a selection is made and a percentage counter in the title bar area shows the progress made in loading the file. Only one file at a time may be displayed; however it is possible to select a new file for display to replace the current one. Click on the file option on the activity bar and this will display a menu; select open and this will cause the file dialog box to be re-displayed. Choose a file as before.

To change the font size for any program select the Font option on the activity bar followed by change. The Font window will then appear, with the sample area displaying example text for the current font. To change the font type select the down arrow for the Name field and select a new typeface from the list. (All system non-proportional fonts are available.) Use the scroll bars to move up and down the list if necessary. Select the Style, Size, and Emphasis if desired, and the click on the OK marker to save the changes or Cancel to quit without saving.

To jump to a particular section of the file select the **Index** Menu Option to reveal the Pages listbox (there is now no Pages sub-menu). A list of the particular titles specific to the output file will then appear (see program information for more detail on output available). To select a section, point at the required text and double click with the left hand mouse button. The display will then move to show the top of that section. Each section of the file is now also separated by a row of dots across the page.

It is possible to use the mouse pointer to move up and down the file using the scroll bars, which appear on the bottom and right edges of the window. To move up or down a section at time click in the area either above or below the position marker box. To move through the file whilst viewing the text point to the marker box and click and hold down the left hand button; then drag the box up or down and release at the required point.

In terms of the keyboard keys :

<Home> Moves window to Top Left Hand Corner of report.
<End> Moves window to Bottom Left Hand Corner of report.
<PgDn> Moves window down 20 lines.
<PgUp> Moves window up 20 lines.
<Down> Moves window down 1 line.
<Up> Moves window up 1 line.
<Right> Moves window right 1 column (beeps past column 256).
<Left> Moves window left 1 column (beeps if at column 1 already)
<Ctrl> and <Right> Moves window right 40 columns
<Ctrl> and <Right> moves window left 40 columns
<Tab> Moves to next 'NEW PAGE' of the report. This facility allows you to skip quickly through the title lines of each report.
<Esc> To finish with this file and be asked for another filename.

Printing

There are a number of print options within the VF program – including printing a page or printing the complete file. To display the menu choices click on the Print option on the activity bar.

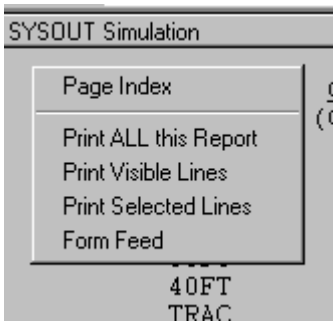
Page :- Select this option to print just the page currently visible on the display. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed. The page print remains in the print queue until it is passed to the printer either by another page print, by use of the GO option in the print menu, or by closing the program. Any normal page break information will be ignored.

File :- Select this option to print all the information contained in the present output file. Page breaks will be governed by the different defined in the text.

To select a range of text lines for printing click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the Left Hand Button of the mouse. To de-select an area click again to un-mark the line or lines. Then a click on the Print Menu Option followed by a single click on the Print Highlighted Option will send the relevant information to the printer. A single tone beep will sound when the process is complete.

To select sections for a print routine, select the **Index** Menu Option to reveal the Pages listbox, then press and hold down the CTRL key and click with the Left Hand Button of the mouse on each required section in turn. When all have been chosen a single click on the **Print Selected** Pushbutton will send the relevant information to the printer. A single tone beep will sound when the process is complete. Click on **Cancel** to exit this routine.

There are also choices obtained by clicking the RHB on the text screen.



Print ALL this report:- Select this option to print all the information contained in the present text panel. Page breaks will be governed by the different sections defined in the text.

Print Visible Lines :- Select this option to print just the page currently visible on the display. Any information hidden on either the left or right hand sides due to the position of the window borders will be printed. The page print remains in the print queue until it is passed to the printer either by another page print, by use of the GO option in the print menu, or by closing the program. Any normal page break information will be ignored.

Print Selected Lines :- to select a range of text lines for printing click and hold down the Left Hand Button of the mouse and drag the selection to the required point in the file. To select multiple sections press and hold down the CTRL key and click and drag with the Left Hand Button of the mouse. To de-select an area click again to un-mark the line or lines. Then a RHB click followed by a single LHB click on the Print Selected Lines Option will send the relevant information to the printer. A single tone beep will sound when the process is complete.

To select sections for a print routine, select the **Index** Menu Option to reveal the Pages listbox, then press and hold down the CTRL key and click with the Left Hand Button of the mouse on each required section in turn. When all have been chosen a single click on the **Print Selected** Pushbutton will send the relevant information to the printer. A single tone beep will sound when the process is complete. Click on **Cancel** to exit this routine.

Basic Windows Program Functions

Exit command (File menu)

Use this command to end your Egotrip session. You can also use the Close command on the application Control menu.

Shortcuts

Mouse: Double-click the application's Control menu button.

Keys: ALT+F4

Index command (Help menu)

Use this command to display the opening screen of Help. From the opening screen, you can jump to step-by-step instructions for using Egotrip and various types of reference information. Once you open Help, you can click the Contents button whenever you want to return to the opening screen.

About command (Help menu)

Use this command to display the copyright notice and version number of your copy of Egotrip.

Context Help command

Use the Context Help command to obtain help on some portion of Egotrip. When you choose the Toolbar's Context Help button, the mouse pointer will change to an arrow and question mark. Then click somewhere in the Egotrip window, such as another Toolbar button. The Help topic will be shown for the item you clicked. Keys: SHIFT+F1

Title Bar

The title bar is located along the top of a window. It contains the name of the application and document.
To move the window, drag the title bar. Note: You can also move dialog boxes by dragging their title bars.

Scroll bars

Displayed at the right and bottom edges of the document window. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the document. You can use the mouse to scroll to other parts of the document.

Size command (System menu)

Use this command to display a four-headed arrow so you can size the active window with the arrow keys.

After the pointer changes to the four-headed arrow:

1. Press one of the DIRECTION keys (left, right, up, or down arrow key) to move the pointer to the border you want to move.
2. Press a DIRECTION key to move the border.
3. Press ENTER when the window is the size you want.

Windows and the five main Panels all have clearly defined borders. To "pull" the window in any direction move the mouse pointer over a border until it changes shape to signify move mode. Then press and hold down the LHB of the mouse, drag the border to the required position and release. The image contained within the window will be re-sized automatically to display a larger area. This process may be used for horizontal or vertical borders.

To scale the window up or down whilst maintaining the perspective (or image size) drag the relevant corner of the window in the same way to enlarge or make smaller any window.

The size, position and font attached to Windows, will automatically be allocated to the user style as defined by the logon User Id.

Note: This command is unavailable if you maximize the window.

Mouse: Drag the size bars at the corners or edges of the window.

Move command (Control menu)

Use this command to display a four-headed arrow so you can move the active window or dialog box with the arrow keys.

To move the window to another position on the desktop without re-sizing point to the title bar (where the program name appears), click and hold down either of the mouse buttons, move the window to its new location using the grey border image, and the release the button. Note: This command is unavailable if you maximize the window.

Keys: CTRL+F7

Minimize command (application Control menu)

Use this command to reduce the Egotrip window to an icon.

Mouse: Click the minimize icon on the title bar.
Keys: ALT+F9

Maximize command (System menu)

Use this command to enlarge the active window to fill the available space.

Mouse: Click the maximize icon on the title bar; or double-click the title bar.
Keys: CTRL+F10 enlarges a document window.

Close command (Control menus)

Use this command to close the active window or dialog box. Double-clicking a Control-menu box is the same as choosing the Close command.

Keys: ALT+F4 closes the Egotrip window

Restore command for window sizes (Control menu)

Use this command to return the active window to its size and position before you chose the Maximize or Minimize command.

Switch to command (application Control menu)

Use this command to display a list of all open applications. Use this "Task List" to switch to or close an application on the list. Keys: CTRL+ESC

Dialog Box Options

When you choose the Switch To command, you will be presented with a dialog box with the following options:

Task List
Select the application you want to switch to or close.

Switch To
Makes the selected application active.

End Task
Closes the selected application.

Cancel
Closes the Task List box.

Cascade
Arranges open applications so they overlap and you can see each title bar. This option does not affect applications reduced to icons.

Tile
Arranges open applications into windows that do not overlap. This option does not affect applications reduced to icons.

Arrange Icons
Arranges the icons of all minimized applications across the bottom of the screen.

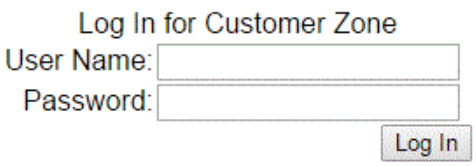
Installing & Updating Your System and Maps using Web Site Downloads

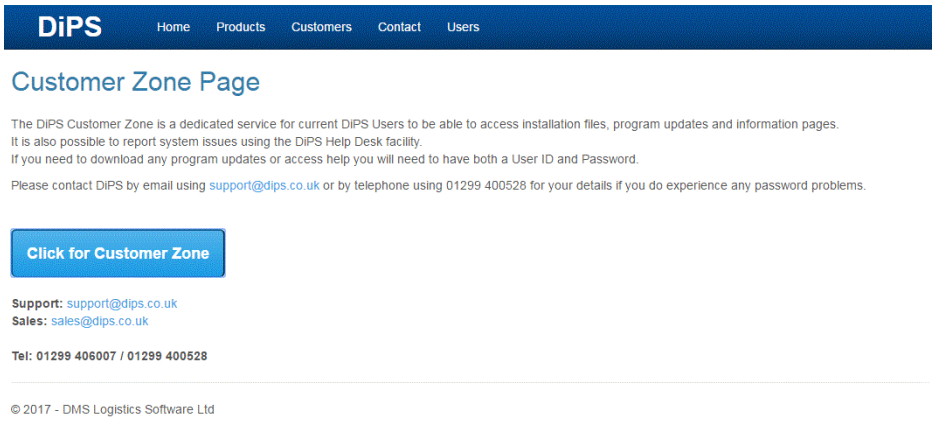
To support software installation, the DiPS website Customer Zone page now offers all the necessary links to download complete installations or patches for existing setups. Available are the very latest program releases, setup installation files, and patches for postcodes and Ordnance Survey maps.

If you don't already have access to our customer zone, we can provide users with a specific logon and password to get to the relevant web pages from the Login Page. To get this information, please contact us by email at support@dips.co.uk or rs@dips.co.uk. Alternatively please call 0333 577 0367. Once you have the necessary information, please follow the steps outlined below.

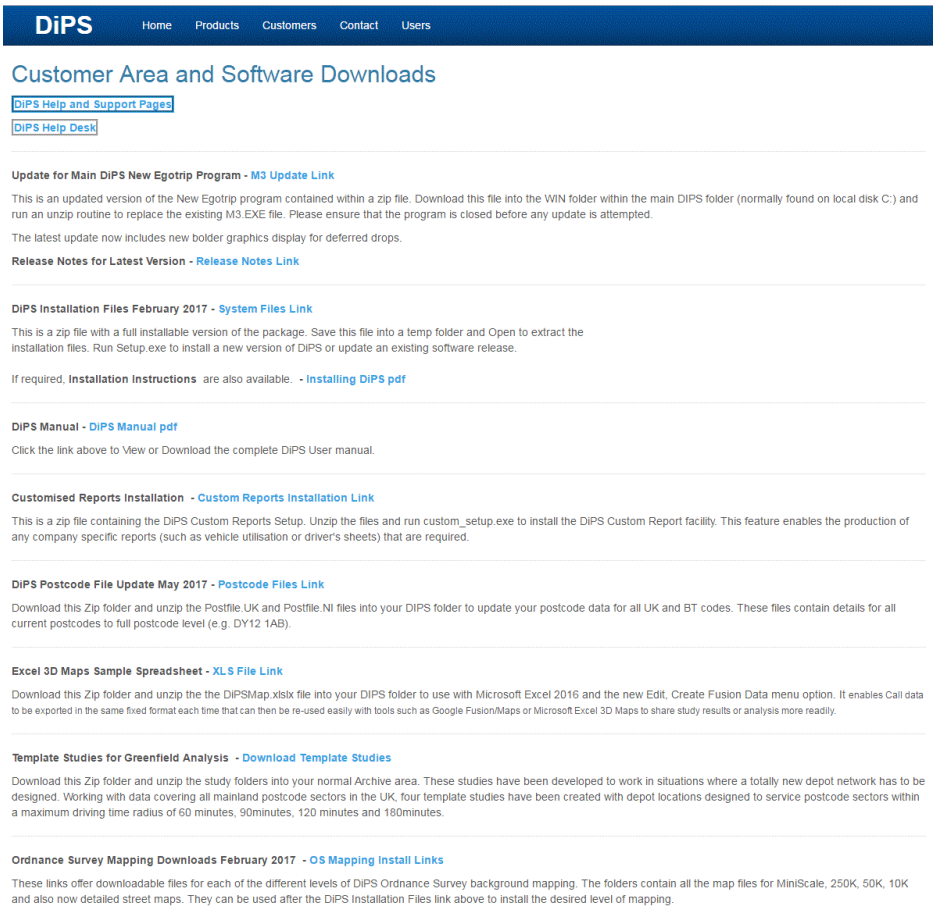
Go to www.dips.co.uk and choose the Users menu option.

At the Windows Security dialog you need to put in your Username and Password and click OK.
(please note both are case sensitive)





Click on the button for Customer Zone



For a New Installation or a Full Update of a New Release

Use the latest **DiPS Installation Files link……..** to access the system.zip file.

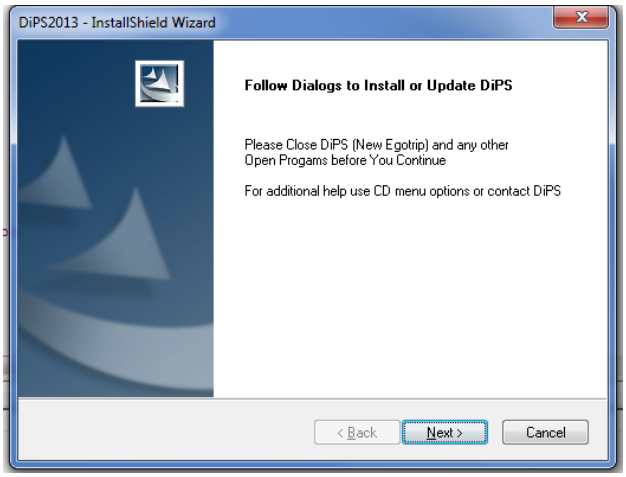
Open or Unzip this file into a folder to access the required installation files.

Run the **setup.exe** program to install the software

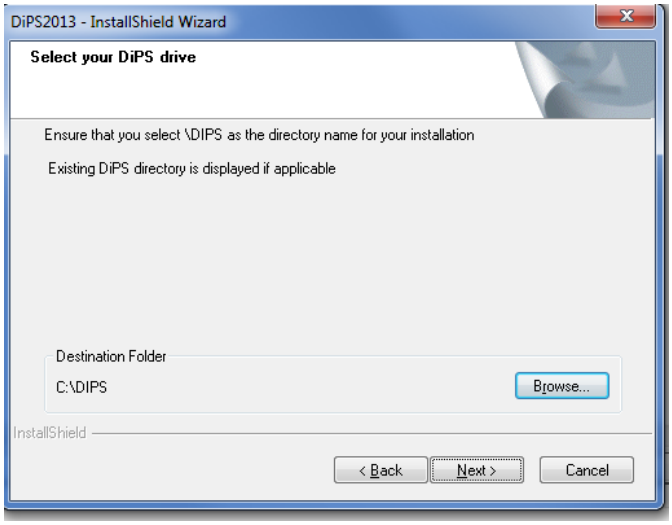
If this is a first time installation on a new PC choose the “Full System Install” option or use “Update an Existing System” as required.

Please follow the instructions provided below as appropriate.

Basic Software Installation on a New PC



Follow the installation wizard to complete each screen. Initially you will see a Welcome screen. Click on Next , Back or Cancel as required to move through the installation.



In the Select your DiPS Drive section, setup will automatically find an existing system or for a new installation you will need to select a directory for the DiPS folder (e.g. C:\DIPS).

Initially the Full System Installation option will need to be used to install a basic setup on a new PC.
Click Yes at the Confirmation message when it appears if running this option.

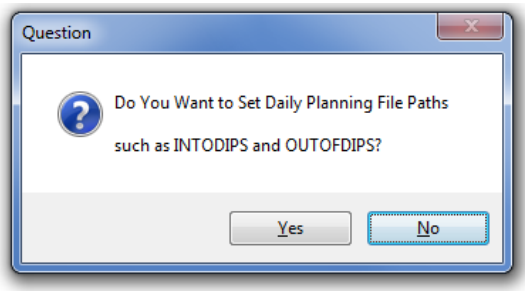
A full installation will add some standard Environment Variables. (For example for a system installed on the c: drive - arcdrive=c:, arcpath=\dips\archive, dips=c:, and rootpath=c:\).

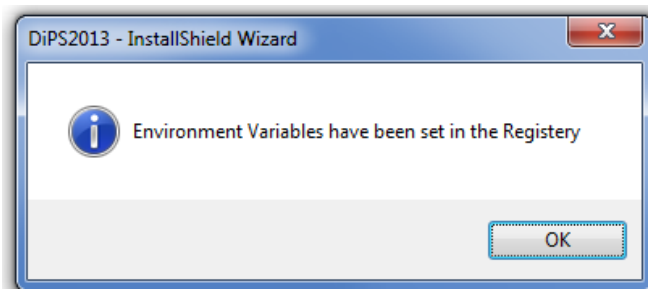
New shortcuts will be added to your Start Menu options in the DiPS folder and on the desktop as required. The DiPS New Egotrip icon will launch the main program.

Progress Indicators will then show as the files are being copied.

A dialog will then appear to set the network File Paths for the Order and Route interface files.

This is for daily planning only and not required for strategic users.
Click YES at this point to the Daily Paths if required and this will set just the basic Environment Variables. These can be modified as required after the DiPS installation.





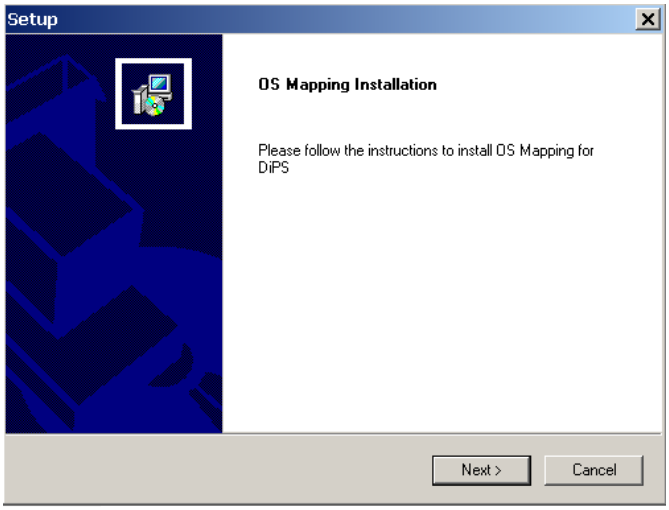
Finally a confirmation dialog will appear to show that the Registry has been modified as necessary.

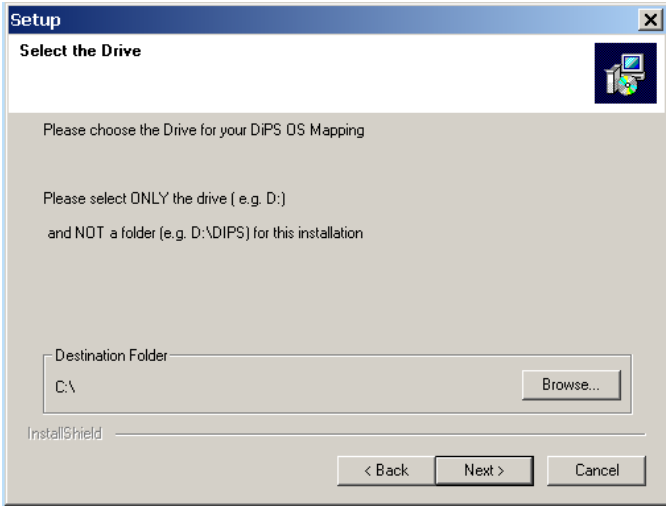
Installing Ordnance Survey Basic Mapping from a System Installation

The main DiPS setup program has now been amended to add the facility to load on the latest versions of the basic level OS Maps as these don't incur a great overhead in terms of space requirements. The two folders included are for OS Miniscale Raster and OS 250K Raster which display at the highest level (e.g. when looking at a map of the whole UK or a region rather than a detailed view of a town).

Once the main program files have been copied over, a dialog will appear asking – **Do You Want to Install Basic OS Maps?** If Yes, a separate install routine will run to copy across those folder as indicated below.

Follow the installation wizard to complete each screen. Initially you will see Welcome screens. Click on Next , Back or Cancel as required to move through the installation.



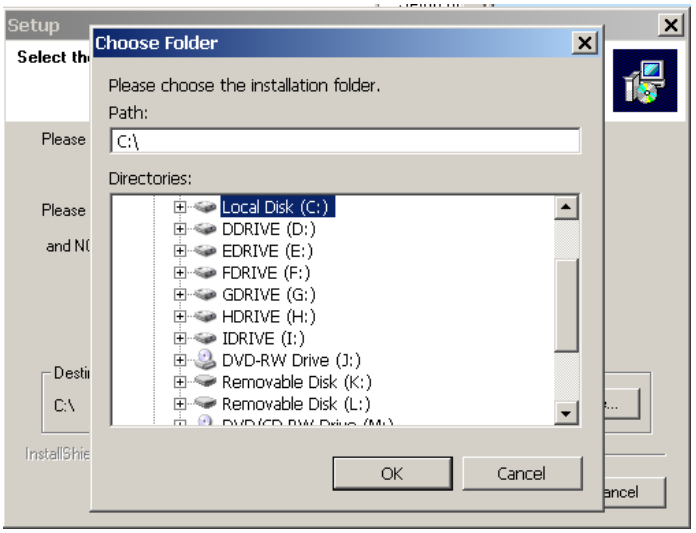


In the Select the Drive section, setup will initially display the C:\ as the destination.

To install the mapping onto C:\, simply click Next to start the copy process.

To choose an alternative drive, click on the Browse button to display other drives and select the required destination. Select only the drive and not a folder as the files are copied into folders as required. Any drive chosen will be checked for disk space prior to copying. Please note that the mapping does require GIGABYTES of free space!

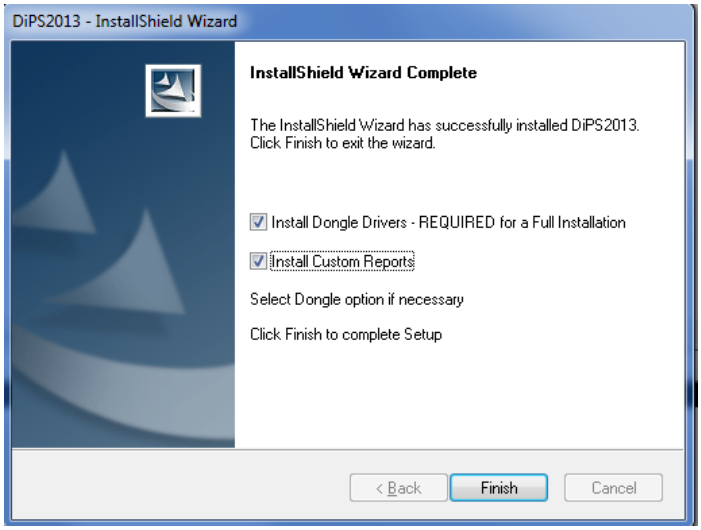
Click Next after this to start copying files.



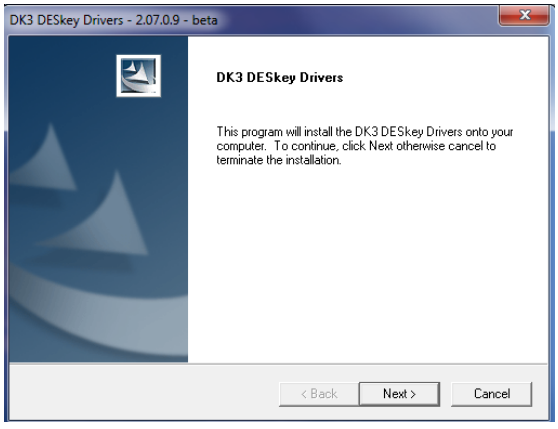
Once this process is done the main installation program should then continue to finish by offering a DK3 Dongle / Custom Reports setup (you can always check on the taskbar at the bottom of your screen).

After OS Maps folders and files have been copied, the final dialog will offer two options.
One to enable the installation of Dongle Drivers to add driver support for DiPS USB dongle and the second to use the extra reports and features contained within the Custom Reports setup.

Make sure that both of these are ticked if you are doing a new install.

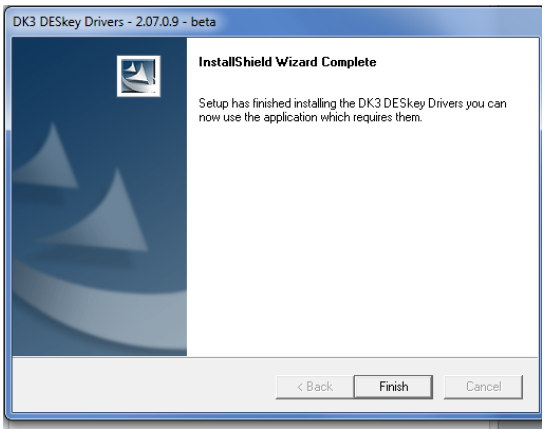


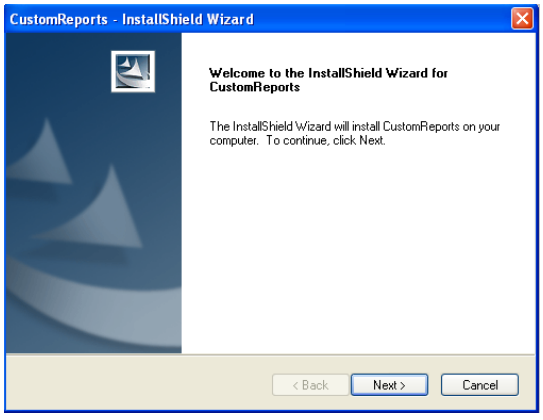
The dongle drivers will add Deskey K3 drivers, whilst the Custom Reports option will first install SAP Crystal reports re-distributable if required and then install the DiPS Custom Reports program. Choose default folder options and OK or Next to confirmation messages as they appear.

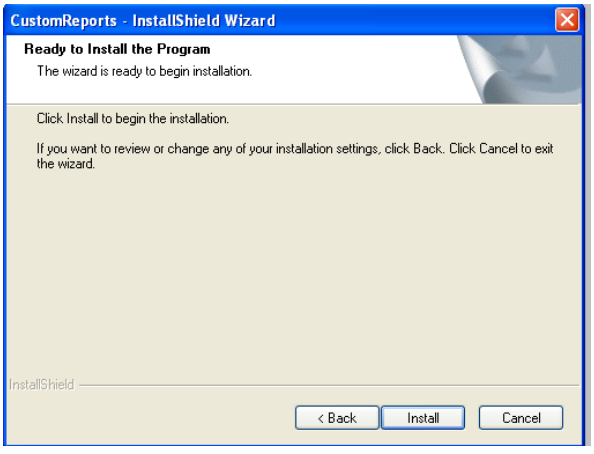


<u>Custom Reports</u>

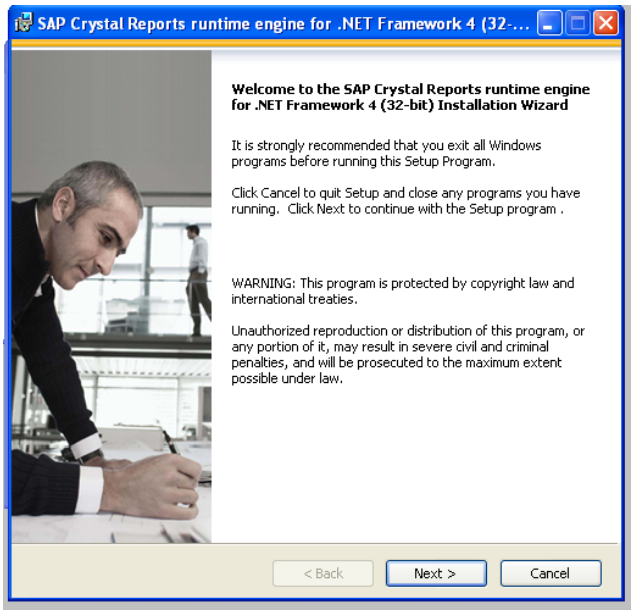
Click Next and then Install to start the process

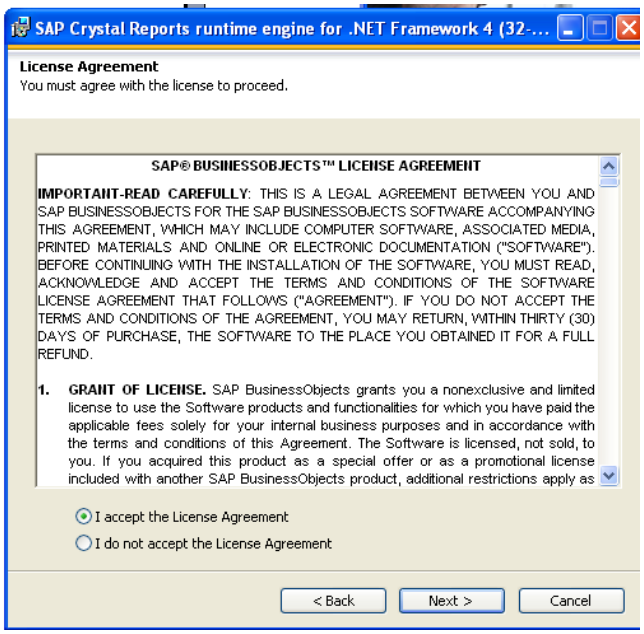


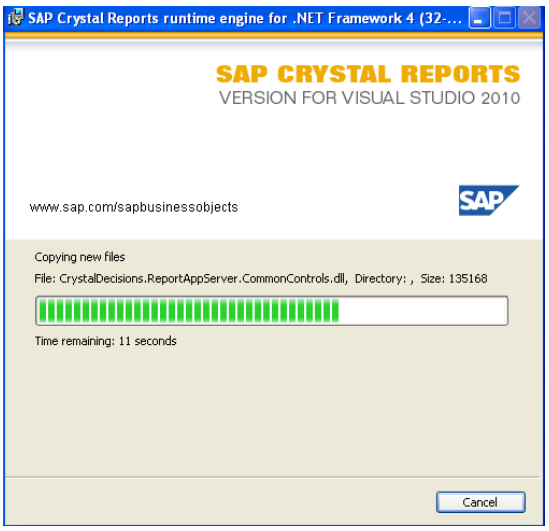




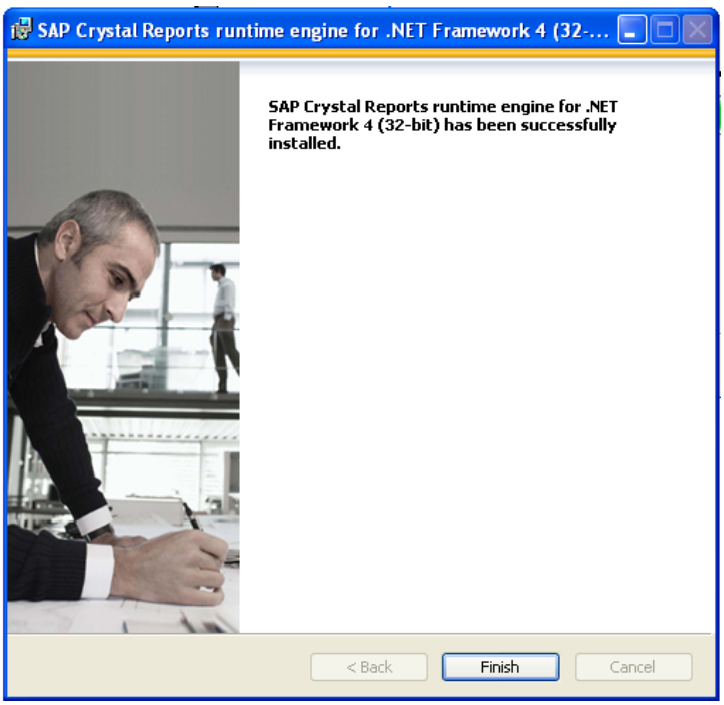
Click Next at SAP Crystal Reports and then Accept License Agreement



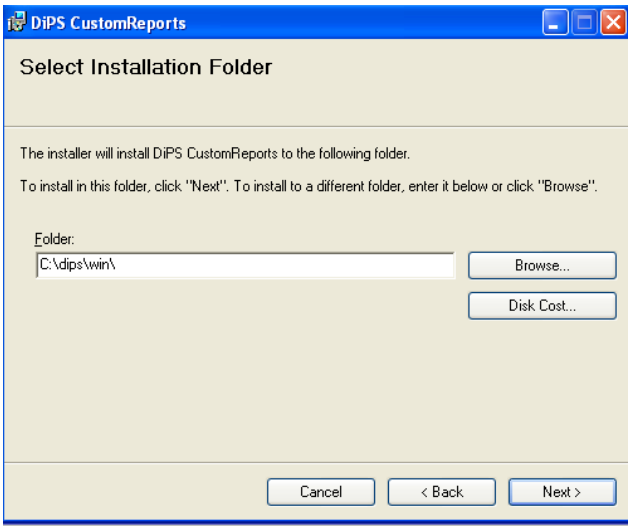


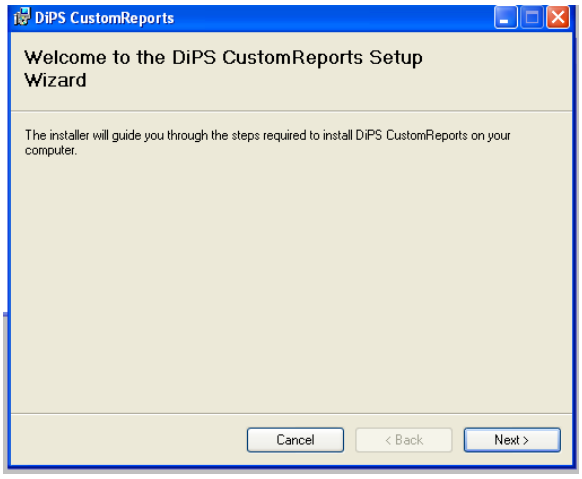


After progress indicators, click Finish



Accept defaults for DiPS CustomReports Installer and then choose Next followed by Finish to complete



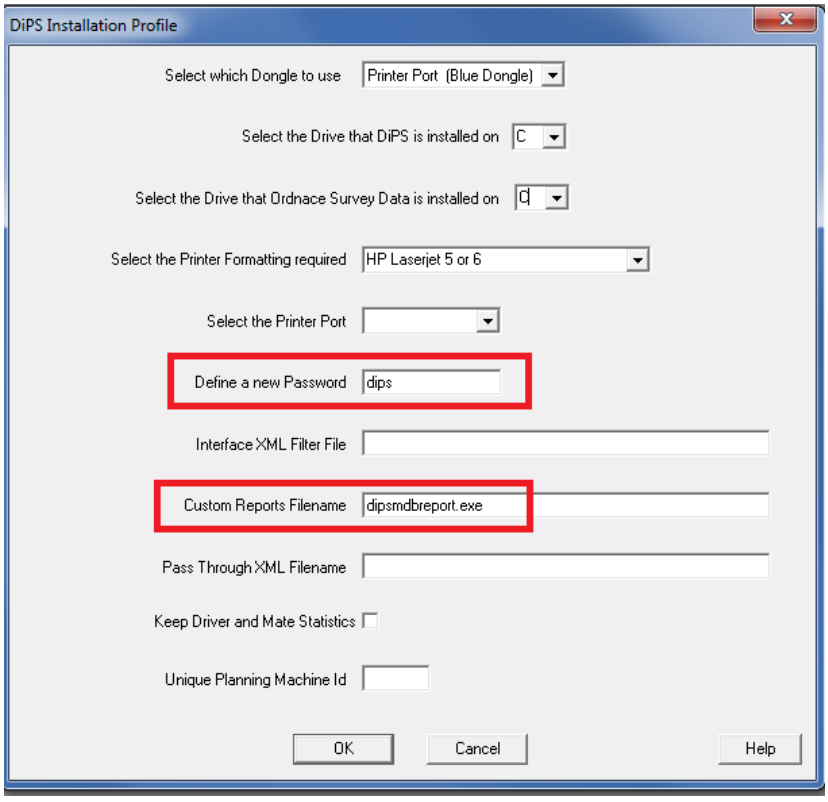


Running the DiPS Program for the first time

Connect the USB dongle to the appropriate port on the PC and wait for Windows to recognise the device. If necessary choose the option to accept pre-installed drivers.

When the DiPS New Egotrip program runs for the first time, the Profile dialog screen will appear.

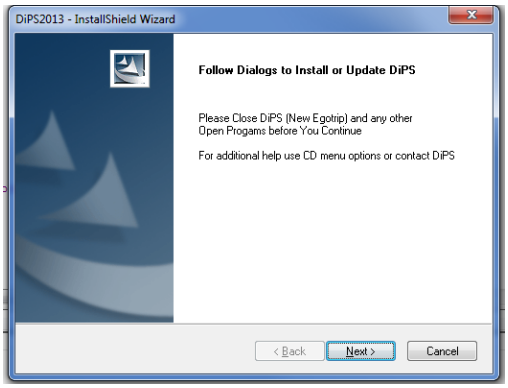
Modify the Password field with the required logon password and make sure that the filename ***dipsmdbreport.exe*** is in the Custom Reports Filename box. All other fields may be left as blank or defaults unless specifically advised by DiPS or as part of your normal installation procedure.



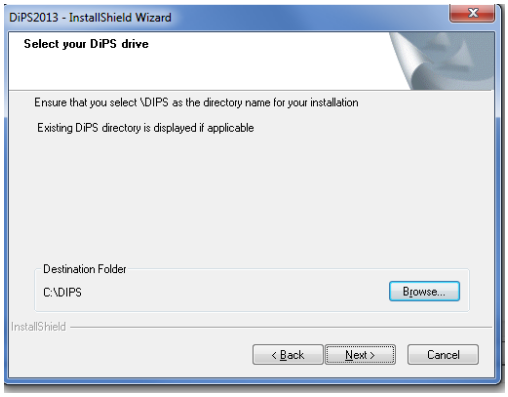
Update An Existing Software Installation

To install the latest version on an existing installation run the setup.exe file after download.

Follow the installation wizard to complete each screen. Initially you will see a Welcome screen. Click on Next , Back or Cancel as required to move through the installation.



In the Select your DiPS Drive section, setup will automatically find an existing system (e.g. C:\DIPS).



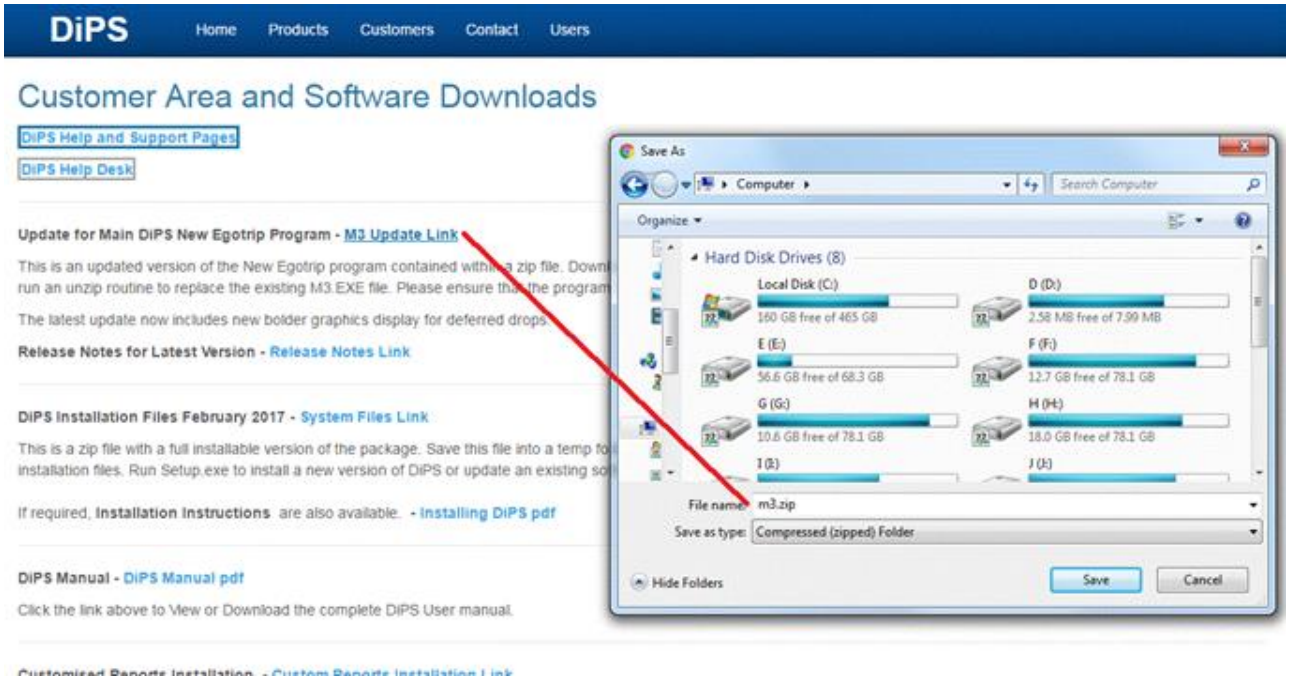
At the Setup Type dialog, choose Update An Existing System

Progress Indicators will then show as the files are being copied.

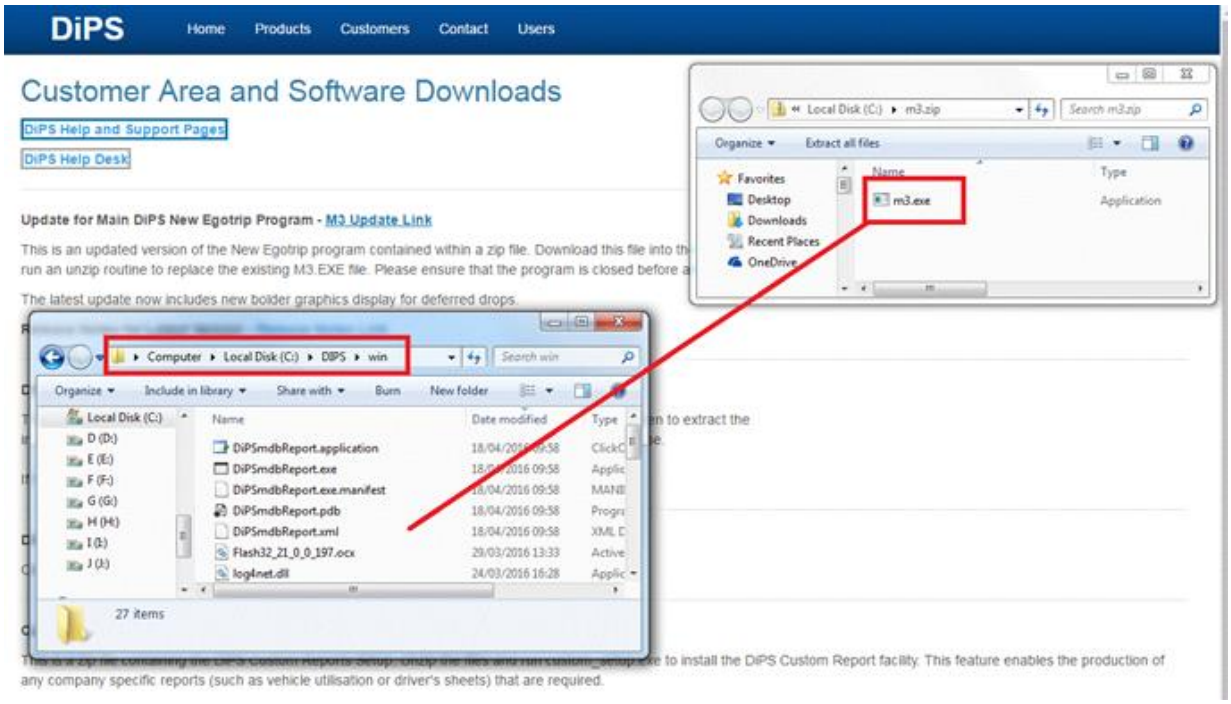
After files have been copied, the final dialog will offer two options. One to enable the installation of Dongle Drivers to add driver support for DiPS USB dongle and the second to use the extra reports and features contained within the Custom Reports setup. For existing systems there should be no need to install these, click Finish to complete.

To update to the latest program (if a new later program version is available after a full install)

At the main Customer Area and Software Downloads Page, click on “M3 Update Link” to download the New Egotrip zip file”



When the zip has downloaded or opened, select all the files, right click and from the menu choose “Copy”



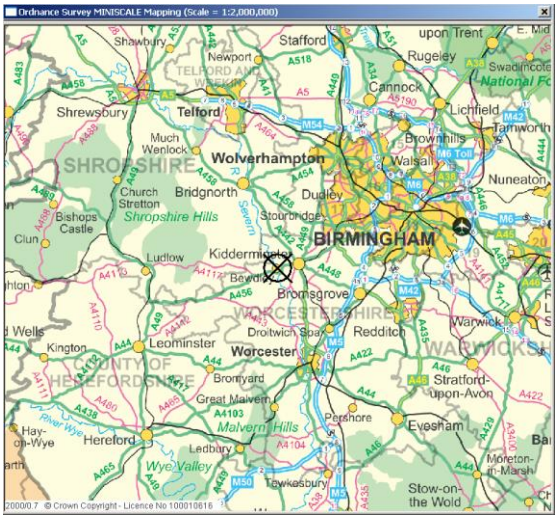
Go to the main DiPS folder (usually in My Computer then local disk C:)
Within the main DiPS folder is another folder called WIN. Go into to the “WIN” folder
Right click on any white space in the WIN folder and click “Paste”
This will copy the m3.exe and any other required files out of the zip and into the DiPS WIN folder

OS Background Maps

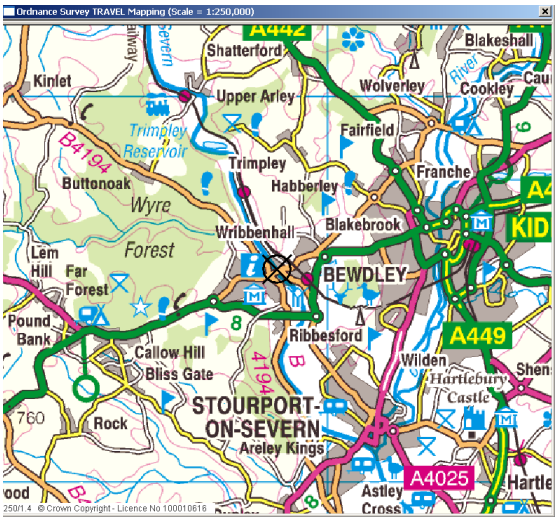
DiPS OS Mapping - Choosing the Detail Required

There are three levels of Ordnance Survey mapping normally associated with the standard package.
Maps can be displayed at scales from 1:2,000,000 (MiniScale), to 1:250,000 (250K) and then 1:50,000 (50K). These files and folders can be downloaded using the OS Basic Maps Link and the OS 50K Maps Link on the web page.

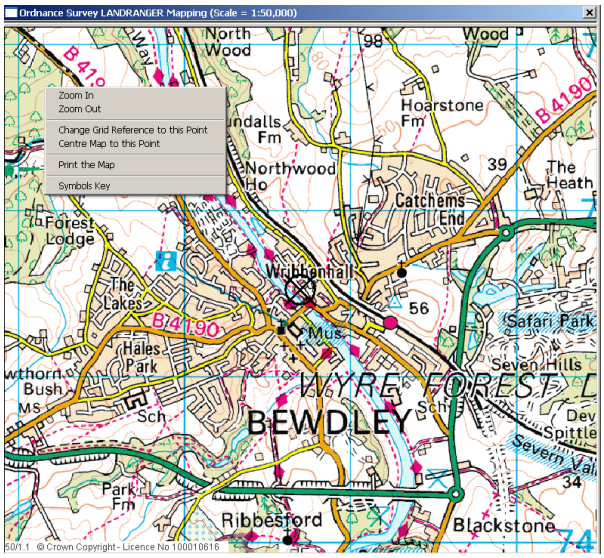
From May20 releases, the MiniScale and 250K Raster folders are included in the software setup.exe install and so do not require a separate download necessarily



Example of a MiniScale map



Example of a 250K map

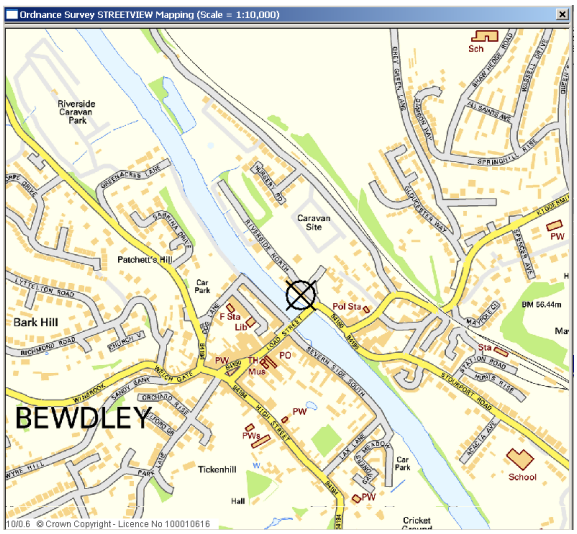


Example of a 50K map

In addition to these Levels DiPS can also employ two more detailed map levels if required.

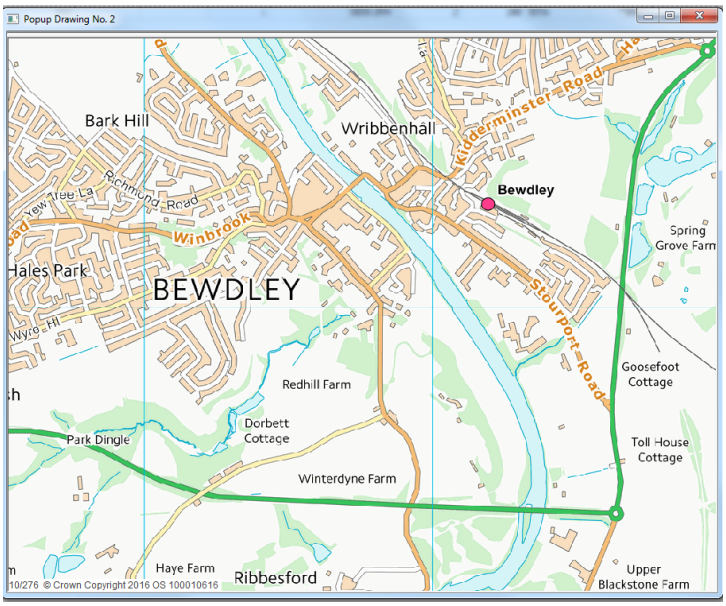
Detailed Street Level mapping will show road names and individual buildings.

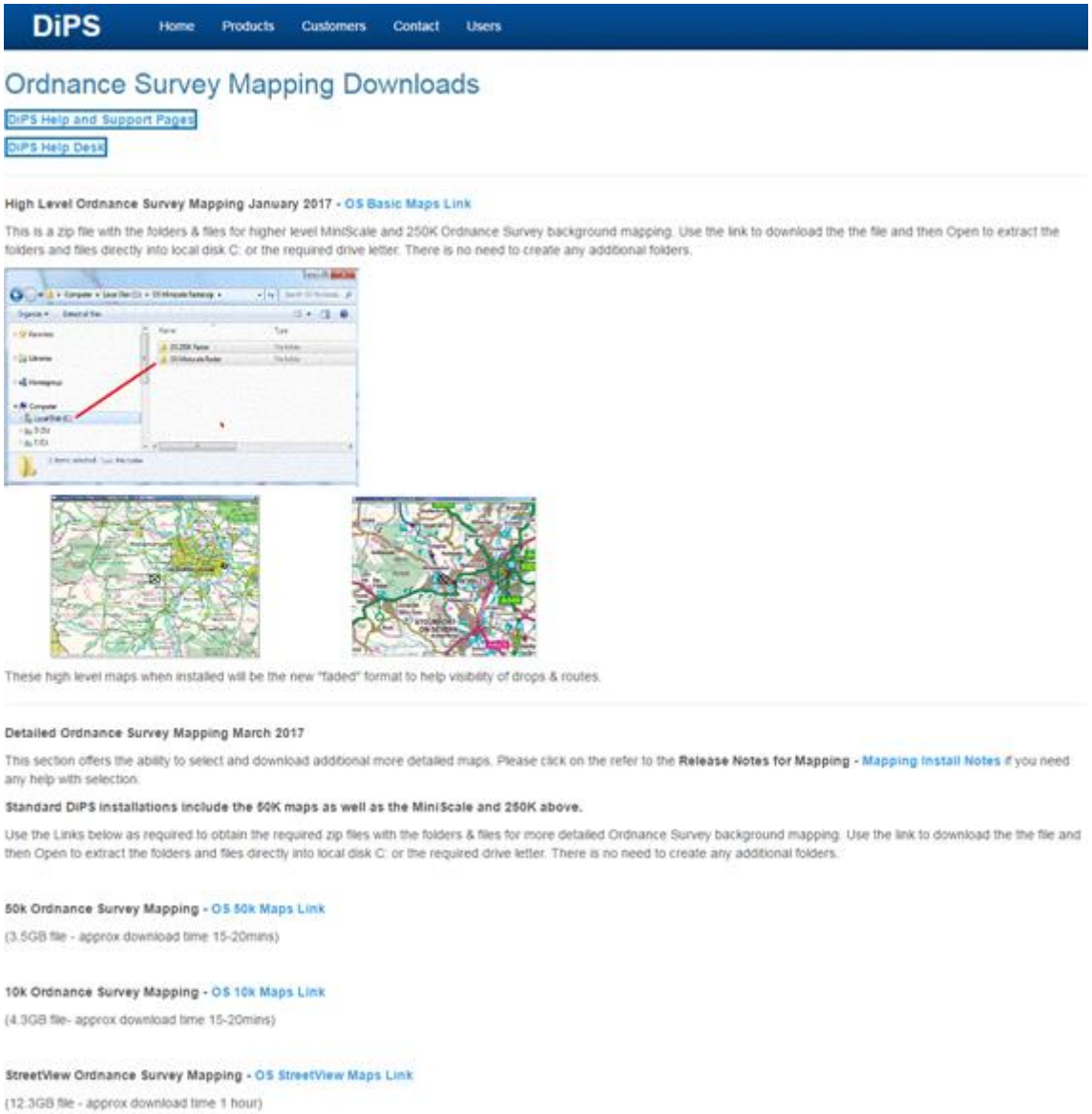
As another option an intermediate 10K scale which is a level below 50K and will show streets with some main road names



Example of a Street View map

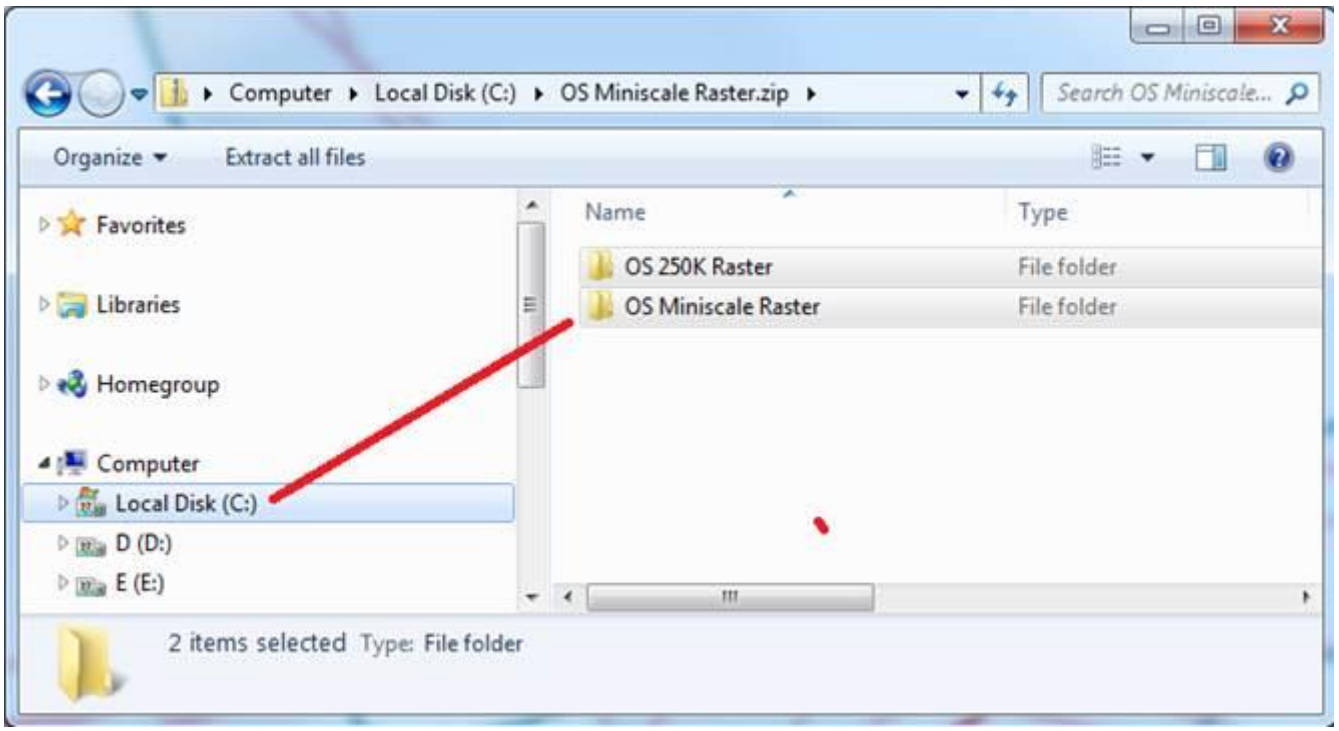
Example of a 10K map





After downloading any of the the ZIP files just open and then copy and paste the folders directly into local disk C: (or another drive if you have selected one for all your maps)

Select only the drive and not a folder as the files are copied into folders as required.



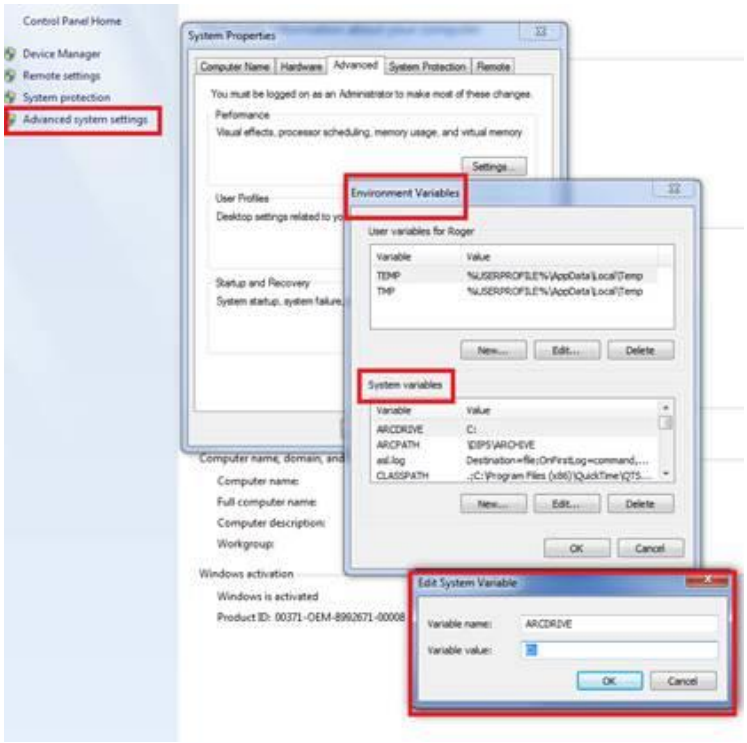
Please check that any drive chosen has enough working disk space prior to copying.
This is not normally an issue on newer PCs but please note that depending upon the levels chosen it may require GIGABYTES of free space!

The standard MiniScale, 250K and 50K maps require 20GB of free space for an initial installation.

With the StreetView and 10K added it can rise by another 16GB.

Daily planning Customer Specific Installation – after install

Some planning locations requires specific Environment settings to be added to the basic installations for file locations when loading orders and uploading route information.



In the Control Panel menu, click on the System Icon and then choose Advanced System Settings. Modify the Environment Variables section and System Variables.

Change the following variables to specific values matching the older existing live PC or contact DiPS for advice if necessary - INTODIPS, OUTOFDIPS

To match existing installations, there are also some files and folders that you will need to copy from the current planning PC to the new PC so you have the same setup. Everything you need will be in the DIPS folder on local disk C: and need to be copied into the DIPS folder on local disk C: on the new one..

The 2 main files are -

MASS (this is the current file of routes/orders etc you see on your PC – this is the file that makes the menu options appear)

STYLE_OF_XXXX (where XXXX is the User ID normally used to log into DiPS – this has all the column layouts e.g Style_of_DIPS

1 folder –

ARCHIVE (copy the whole ARCHIVE folder from the old PC and all the folders within it – these should contain all the saved plans on the old PC)

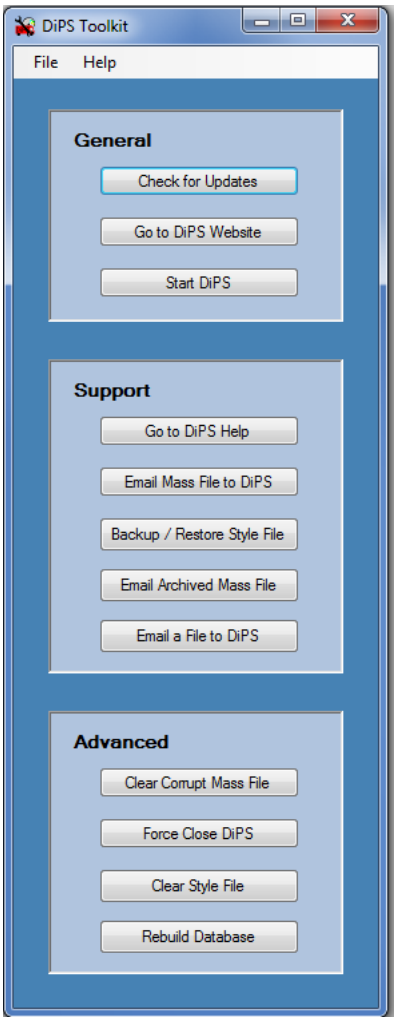
The MASS file and Style_OF_ files will be fairly small but there may be a few files within in the ARCHIVE folder so that might be quite large..

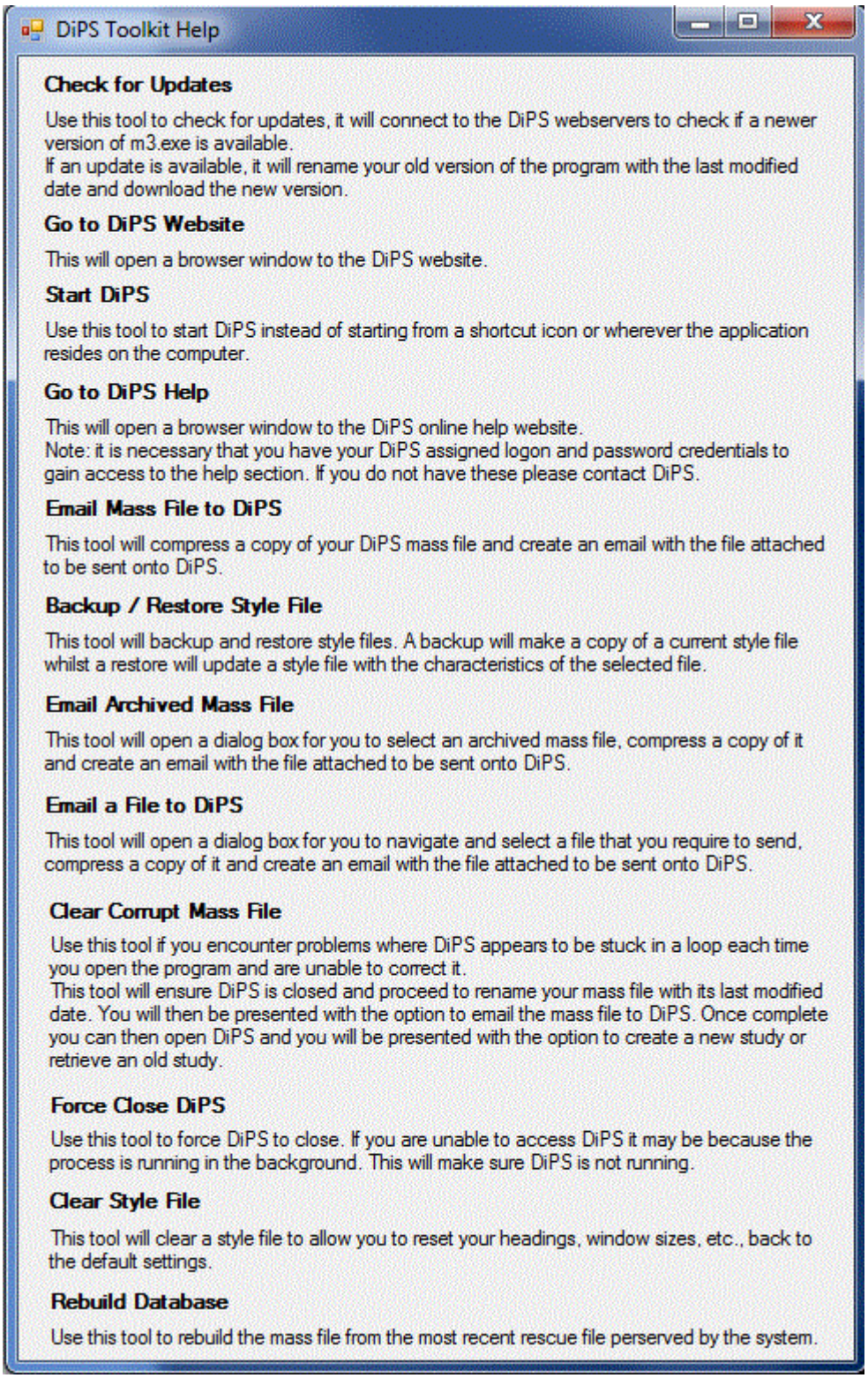
DiPS Toolkit

In order to facilitate system support, an additional utility icon has been added to installations. The DiPS Toolkit provides options to check for updates to the program, email files to DiPS, remove problem files and so on.

After the program runs, simply choose the appropriate icon to activate the required choice. For example, clicking on the *E-mail Mass file to DiPS* option will create an email with the current DiPS database file compressed as an attachment, to which you can add your contact details, a description of the issue and then send to DiPS Support. You can also use options to email Archived Studies or single files in the same manner.

For details of the other options currently available, please see the image below.





Troubleshooting – Running the Program

When the program starts, the following message will appear if the correct response is not received from the dongle (user license) attached to the computer.

For the **DONGLE NOT FOUND** message please check that a dongle is attached to your machine properly. For example it may have been removed from the parallel port at the back of the machine or (with a USB device) it may have been dislodged in some way; and will need to be re-attached before the program is run again.

If the dongle is attached as normal, it may be that the computer port is malfunctioning in some way. Try to Shutdown the computer and then re-start it. If the problem re-occurs, help from the hardware supplier or support department may be required.

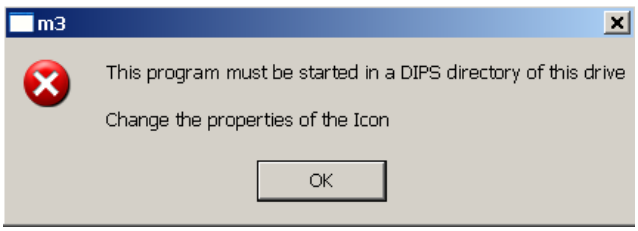
The third issue may be with the device drivers for the dongle. If the program is already installed and has been working correctly prior to the event, this reason is unlikely. However, if it is a new installation or should you need to re-install the drivers for any reason, please insert the DiPS system CD, choose the option to install DiPS and then select Change Dongle Type to run the DK3WIN.EXE program to install the drivers.

In the case of a **CORRUPT DONGLE** message, it is necessary to contact DiPS as the dongle information is corrupt and a backup procedure to re-write the data has failed. If the backup procedure is working correctly, a message with the information **Dongle Memory is Corrupt – Restart Program** is displayed. The dongle should then perform as normal when the program is re-started.

EXPIRY DATE messages will only occur for rental / leased dongles or where a backup dongle is employed as advised by DiPS. Please contact DiPS at this point to proceed. Note that contact must be made within any Grace Period for the dongle to function correctly in the future.

The **Start In** folder for any icon running New Egotrip program (m3.exe) **MUST** be the \DIPS folder (e.g. for programs installed on the C: drive - c:\dips).

An error message (see right) will display if this is not the case. To correct the problem, click the icon with the Right Hand mouse button, choose Properties from the menu, and then modify the “Start In” folder field.



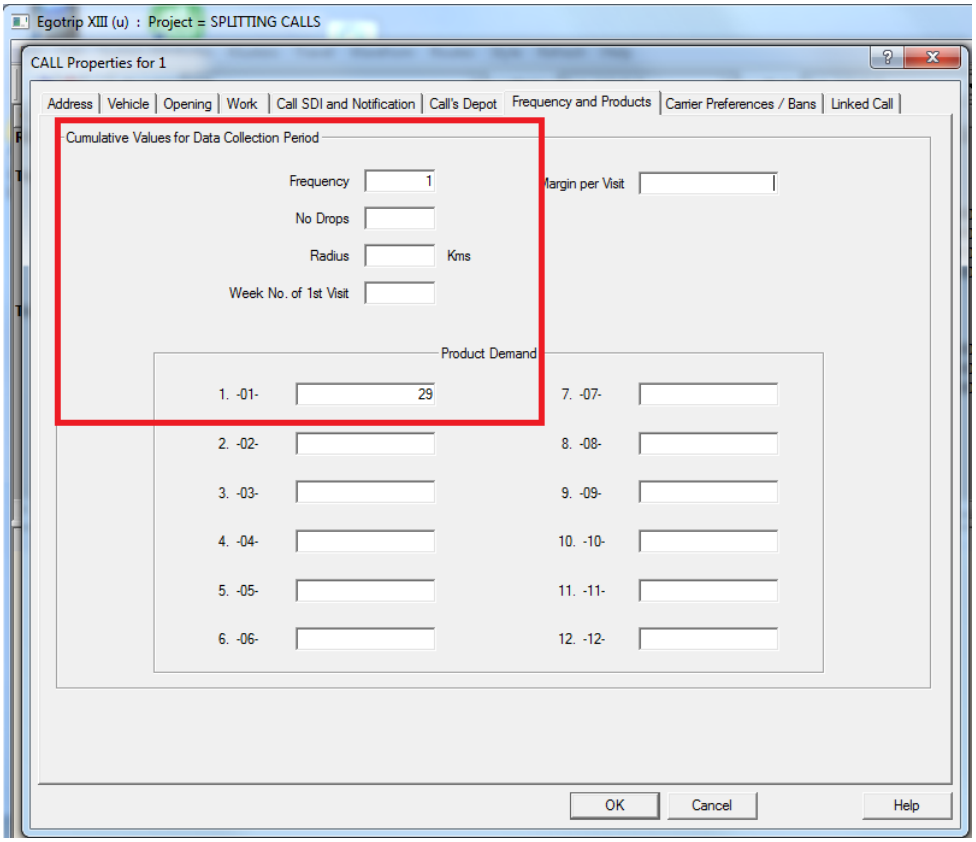
Help & Advice Section

Guide to Splitting Calls in Strategic Planning if Quantity exceeds Vehicle Capacity

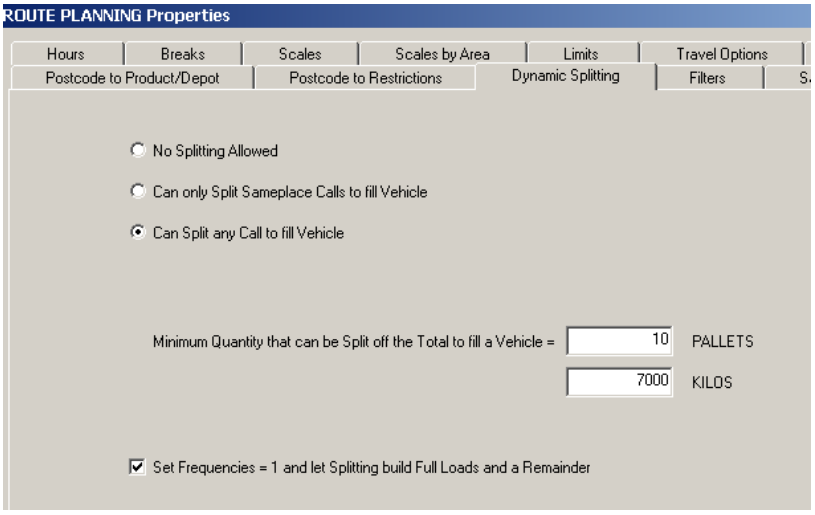
This section will help explain options for planning calls onto vehicles when strategic planning if the delivery quantity required is large than vehicle capacity.

In the examples provided we will utilize the following call data :

1. Delivery frequency is set to 1 or is blank on import
2. Delivery Quantity is 29 pallets – with maximum vehicle capacity of 26



In the Routes Parameters menu dialog, Dynamic Splitting parameters control the division of call quantities to fit onto vehicles.



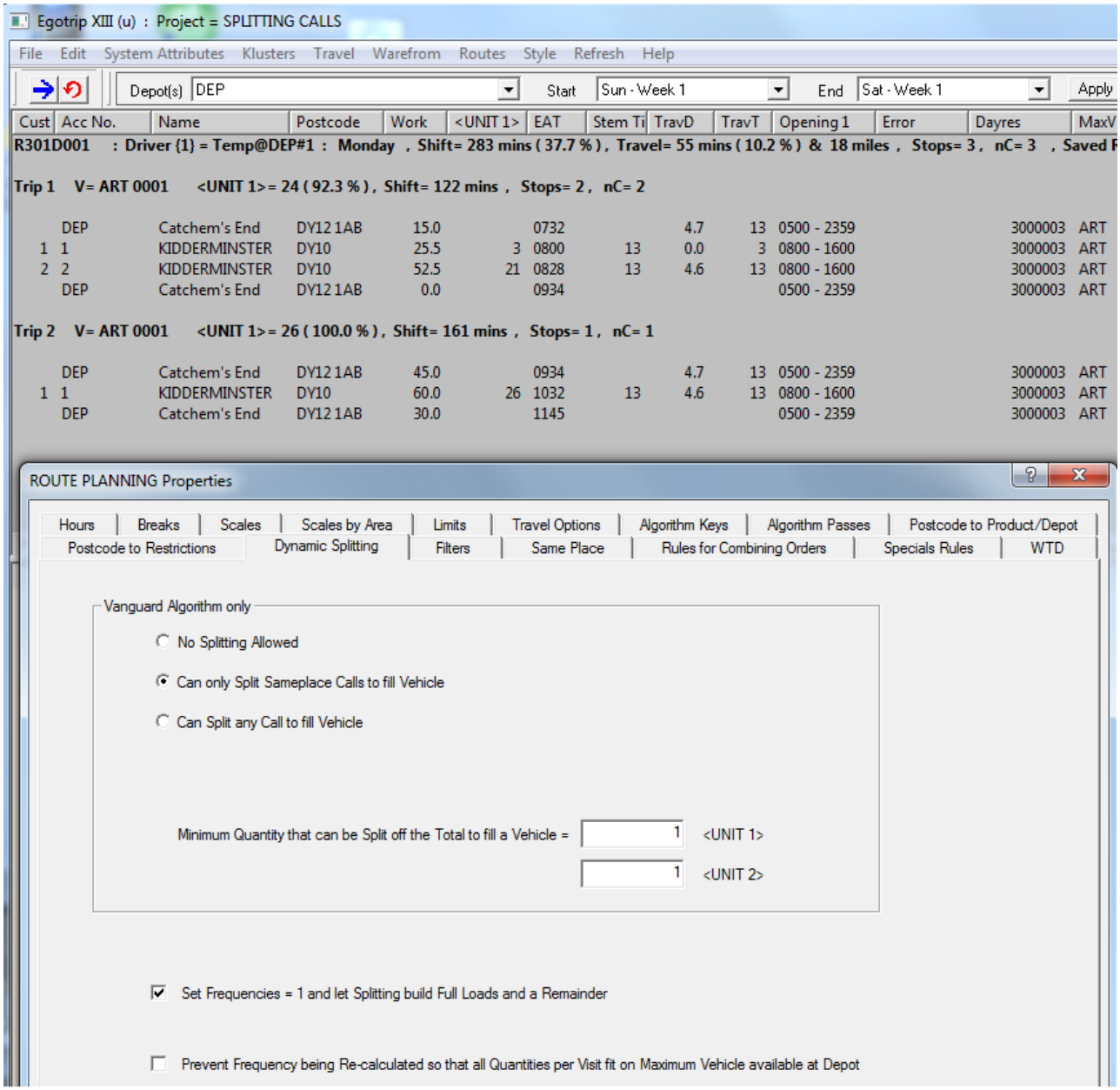
When using dynamic splitting for best results and to avoid unnecessary confusion please ensure that calls cannot combine together with SamePlace settings (i.e. leave all options on the tab ticked)

By default, for Calls where the required frequency exceeds the number of available depot shifts or the quantity is greater than the biggest vehicle available, the **No Splitting Allowed parameter is set** which means that the scheduling routines will defer the call with reason code = -5. The call frequency or quantity may then be amended to match the depot restrictions and scheduling re-run if necessary.

However, as an alternative measure, parameters may be set to enable the routing program to divide quantities dynamically. The two normal recommended options to cover most requirements are as follows:

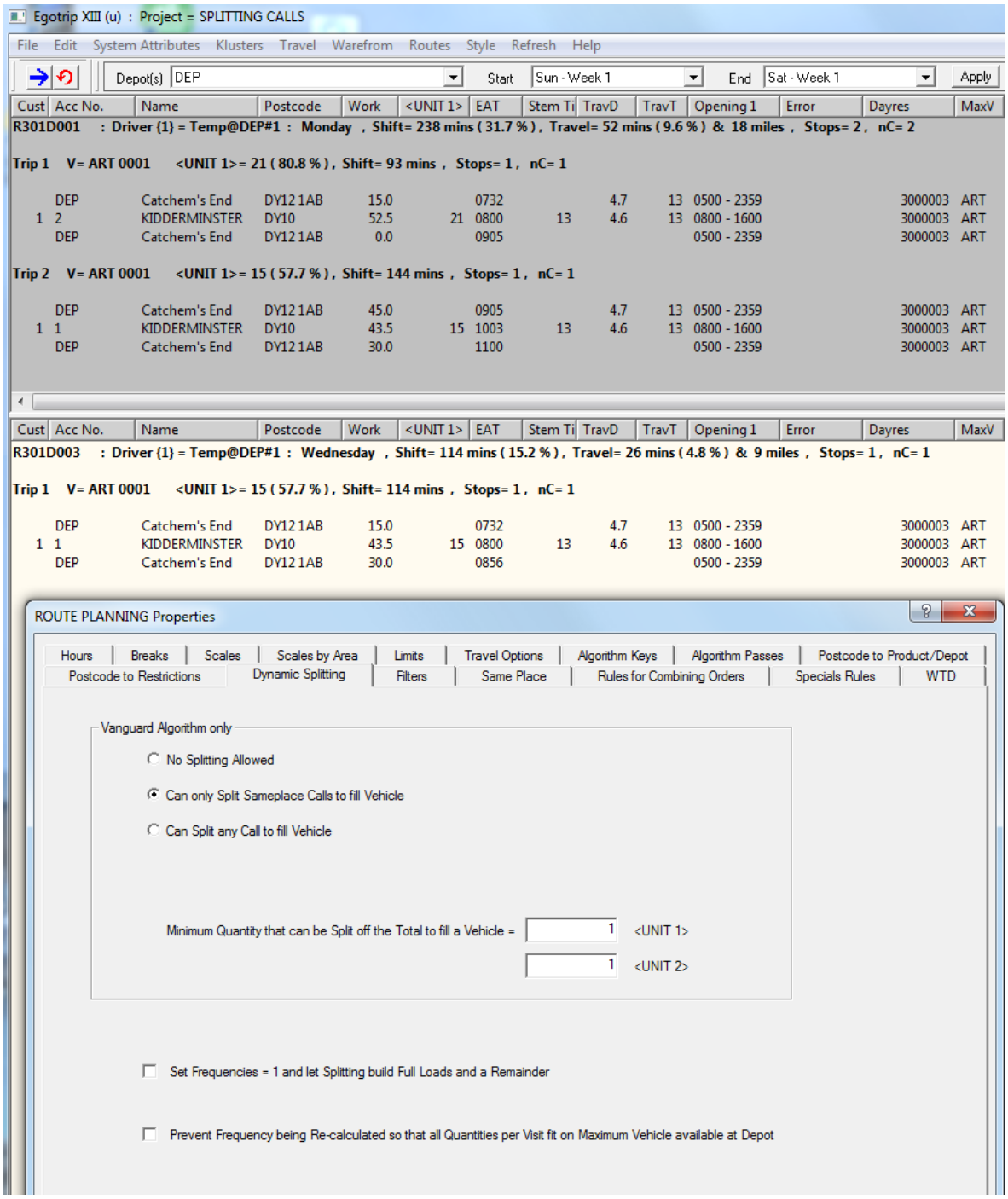
Delivering a Full and Remainder Load

By setting the **Can only Split Sameplace Calls** = **On**, setting **Minimum Quantity that can be split to 1** and also using **ticking the Set Frequencies = 1 option,** the scheduling run in Vanguard will ignore all defined frequency values for all the calls and then split the call into a full and remainder load to be done on the Monday even if the call is open all week (see below). Trip1 has the 3 pallet remainder and Trip2 the 26 pallet full load.



Changing the Frequency of Delivery from 1 to 2

By setting the **Can only Split Sameplace Calls** = **On** and setting **Minimum Quantity that can be split to 1** the scheduling run in Vanguard will increase the delivery frequency to 2 and deliver half the quantity on Monday half on Wednesday as the call is open all week (see below). R301D001 on Monday has 29 / 2 = 15 pallets and R301D003 on Wednesday also has 15 pallets.



Note

If the call has restricted opening days in this scenario (for example if the call is only open on Monday) the routine will not be able to deliver on other days in the week and so it will plan as in the first option above with a full load and remainder on Monday.

Other Settings on Dynamic Splitting

The Can Split any Call to fill Vehicle parameter will allow any calls to be split and routed on the same vehicle if found within the lollipop of a route (even if in different locations), whilst the Can only Split Sameplace Calls parameter will only split calls' volume to go on the same vehicle route only when they satisfy the sameplace rules defined. In both cases any quantities split off the total for a call must meet the Minimum Quantity figures set (see below).

The Minimum Quantity that can be split off the Total to fill a Vehicle parameter is used when routing to control the splitting of units when the quantity is too big for the biggest vehicle that can access the call. Set to 1 or above, it enables splitting but can be controlled by a higher value. For example, setting it to the capacity of the biggest vehicle ensures that only full loads will be split off the total (including equivalent full loads for any calls with a smaller maximum vehicle size). If values are set for unit1 and unit2, *both* values must be satisfied before the quantity is split.

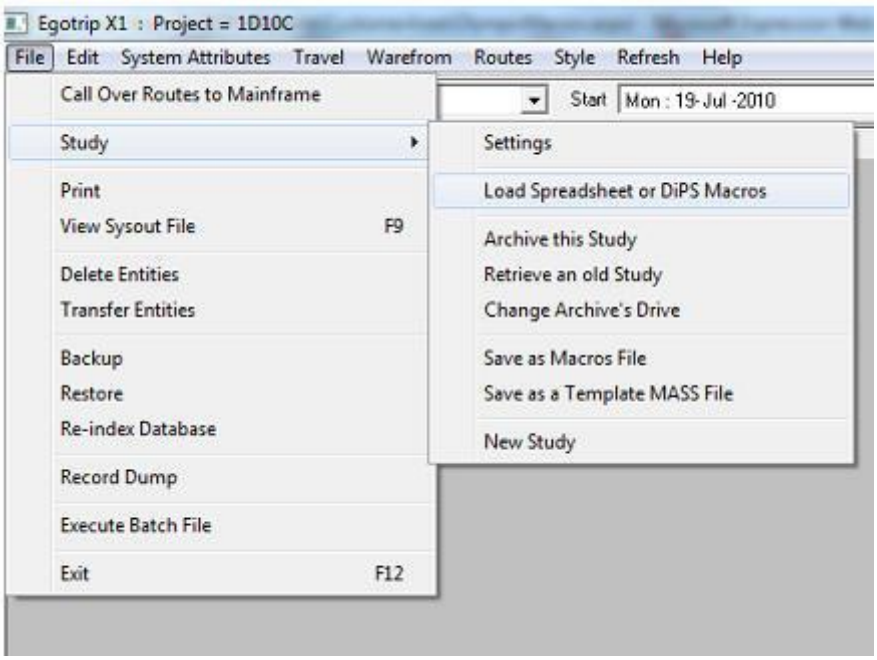
With the Set Frequencies=1 parameter, the call frequency may be amended to 1 and the scheduling program produce copies where needed in order to deliver the required vehicle units within the depot restrictions set. As an example, for a call requiring 5 visits with only 4 available delivery days (bank holidays for example), the scheduling program will compare the maximum vehicle size capacity and deliver the required volume in 4 visits if possible. Where there is too much volume additional vehicles will visit the call on the same day.

If ticked the "Prevent Frequency being Re-calculated" option will stop strategic routing programs increasing the frequency automatically for calls that have a larger drop size than any vehicle available at the depot. If for example a call is open for five days in a week and has a single quantity of 40 pallets (for a 22 pallet vehicle) the program would automatically increase the frequency to 2 per week in order to route the call. Setting this parameter will not allow the frequency change and leave the call un-routed.

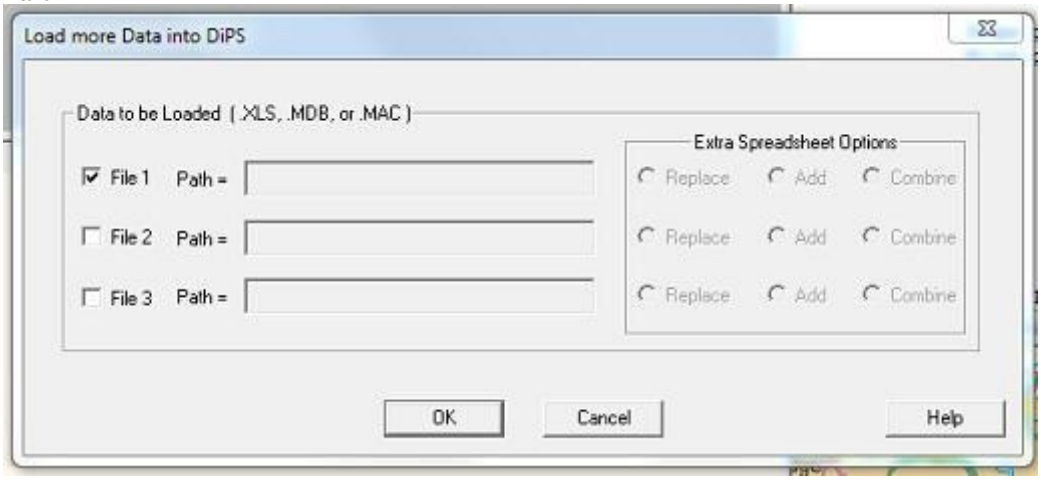
How to Load in DiPS Macros

1. Download the DiPS Macro to your computer and Run DiPS as normal

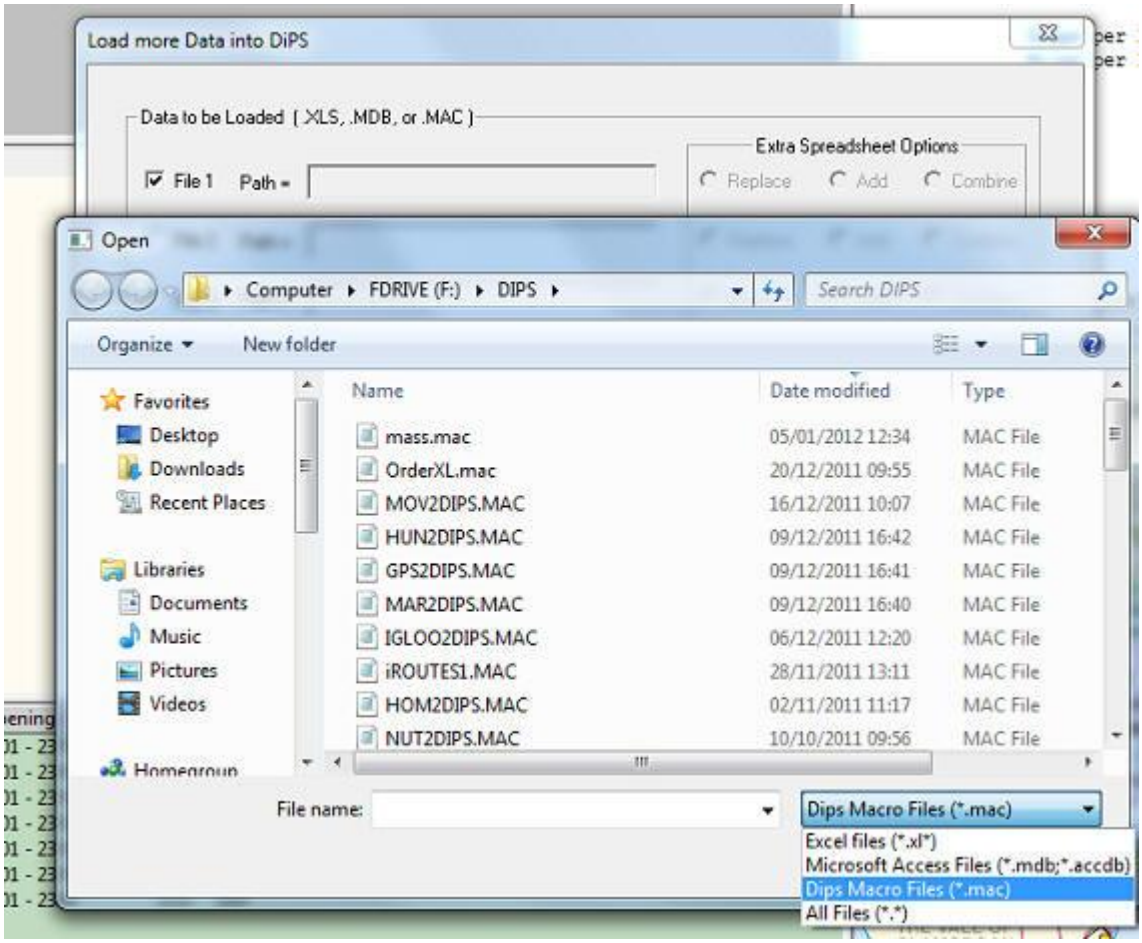
2. In DiPS, go to the File Menu, Click on Study then "Load Spreadsheet or DiPS Macros"



3. When the Dialog appears, Left click on the box next to "File 1" to tick it and bring up the Window to select the Macro you want



4. Go to the drop-down box next to File name at the bottom of the window, and click on "Dips Macro Files(*.mac)



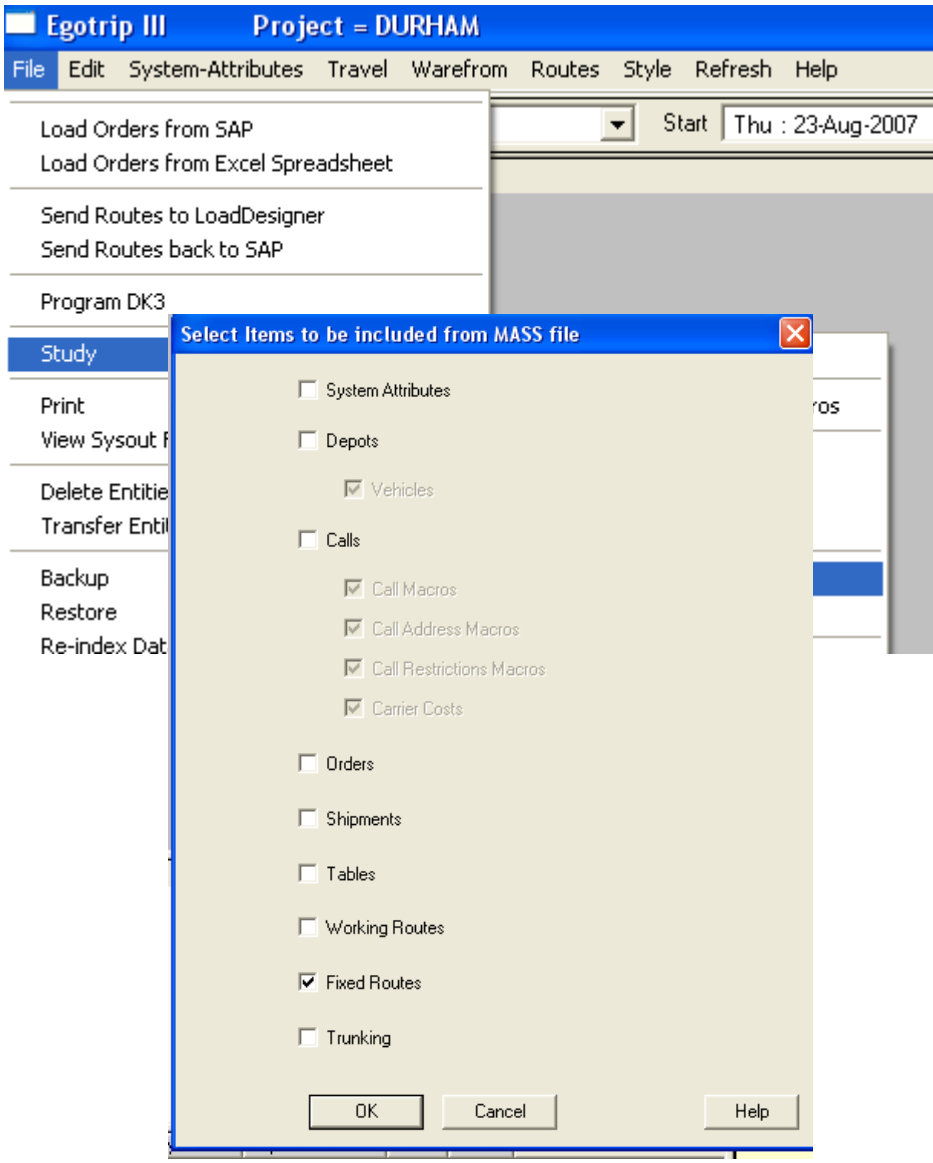
Find the Macro file you want to load, click on it once to highlight it, then click on Open. Then click on OK.
DiPS will load in the Macro file, inform you of any errors, and then you are ready to go.

To Transfer Fixed Routes for 5 days onto 1 file

To save new Fixed Routes

1. Retrieve Monday's plan into DiPS

2. Create a File to to load into the main MASS file – click File, Study, Save as Macros File



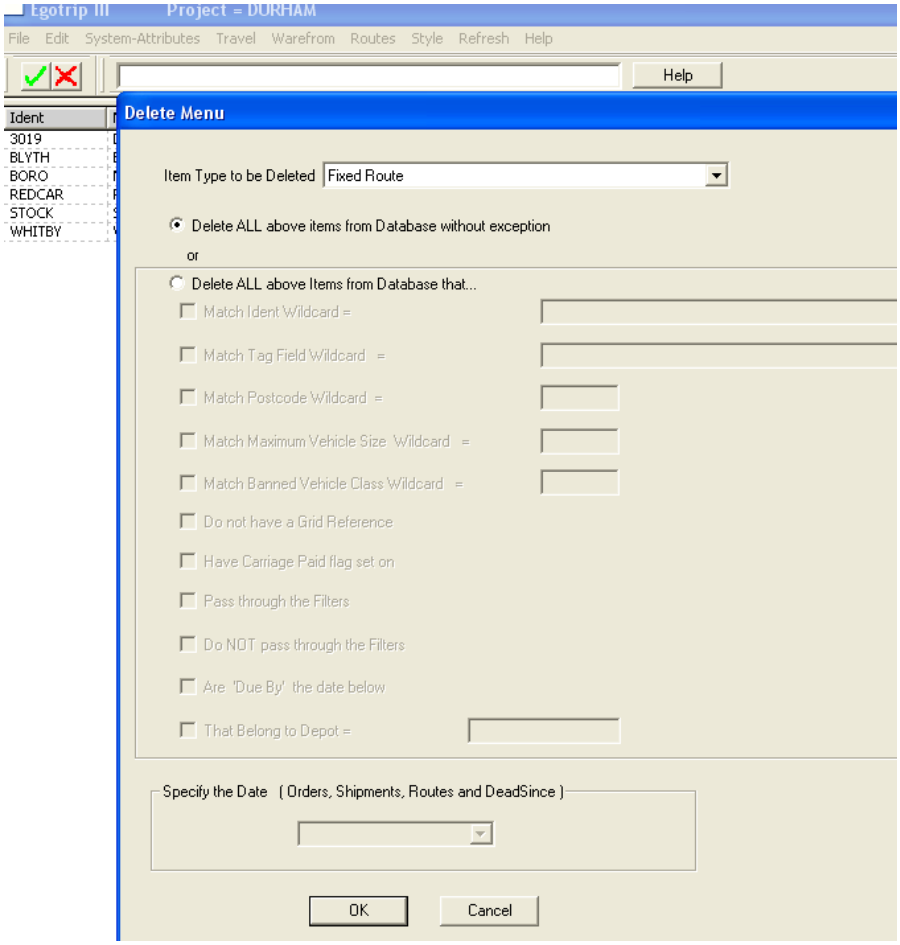
At the dialog select only Fixed Routes and then pick a filename (perhaps Durham_Monday.mac) & save the file to a location (perhaps network w: drive?)
Or save it to your dips folder…

3. Repeat for all 5 days

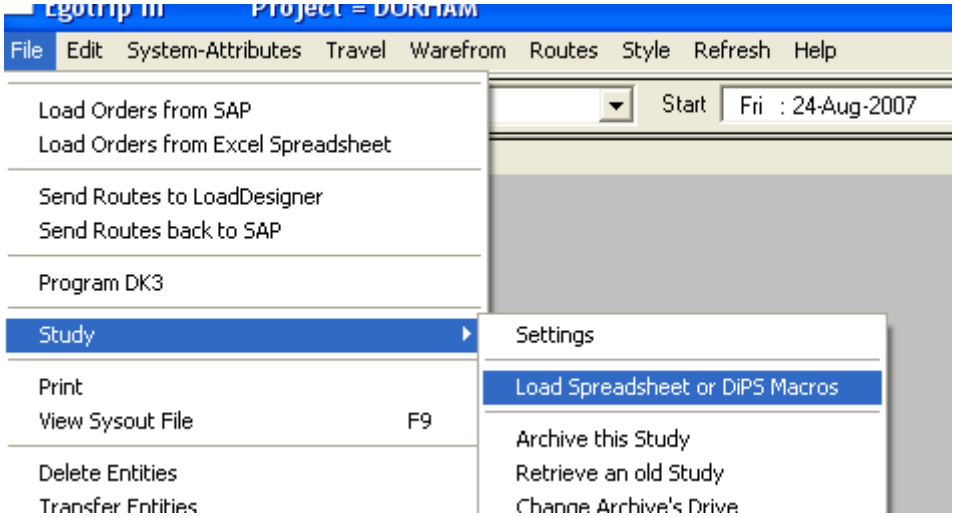
To Load new Fixed Routes into new MASS File

Run DiPS as normal

1. Delete old Fixed Routes – click File, Delete Entities, select Fixed Routes, Delete ALL from database, and click OK



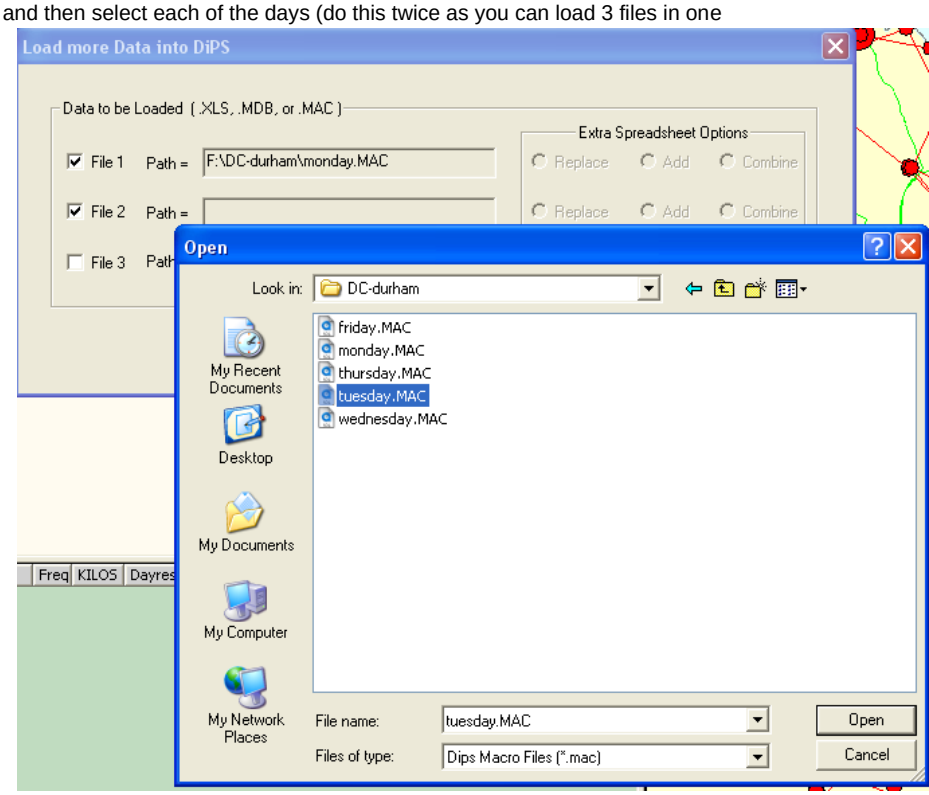
2. Load new Fixed Routes – click File, Study, Load Data from Spreadsheet or Macros Files



3. Change the file type to DiPS Macro and then select each of the days (do this twice as you can load 3 files in one go)

4. Click OK to load (NB you can ignore any duplicate call error messages)

5. Click Routes, Show Fixed Routes and verify that all days are OK …!!

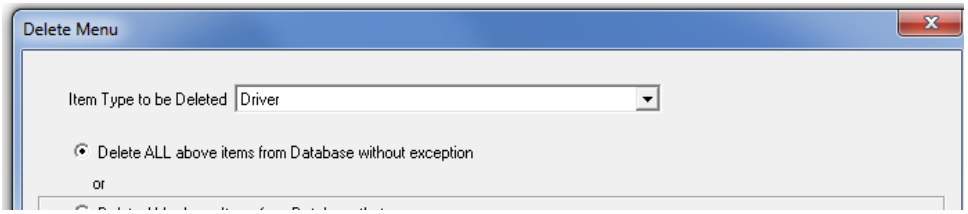


To Transfer Orders & Routes for 5 days onto 1 file

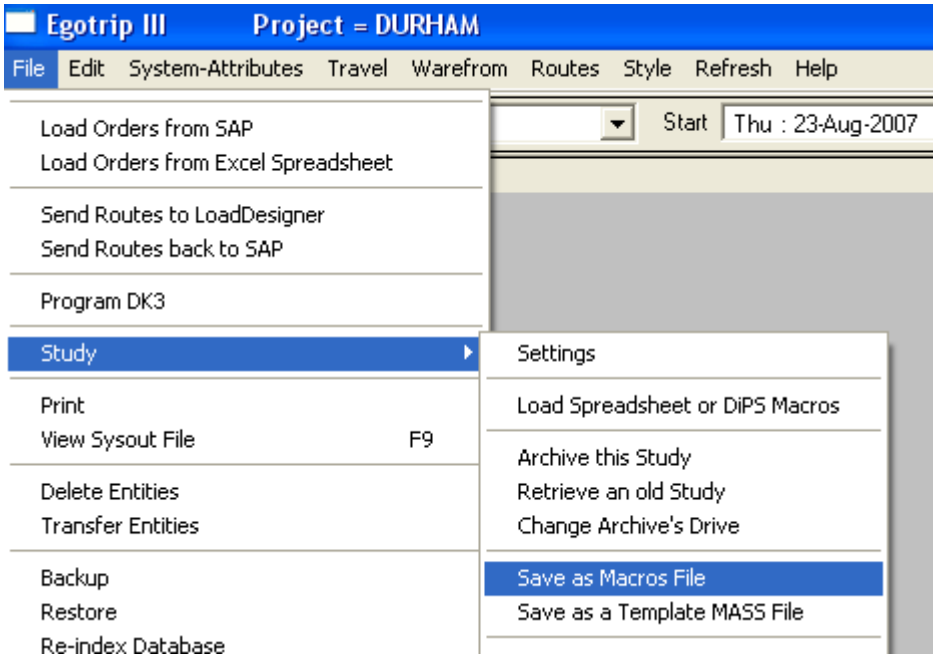
First - Archive the Current Plan you are working on..

1. Retrieve your Archived Monday's plan into DiPS – use File, Study, Retrieve an Old Study and pick the Study you saved..

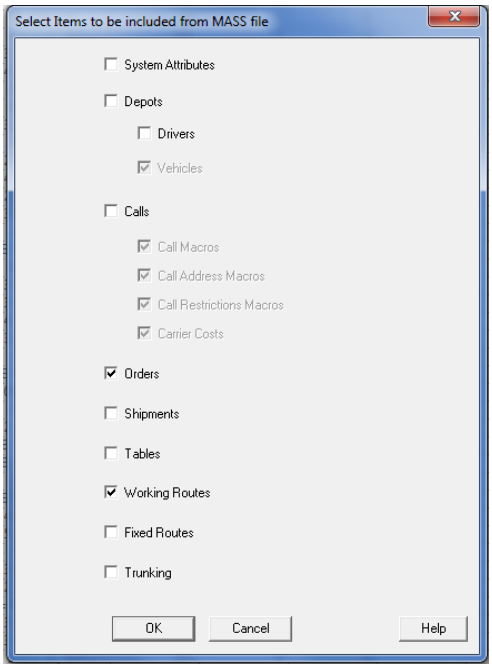
2. If you have allocated drivers and mates to routes, it is advisable at this point to delete all Drivers to work across a week. Use the File, Delete Entities menu option, choose Drivers from the Item Type drop-down list, use the first Delete ALL items without exception button and then click OK



3. Create the Monday File – click File, Study, Save as Macros File



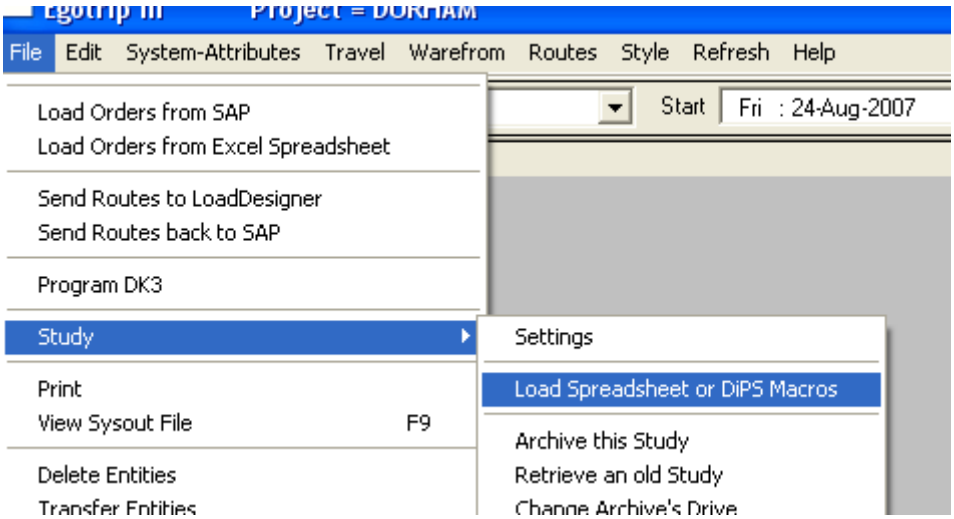
4. At the Select Items dialog select only **Orders and Working Routes** and then pick a filename (perhaps Monday.mac) & save the file to your DiPS folder…



5. Repeat steps 1-4 for Monday to Thursday

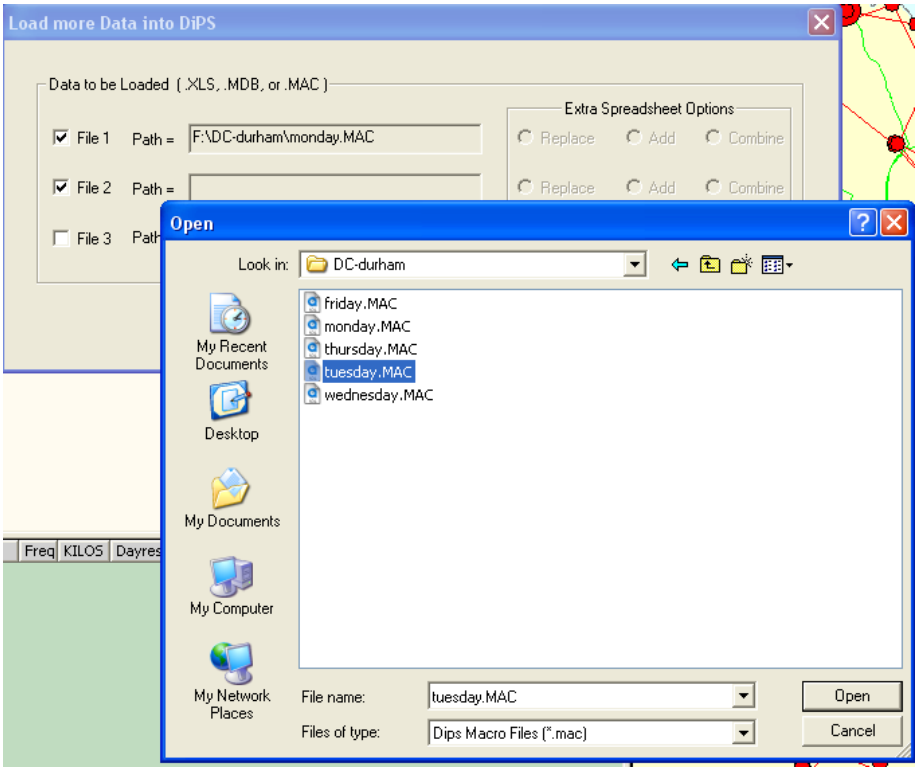
6. Retrieve your Archived Friday's plan into DiPS – use File, Study, Retrieve an Old Study and pick the Study you saved..

7. Load in the Monday-Thursday data – click File, Study, Load Data from Spreadsheet or Macros Files



8. Change the file type to DiPS Macro and then select each of the days (do this twice as you can load 3 files in one go)

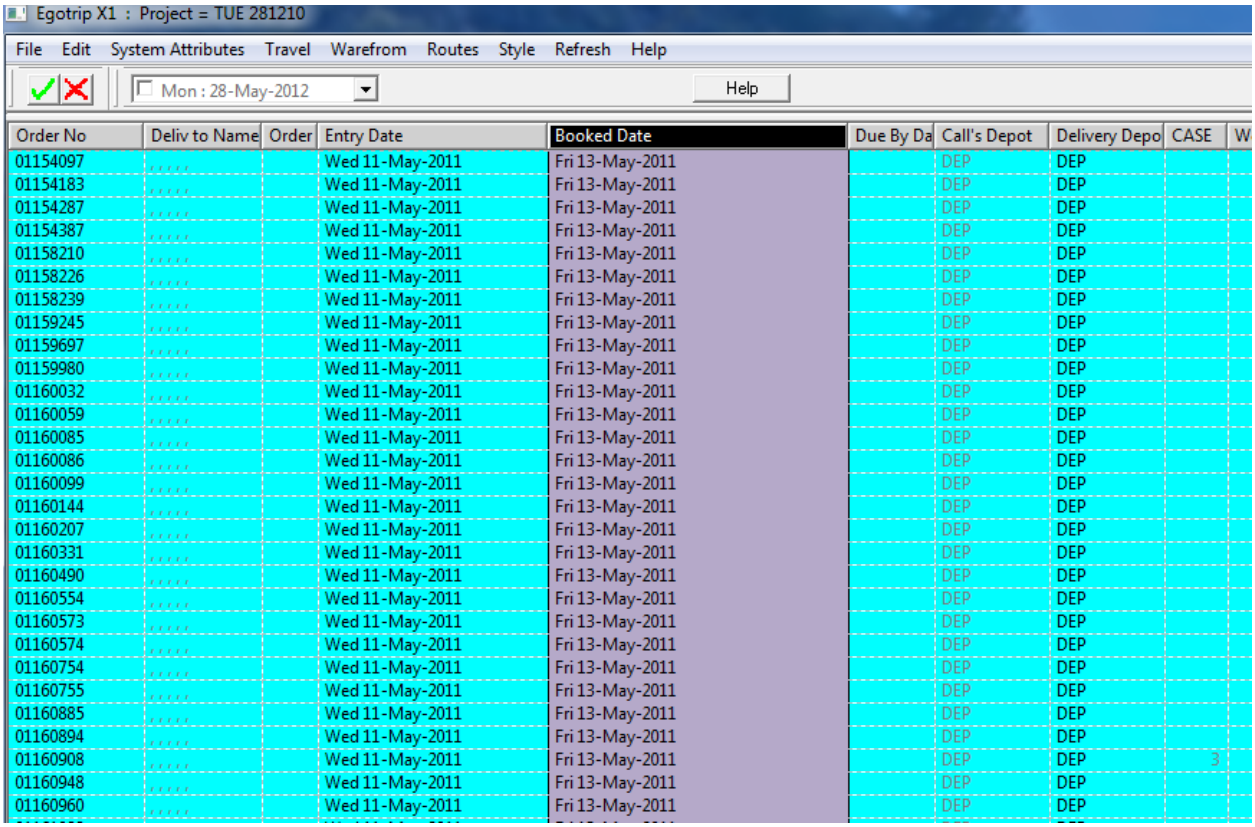
9. Click OK to load (NB you can ignore any duplicate call error messages)



Next, remove all the dates from your orders

To do this, click Edit, Kingpin Mode and click on the Orders Tab

Click with the right hand mouse button on the Header that says Booked Date top highlight all the Orders and then press the Enter key to remove all the dates



Order No	Deliv to Name	Order	Entry Date	Booked Date	Due By Da	Call's Depot	Delivery Depo	CASE	W
01154097	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01154183	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01154287	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01154387	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01158210	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01158226	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01158239	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01159245	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01159697	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01159980	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160032	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160059	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160085	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160086	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160099	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160144	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160207	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160331	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160490	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160554	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160573	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160574	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160754	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160755	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160885	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160894	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160908	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP	3	
01160948	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		
01160960	,,,,,,		Wed 11-May-2011	Fri 13-May-2011		DEP	DEP		

If you can't see a header called Booked Date, use the menu option Style, kingpin Headings for Orders and add it to the list

Finally, to show all the routes and orders, click Routes, Egotrip Mode and then set the Start Date to be the Monday and the end date to be the Friday

Click Apply button and after the matrix has run, you should be able to see and plan all orders and routes

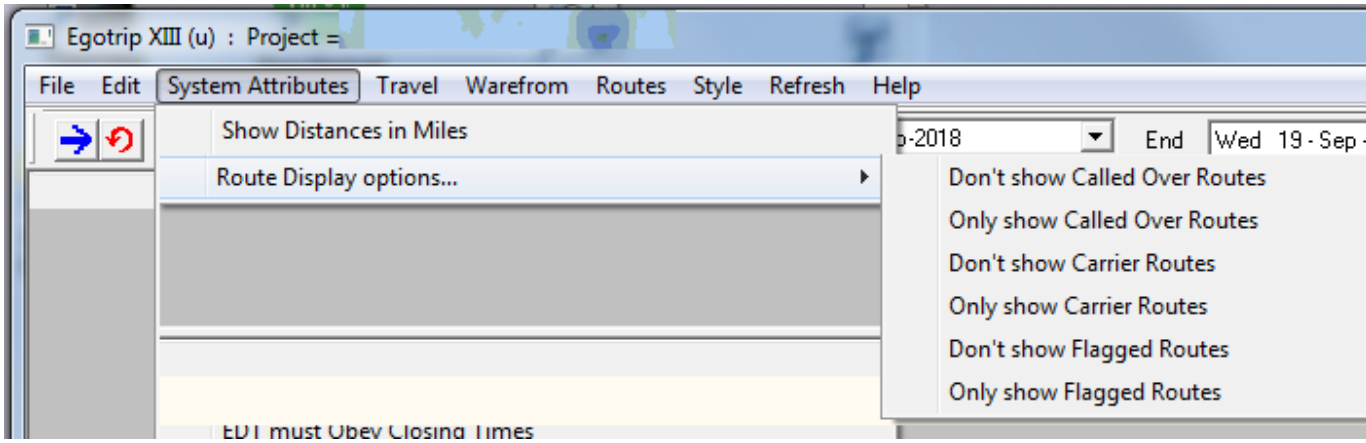
Route Display Options for Graphics – System Attributes Menu

The System Attributes menu Route Display Options can be used to display or hide individual routes or groups of routes on the graphic map display.

The program has 6 options that can be selected so that the criteria can be flexible and specific to the model and routes in question. If no options are selected all routes for the depots and days/dates applied will be displayed as normal.

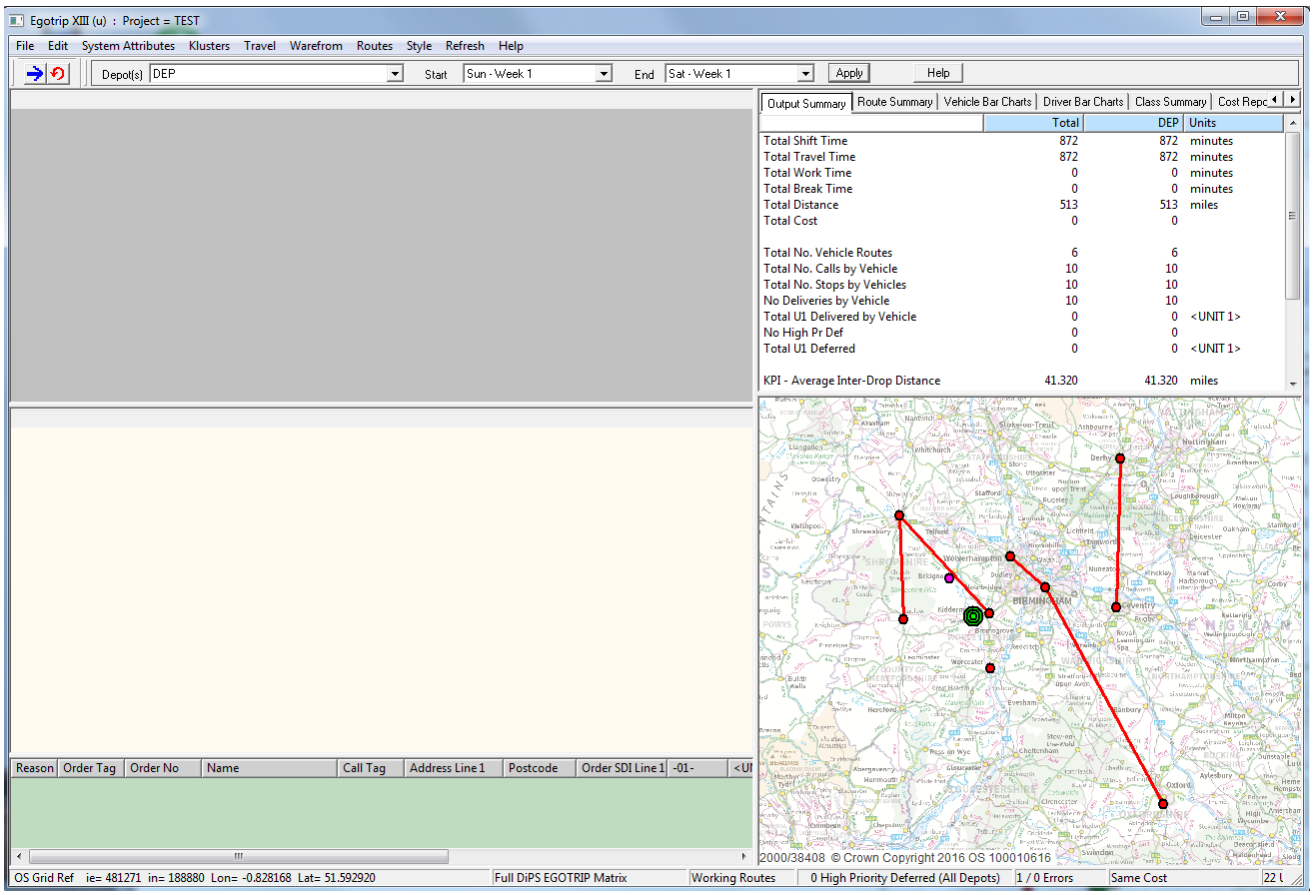
To pick an option simply tick the required text line and then press the APPLY button to re-load the data.
Multiple selections are allowed but please be mindful of the outcome in these instances.

To avoid confusion these options are re-set every time the DiPS program is run to show all routes by default.

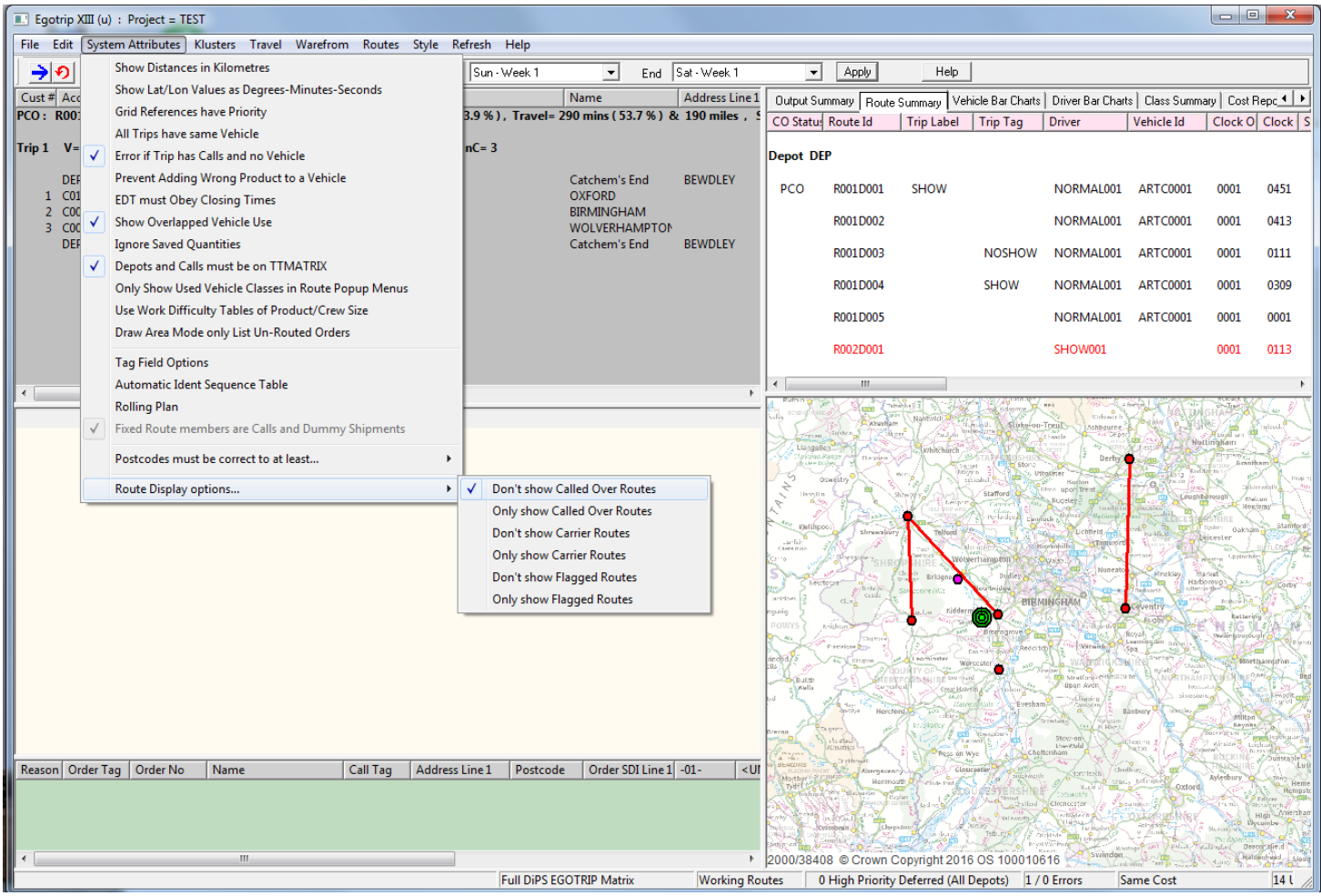


The options enable route display using Callover criteria, Carrier Routes or specific “Flag” criteria using driver name, route label or route tag fields.

By default on running the program all routes will be shown as in the example below.



Using the Called Over options, its is possible to hide routes that have already being called over (and finished for the day perhaps) by setting **Don't Show Called Over Routes**. Hence in the example below, route1 Oxford/ Birmingham/ Wolverhampton) is hidden as it has previously been called over (see CO Status = PCO or CO). Alternatively it may also be set using the Route Summary menu option – To be Called Over.



Ticking **Only Show Called Over Routes** will reverse the logic enabling users to display only routes that have been set or finished for example. Only route 1 would be displayed in that instance.

Negative routes such as Carrier Routes, Customer Collections or the Post List can be shown in isolation or excluded from the map display using **Don't Show / Only Show Carrier Routes**. The normal squares showing for such routes are then hidden or displayed without routes so it's possible to see the areas covered.

Flagged Route Options

Flagged route coding employs either **SHOW** or **NOSHOW** to ascertain whether routes should be displayed or hidden.

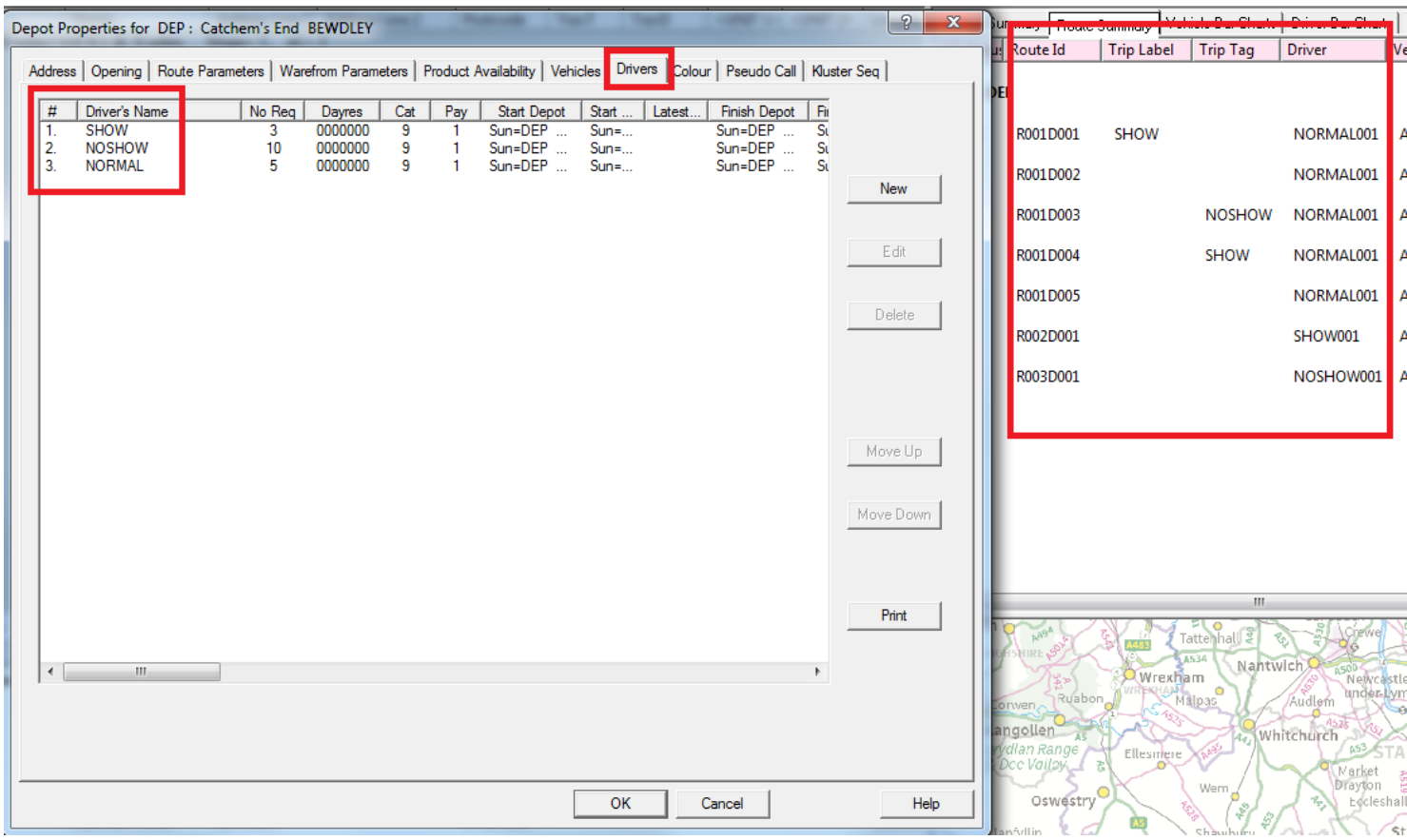
SHOW is used within the Only Show Flagged Route option
NOSHOW for the Don't Show Flagged Route option

This text can be added either to the **Trip Label or Trip Tag** fields on any route using the Route Summary menu option. It can also be combined with other text within these fields as long as it is at the start of the field (e.g. SHOW VAN3)

Another option is to create and employ specific **Driver Classes SHOW or NOSHOW**
Allocating drivers of either type to routes would then govern which routes appear on the map background.

In the example below route1 has a NORMAL driver which excludes any checks, route2 has a SHOW driver to promote its display whilst route3 has NOSHOW001 which will suppress display given the option chosen.

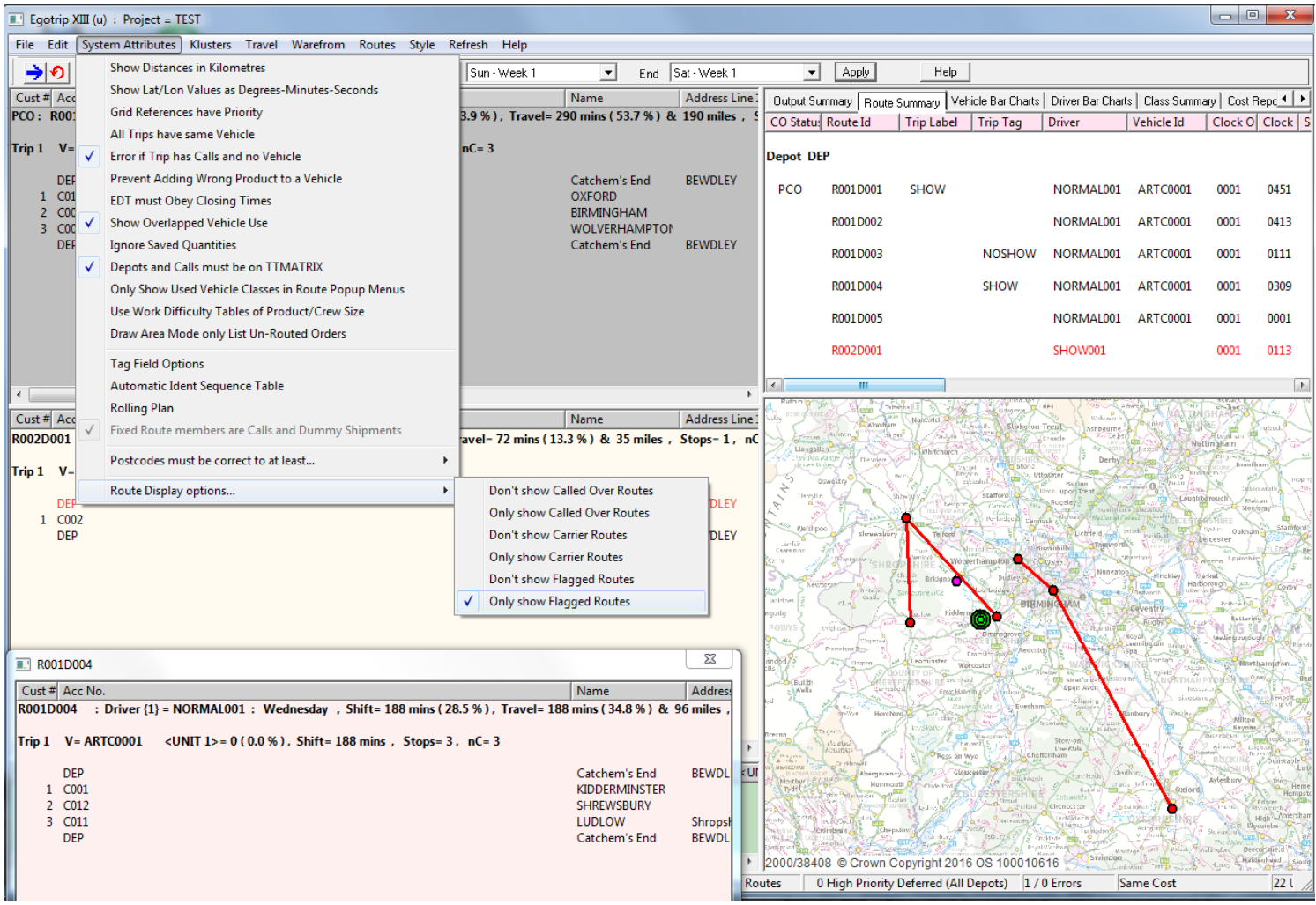
The checks look for the first 4 characters for "SHOW" and 6 characters for "SHOW" so it is possible to create different classes as required (such as SHOW-NIGHTS or NOSHOW-6AM for example).



The logic will search all criteria and fields to see whether a route will be displayed.

In this way using the *Only Show* option in the example below looks for SHOW tag/label in routes and also the SHOW driver.

Thus three routes R001D002, R001D003 and R002D001 are not displayed on the map.



Daily Planning Route Summary Data saved into Yearly Analysis File - 2018_STATS.CSV

Summary data for routes planned on a daily basis is now saved automatically into a file that can be used for route analysis purposes. Each time routes are called over using the menu option File, Callover Routes to Mainframe (or specific company equivalent) summary data for each route in that plan is added to the 2018_STATS.CSV file. This file is produced in the DiPS folder and will be appended to throughout the year allowing detailed analysis to be completed on an on-going basis.

Information such as plan date, vehicle type, no. deliveries and % utilisation for shift and capacity is available in columns to enable distribution trends and performance to be conducted over periods or weeks, months or the full year as required.

The .CSV file can be opened in Excel if required and filters applied as required or the new Custom Reports can be employed instead. All the columns are listed below in the sequence they are written in the file and the headers are also detailed in a spreadsheet 2017_STATS_Headers.xlsx that can be found in the DiPS folder.

The first field contains the date and time the data was written to the file in the format yyyymmddhhmmss.
An example would be 20171221100933 where the data was written on 21/12/2017 at 11:09.33 am.
This may assist in identifying required data where multiple file entries are created for the same plan if callover is done more than once per day.

The second field contains the route departure date as dd/mm/yyyy and can be used to filter data to the required period for analysis.

A full list of the exported data fields appears below with the information based upon the columns available in the Route Summary tab.

Record No in file (when data is written)

Date

Depot

Day

DiPS Route Id (RnnnDxxx)

Trip No

Vehicle Id

Vehicles Type (Class)

Trailer Id

Trailer Class

Clock On

Clock Off

#Stops

#Calls

#Orders

No. of Days

Shift+OT Available

Shift Used

Shift % Utilisation

Unit1 Available

Unit1 Max

Unit1 % Utilisation

Unit2 Available

Unit2 Max

Unit2 % Utilisation

Work Time

Travel Distance

Travel Time

Break Time

Wait Time

Fleet No

Trip Tag

Trip Label

Callover Seq No

Callover Status

Driver Name

Mate #1 Name

Mate #2 Name

Crew Size

Driver Class

Driver Group

P1 Max (product 1 delivered)

P2 Max (product 2 delivered)

P3 Max etc..

P4 Max

P5 Max

P6 Max

P7 Max

P8 Max

P9 Max

P10 Max

P11 Max

P12 Max

Marginal Cost

Route Cost

Net Value

Carrier Name

Carrier Cost

Trip Maximum Shift Time

Trip Shift Time Used

Trip Maximum Travel Time

Trip Travel Time Used

Trip Work Time Used

Trip Travel Distance

Two new custom report files have been released - “2018 Yearly Statistics” which will allow a date filter to be applied to the file and an “All Data” rpt file which exports all the route records currently on the file. Please use the download link on the update page to obtain the 3 files required or alternatively contact us if you would like to be emailed copies of these files. They will be included within future full system installations.

Customer Area and Software Downloads

DiPS Help and Support Pages

DiPS Help Desk

Update for Main DiPS New Egotrip Program - M3 Update Link

This is the **January 2018 New Release** version of the New Egotrip program contained within a zip file.

Please download this file into the WIN folder within the main DIPS folder (normally found on local disk C:) and run an unzip routine to replace the existing M3.EXE file. Please ensure that the program is closed before any update is attempted.

Release Notes for January 2018 New Release Version - Release Notes Link

Download Link for 2018 Statistcs and Custom Report Files for Daily Planning used with January 2018 New Release Version - Download Files for DiPS Folder

Please download and unzip these files into the main DIPS folder (normally found on local disk C:)

Cost per Delivery and Call Statistics File

Alongside the Route Summary Data, Call Statistics and Cost per Drop information is also now saved automatically into files when routes are planned both on a daily basis and also strategically if required.

Each time routes are called over using the menu option File, Callover Routes to Mainframe (or specific company equivalent) summary data for each Call in that plan is added to a monthly file. Files are created in mmyyyy.csv format based on departure date (e.g. 042018.CSV for 1/4/18 -> 30/4/18) and written currently to the DIPS folder. Files will be appended to throughout the month allowing detailed analysis to be completed on an on-going basis with new files produced accordingly – 042018.CSV, followed by 052018.CSV and then 062018.CSV and so on).
For any Strategic Users, running the menu option will also produce a copy of the file – but called 000000.CSV

The data lines are at DiPS Account No level with multiple Orders accumulated as required.
A list of the fields is provided below with an explanation of any calculated values as necessary.

In order to produce a Cost per Drop and Cost per Unit calculation, route time is apportioned to each Call according to the time taken to complete delivery plus depot time, breaks and an element of the total travel time. This then allows the correct proportion of Cost to be allocated to each drop based upon the overall route cost figure.

If you require more information on any of the fields, please let us know by emailing support@dips.co.uk.

Field		Notes
1	**Date**	route departure date
2	**Depot**	Depot
3	**Route**	DiPS Route Number
4	**Vehicle ID**	
5	**Vehicle Capacity**	
6	**Driver Name**	
7	**Mate Name**	
8	**Account No**	DiPS Call ID
9	**Account Name**	Customer Name from Address line1
10	**Postcode**	full postcode
11	**Postcode Prefix**	first 4 characters of postcode
12	**Break**	total break time for this route / no of stops on this trip - then divided by total no of trips for this route
13	**Delivery Time**	total work time at call
14	**Wait Time**	wait time for this call (if any)
15	**Depot Time**	(sum of delivery unit1 for this call / total unit1 for this route) * total depot time for this route (work, pre and post shift work times added) - then divided by total no of trips for this route
16	**Travel Time**	(stem time for this call / Sum of all Calls' Stem Times on this route) * route total travel time
17	**Total Time**	sum of fields 12+13+14+15+16
18	**Distance**	(stem distance for this call / Sum of all Calls' Stem distances on this route) * route total travel distance
19	**Unit 1 Delivered**	sum of delivery unit1 for this call
20	**Cost per Drop**	(Total Time from field 17 / Shift Time) * Route Cost
21	**Cost per Unit**	(Cost per Drop) / Unit 1 Delivered field 20 / field19

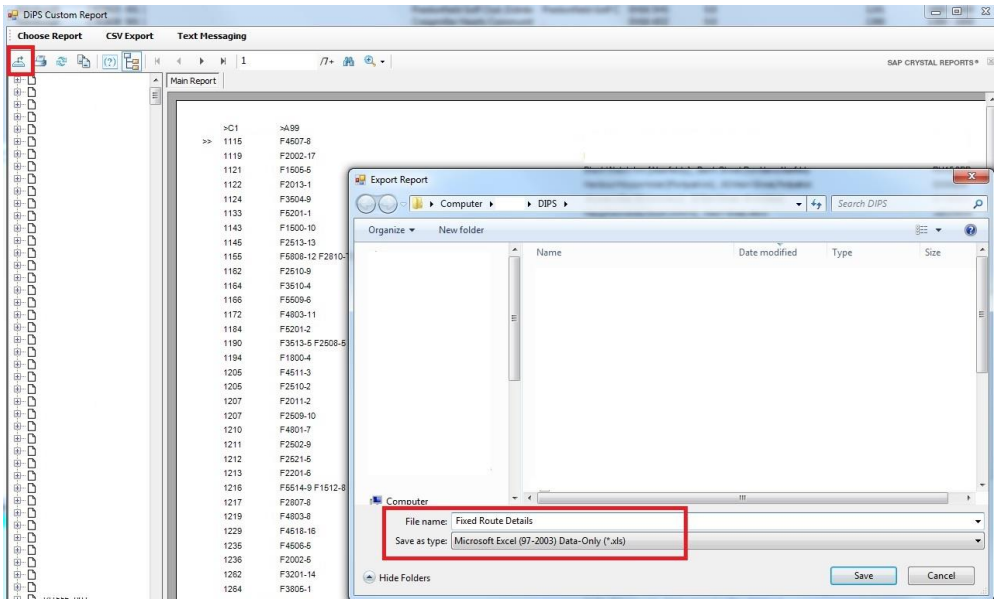
Showing Fixed Routes and Drop Sequence Information for Orders when Routing Daily

A new report and data load facility has been developed to enable fixed routes and the appropriate drop sequence for all calls to be displayed on screen whilst routing for a particular date. A custom report can be run and import spreadsheet produced from the current set of fixed routes.

The Fixed Route Info can show either individual days as separate columns or all the current fixed routes for any particular call with the drop sequence at the end. For any drops on the 2nd trip of a route the display will also show -T2- followed by the drop no and so on.

Go into Routes, Egotrip Mode and then use Fixed Route Menu option and show Routes.
To produce the spreadsheet import file, run Customised Routes menu option as normal and pick **Fixed Route Info.rpt**.

Once all the call data is displayed, save this file as a Microsoft Excel (Data Only) spreadsheet using the export option button on the top left.



This produces a file that can be used to load the current route-trip-drop information for all calls into the Pass Through Data section of each drop.

To load this data and replace an existing information, use the File menu, Load Data option.
Click File1 and then pick the saved spreadsheet, followed by Open and OK to load.

The route display relies upon attributes set within an XML display configuration file. Please contact us initially for more information about this feature if required.

If the new or updated XML file is in place, the column headers for the Green Deferred Panel should include “Fixed Route Info”. Add this to the list of headers in use and position as required. If the column header is not available, initially check the profile settings.

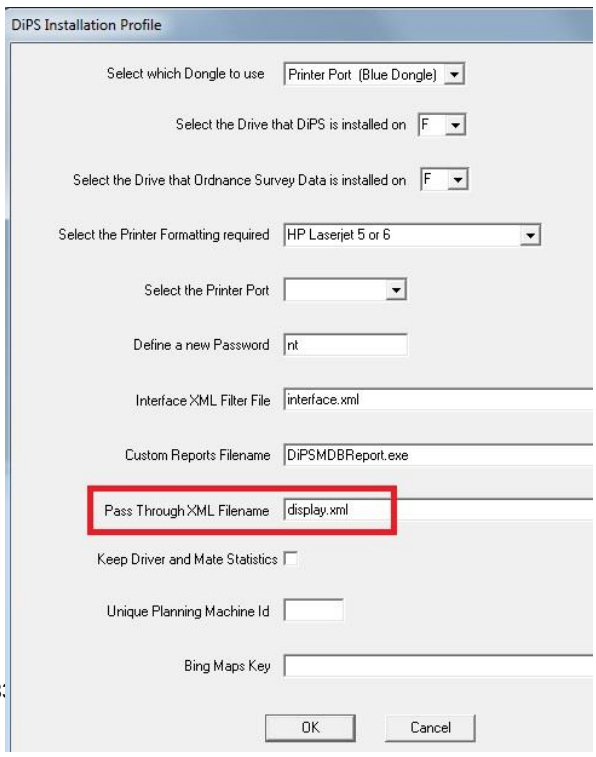
Click File Study Settings and then click on the Change Setup button.

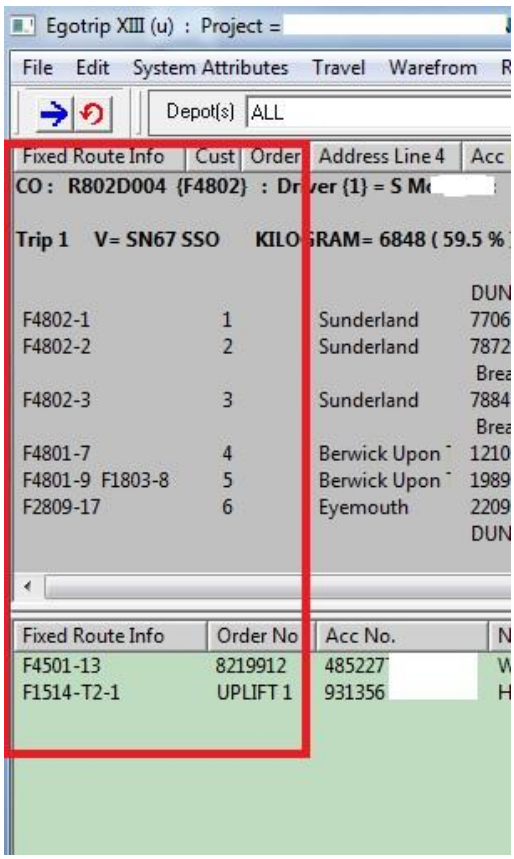
When the Installation Profile dialog appears, there should be an entry for the appropriate .XML in the field for Pass Through XML Filename.

If not please add it to make the new field visible and then click OK to Save.

The Fixed Route Info column can be added to any column display as necessary.

See below for examples with a route and the green deferred panel whilst routing.



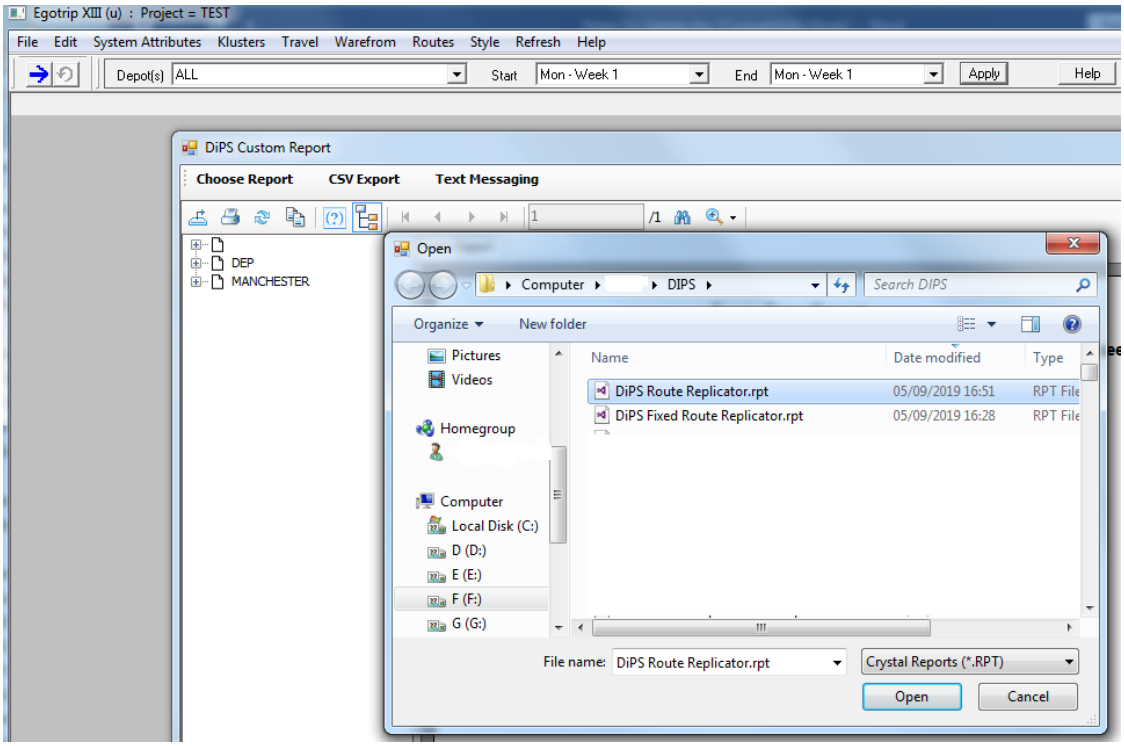


Please note that the Fixed Route Info is purely a text field and will not update if fixed routes are changed and updated. If the routes are changed, please repeat the export and import process using the Custom Report file as above to replace the previous details.

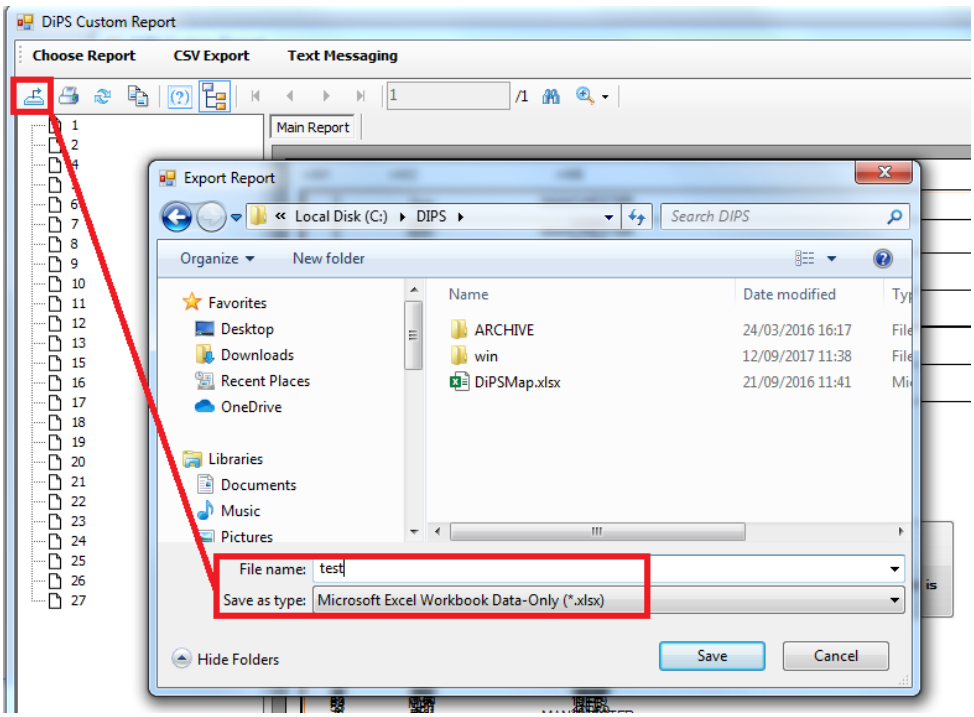
Route Replicator Custom Report to convert a single day plan into weekly routes

If a plan for a single day is completed in DiPS it is now possible to replicate this plan over a full week by using the relevant Custom reports file. For example a set of routes planned for say a Monday can be used to produce routes for all 7 days of the week on a spreadsheet that can be re-loaded back into DiPS to make up a weekly plan.

Complete the plan with a single day of the week set in the Start and End Days for the planning period and then run the Custom Reports option and choose the new file – DiPS Routes Replicator.rpt



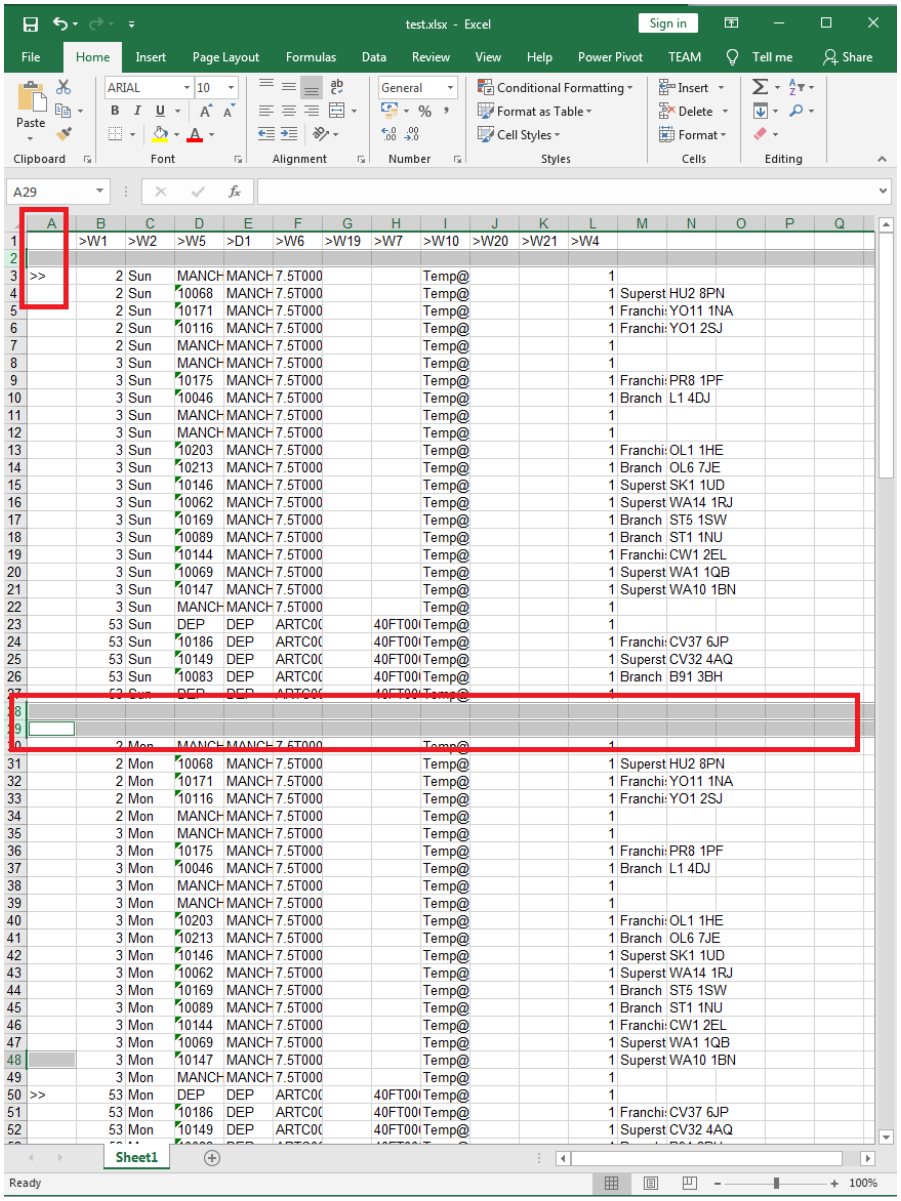
When the report has loaded data, use the Export button (top left) and change the Save as Type create an Excel spreadsheet (data only)



Once the Export Completed message has appeared, open the spreadsheet file and insert a new column A at the start for the >> markers. The data has routes for 7 days of the week Sun->Sat so either delete the rows that are not required or set the >> markers on the first and last row of data accordingly.

You'll also just need to go through the file and delete any blank data rows between the headers and Mon and also each day (Mon/Tue, Tue/Wed, Wed/Thu etc)

The >W headers on the first row will re-load the required route information as necessary. (see help section for more information on these headers if required.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1		>W1	>W2	>W5	>D1	>W6	>W19	>W7	>W10	>W20	>W21	>W4					
2																	
3	>>	2	Sun	MANCH	MANCH	7.5T000			Temp@			1					
4		2	Sun	10068	MANCH	7.5T000			Temp@			1	Superst	HU2 8PN			
5		2	Sun	10171	MANCH	7.5T000			Temp@			1	Franchi	YO11 1NA			
6		2	Sun	10116	MANCH	7.5T000			Temp@			1	Franchi	YO1 2SJ			
7		2	Sun	MANCH	MANCH	7.5T000			Temp@			1					
8		3	Sun	MANCH	MANCH	7.5T000			Temp@			1					
9		3	Sun	10175	MANCH	7.5T000			Temp@			1	Franchi	PR8 1PF			
10		3	Sun	10046	MANCH	7.5T000			Temp@			1	Branch	L1 4DJ			
11		3	Sun	MANCH	MANCH	7.5T000			Temp@			1					
12		3	Sun	MANCH	MANCH	7.5T000			Temp@			1					
13		3	Sun	10203	MANCH	7.5T000			Temp@			1	Franchi	OL1 1HE			
14		3	Sun	10213	MANCH	7.5T000			Temp@			1	Branch	OL6 7JE			
15		3	Sun	10146	MANCH	7.5T000			Temp@			1	Superst	SK1 1UD			
16		3	Sun	10062	MANCH	7.5T000			Temp@			1	Superst	WA14 1RJ			
17		3	Sun	10169	MANCH	7.5T000			Temp@			1	Branch	ST5 1SW			
18		3	Sun	10089	MANCH	7.5T000			Temp@			1	Branch	ST1 1NU			
19		3	Sun	10144	MANCH	7.5T000			Temp@			1	Franchi	CW1 2EL			
20		3	Sun	10069	MANCH	7.5T000			Temp@			1	Superst	WA1 1QB			
21		3	Sun	10147	MANCH	7.5T000			Temp@			1	Superst	WA10 1BN			
22		3	Sun	MANCH	MANCH	7.5T000			Temp@			1					
23		53	Sun	DEP	DEP	ARTC00		40FT00	Temp@			1					
24		53	Sun	10186	DEP	ARTC00		40FT00	Temp@			1	Franchi	CV37 6JP			
25		53	Sun	10149	DEP	ARTC00		40FT00	Temp@			1	Superst	CV32 4AQ			
26		53	Sun	10083	DEP	ARTC00		40FT00	Temp@			1	Branch	B91 3BH			
27		53	Sun	DEP	DEP	ARTC00		40FT00	Temp@			1					
28																	
29																	
30		2	Mon	MANCH	MANCH	7.5T000			Temp@			1					
31		2	Mon	10068	MANCH	7.5T000			Temp@			1	Superst	HU2 8PN			
32		2	Mon	10171	MANCH	7.5T000			Temp@			1	Franchi	YO11 1NA			
33		2	Mon	10116	MANCH	7.5T000			Temp@			1	Franchi	YO1 2SJ			
34		2	Mon	MANCH	MANCH	7.5T000			Temp@			1					
35		3	Mon	MANCH	MANCH	7.5T000			Temp@			1					
36		3	Mon	10175	MANCH	7.5T000			Temp@			1	Franchi	PR8 1PF			
37		3	Mon	10046	MANCH	7.5T000			Temp@			1	Branch	L1 4DJ			
38		3	Mon	MANCH	MANCH	7.5T000			Temp@			1					
39		3	Mon	MANCH	MANCH	7.5T000			Temp@			1					
40		3	Mon	10203	MANCH	7.5T000			Temp@			1	Franchi	OL1 1HE			
41		3	Mon	10213	MANCH	7.5T000			Temp@			1	Branch	OL6 7JE			
42		3	Mon	10146	MANCH	7.5T000			Temp@			1	Superst	SK1 1UD			
43		3	Mon	10062	MANCH	7.5T000			Temp@			1	Superst	WA14 1RJ			
44		3	Mon	10169	MANCH	7.5T000			Temp@			1	Branch	ST5 1SW			
45		3	Mon	10089	MANCH	7.5T000			Temp@			1	Branch	ST1 1NU			
46		3	Mon	10144	MANCH	7.5T000			Temp@			1	Franchi	CW1 2EL			
47		3	Mon	10069	MANCH	7.5T000			Temp@			1	Superst	WA1 1QB			
48		3	Mon	10147	MANCH	7.5T000			Temp@			1	Superst	WA10 1BN			
49		3	Mon	MANCH	MANCH	7.5T000			Temp@			1					
50	>>	53	Mon	DEP	DEP	ARTC00		40FT00	Temp@			1					
51		53	Mon	10186	DEP	ARTC00		40FT00	Temp@			1	Franchi	CV37 6JP			
52		53	Mon	10149	DEP	ARTC00		40FT00	Temp@			1	Superst	CV32 4AQ			

Once amended as required, save the file and you'll have a set of routes for each of the days ready to create them in DiPS to add to the original planned routes for the one day. Don't forget to delete any other routes that aren't required from the study in Kingpin Mode before loading the file in the normal way using File, Study menu options to Load Spreadsheet.

Fixed Routes

A complementary report is also available to allow the replication of Fixed Routes over a week too.

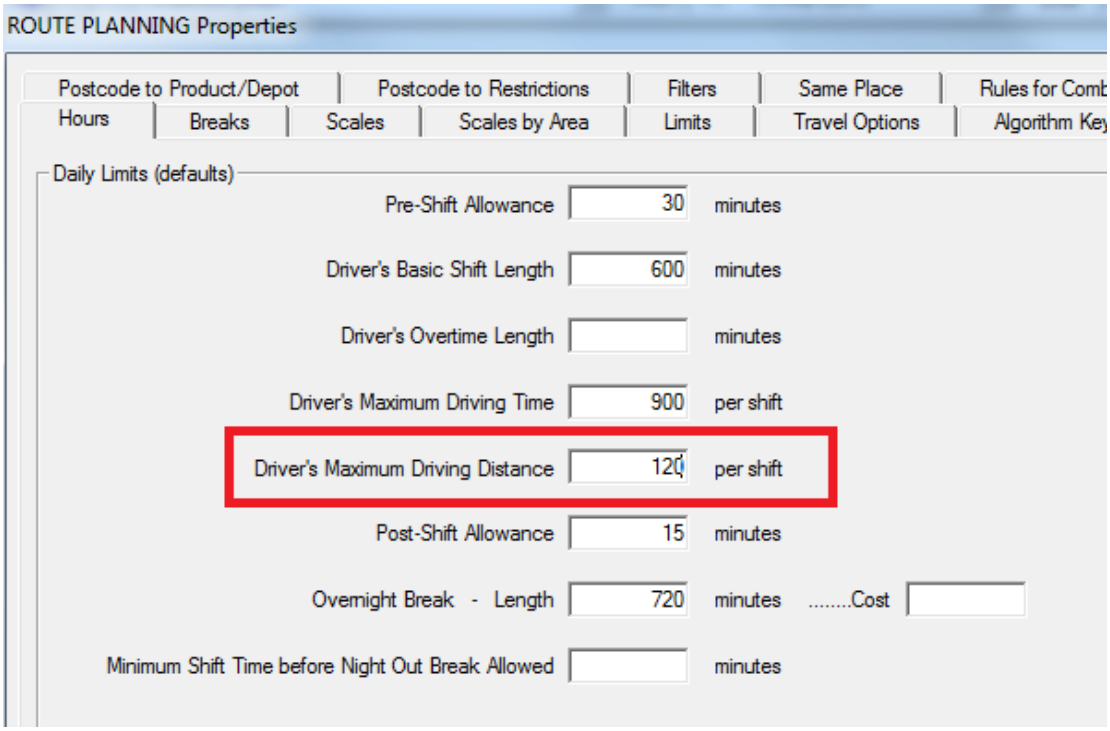
Complete the plan with a single day of the week set in the Start and End Days for the planning period and then run the Custom Reports option and choose the new file – **DiPS Fixed Routes Replicator.rpt**

The function works exactly as above but will have >F headers rather than >W.

Planning Electric Vehicles

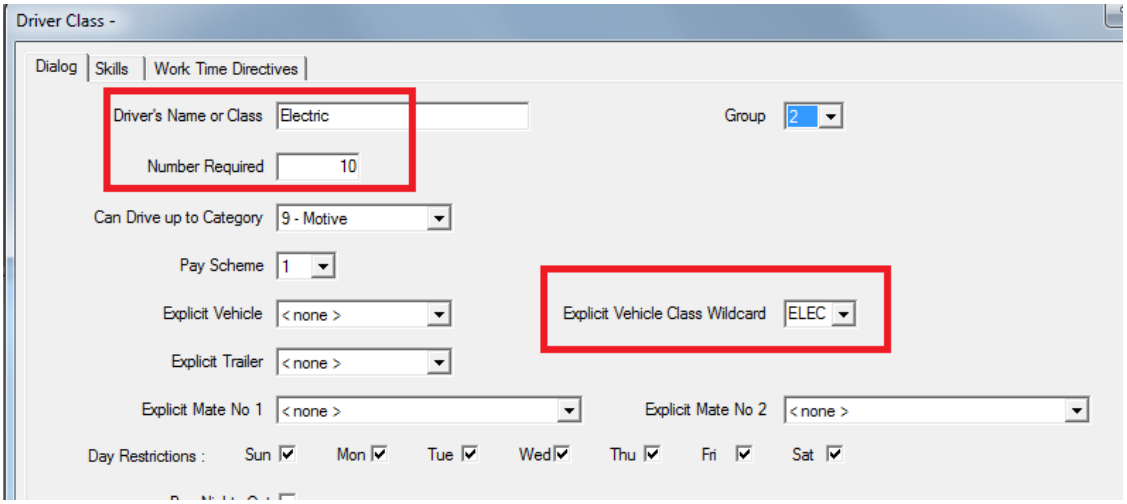
Planning electric vehicles or any other resources with range limitations can easily be achieved using the Maximum Driving Distance Settings in DiPS.

On the Routes menu, Parameters dialog, Hours tab is a setting for Driver's Maximum Driving Distance which by default can be applied to all routes. This will suffice if all vehicle types to be planned in the study are of the same electric type with limited range. As an example setting the maximum range to 120 miles will limit all routes produce by the routing programs to this level (see below).

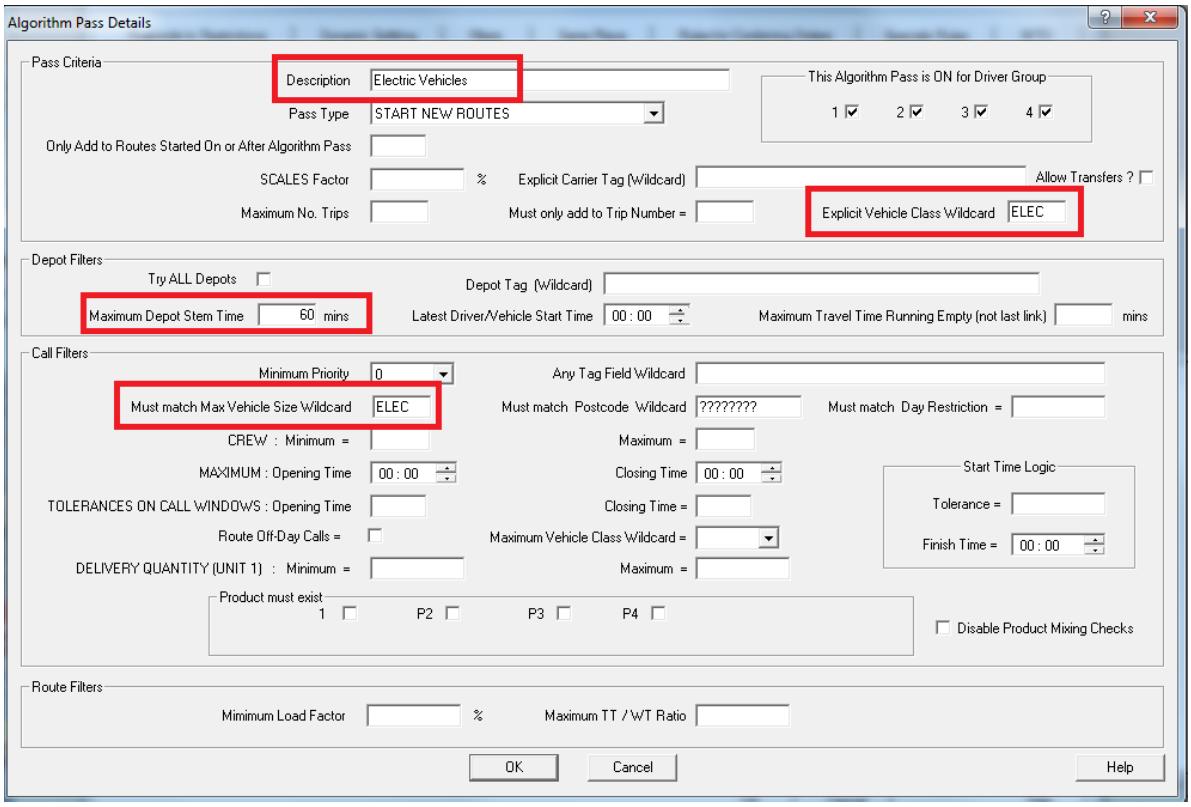


In situations where a mixed fleet is in operation, creating individual driver classes with specific requirements will enable some routes to be limited whilst others are planned freely.

On the depot, Drivers tab create a new driver type (e.g. Electric) and set the number required to match the electric fleet. To set these drivers to a particular vehicle type, use the Explicit Vehicle Class Wildcard setting to the required vehicle class (created in the normal way). Finally add the Maximum Driving Distance on the Work Time Directives tab as above.



To route drops in a limited area, either set the required drops to have an Explicit Vehicle class of say "ELEC" on the Vehicle tab (use the >R11 spreadsheet header if appropriate) or use a specific Algorithm Pass with a defined Explicit Vehicle Class and Maximum Depot Stem Time or Vehicle Size setting (see below as an example)


Algorithm Pass Details
Pass Criteria
Description
Electric Vehicles
Pass Type
START NEW ROUTES
This Algorithm Pass is ON for Driver Group
1 2 3 4
Only Add to Routes Started On or After Algorithm Pass
SCALES Factor
%
Explicit Carrier Tag (Wildcard)
Allow Transfers ?
Maximum No. Trips
Must only add to Trip Number =
Explicit Vehicle Class Wildcard
ELEC
Depot Filters
Try ALL Depots
Depot Tag (Wildcard)
Maximum Depot Stem Time
60
mins
Latest Driver/Vehicle Start Time
00 : 00
Maximum Travel Time Running Empty (not last link)
mins
Call Filters
Minimum Priority
0
Any Tag Field Wildcard
Must match Max Vehicle Size Wildcard
ELEC
Must match Postcode Wildcard
????????
Must match Day Restriction =
CREW : Minimum =
Maximum =
MAXIMUM : Opening Time
00 : 00
Closing Time
00 : 00
Start Time Logic
TOLERANCES ON CALL WINDOWS : Opening Time
Closing Time =
Tolerance =
Route Off-Day Calls =
Maximum Vehicle Class Wildcard =
Finish Time =
00 : 00
DELIVERY QUANTITY (UNIT 1) : Minimum =
Maximum =
Product must exist
1 P2 P3 P4
Disable Product Mixing Checks
Route Filters
Mimimum Load Factor
%
Maximum TT / WT Ratio
OK
Cancel
Help

Using Warefrom Mode for estimated distances and times in varying scenarios

This section will explain how to use Warefrom Mode to produce better estimates for distance and time values in the Depot Resources section rather than rely on each depot to be routed individually beforehand. Warefrom analysis can then be undertaken with different network changes to ascertain productivity for new depots or locations.

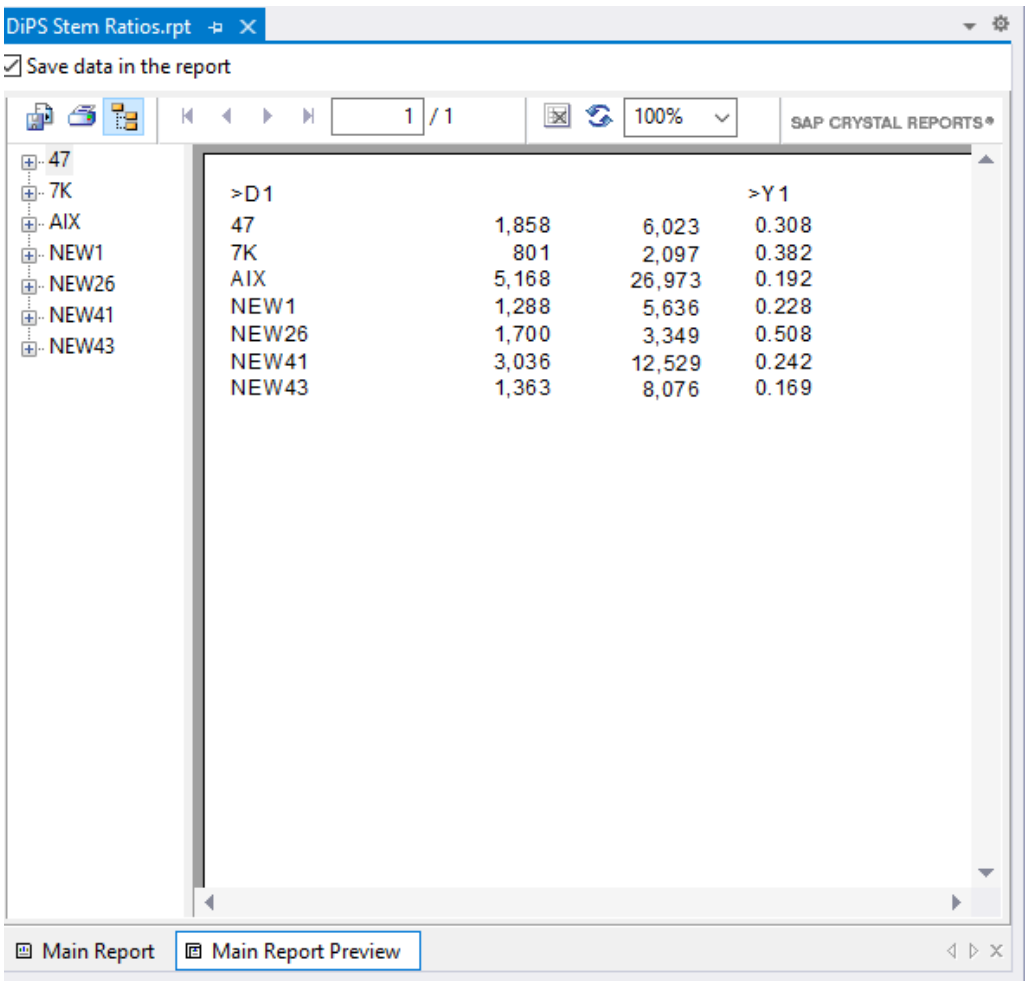
The depot screen Warefrom tab contains two items of data used by Warefrom - the Stem Ratio and Stem Time fields. The Depot Stem Ratio is applied to the times/distances for the depot in question which are produced by Warefrom, giving results which are meant to be closer to the more detailed Vanguard runs.

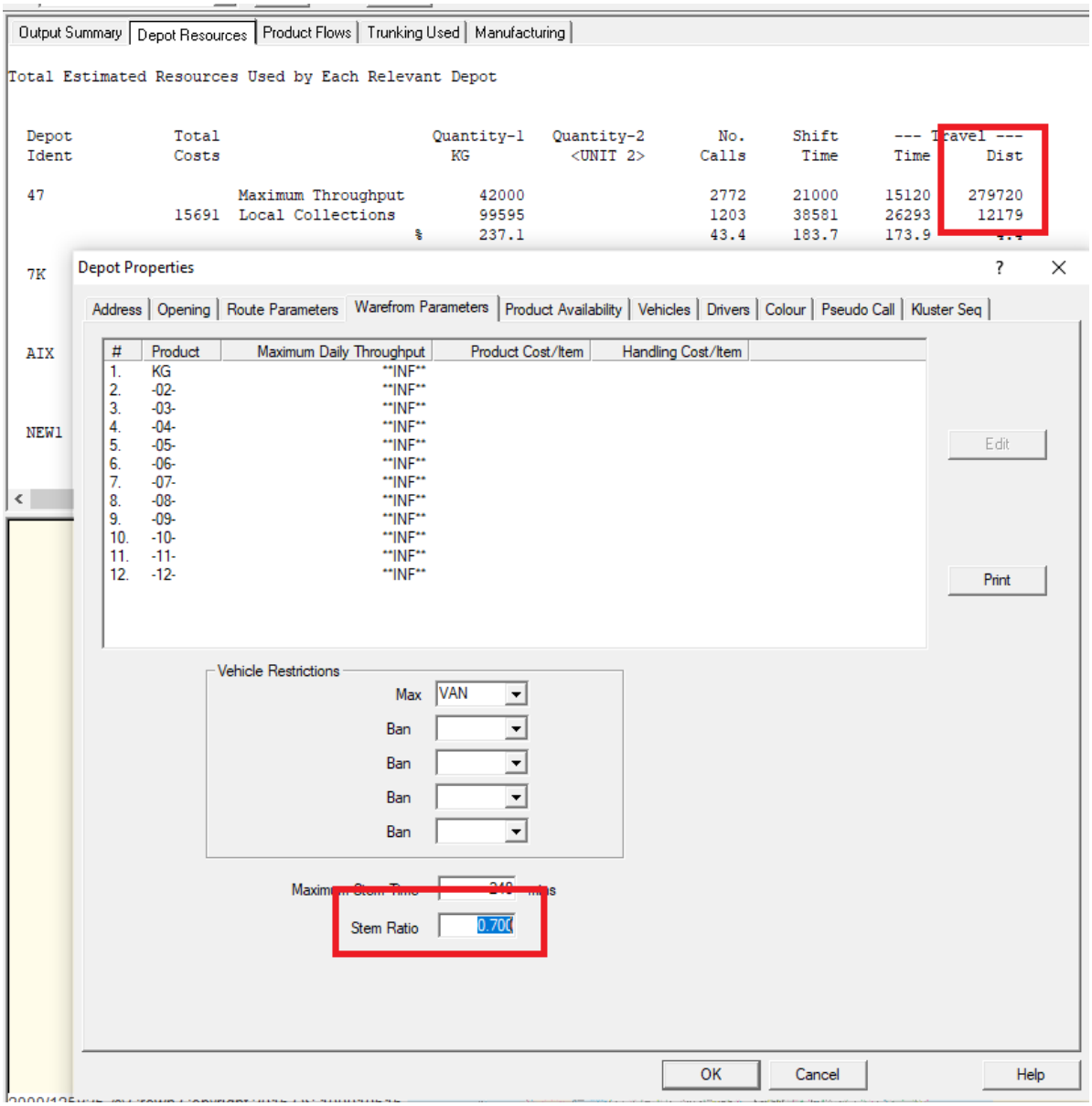
The Stem Ratio for a depot may be obtained by running Vanguard, where it is given as the ratio of total distance driven by all Vanguard routes to the total of stem distances for all calls. Stem distance in DiPS is the one-way travel time/distance from the depot to that call.

It is important to remember that a depot with a Stem Ratio which is lower than that of another depot will produce a lower distance figure. For example, where a call is say 100 miles away, the depot with a ratio of 0.6 will have an estimated distance of 60 miles whereas another ratio of 0.7 will be 70 miles. The main function of the Stem Ratio is to take inter-drop travel into account within Warefrom.

To see the Stem ratio for depots with routes use the Routes menu, Customised Reports option and then choose the new report – DiPS Stem Ratios.rpt

This will produce a table of depots and the required stem ratio which can also be exported to Excel and re-loaded to import values in bulk.





Using the updated Stem Ratio figures or an equivalent or average value for a depot should ensure that the Travel Distance estimated figure in Warefrom Mode is closer to the actual routed value than the figure calculated using the depot Default Value of 0.7.