User Guide

for

STACC Base Station Software

Version 5.3

We recommend that the STACC Telematics Unit (STU), its peripheral items and the Base-Station modem are installed and tested before running STACC. Please see the separate instructions provided to you, if you are conducting your own installation.

Contents

1 INTRODUCTION TO STACC

1.1 What is STACC?

STACC, **S**atellite **T**racking **A**utomated **C**ommand **C**onsole, is an Automated Location System (ALS) comprising of four main elements:

- **Mobile components**
- **Communication components**
- **Base-station software**
- **Digital mapping**

A ruggedised GPS and microprocessor on board a mobile unit provides advanced distributed intelligence, which analyses data from vehicle based sensors or data. A Base Station PC acquires this data, or data from Benefon GPS mobiles, when scheduled, on demand or when predetermined conditions exist. The base station software collates, analyses and exploits the data. The information may be transmitted to a base station by radio, cellular or satellite telephone link.

A dedicated PC is the preferred option for running the Base Station software. STACC requires either Microsoft Windows XP or Windows 2000 Professional as an Operating System. Digital mapping is selected according to the users specific demands. The Base Station may be at any selected location, not necessarily at the unit's home base. The Base Station collates and analyses data from mobile units, acting as the interface for the system supervisor.

When using the standard STU unit, the system allows up to 15 base stations to monitor and download data from the same unit. Each unit will be assigned as a Primary unit to a specific base station. All other base stations will be able to view the unit data as a Secondary unit. A base station can send messages and receive replies and reports from its own Primary units. It also controls the data logging interval and emergency call number. The emergency calls can be directed to any base station. A Base station can only send messages and receive replies from its own Primary units. It is not possible to use the messaging functions with Secondary units

Map data at various scales and detail is available for almost every country in the world. MapInfo MapX provides mapping support for STACC, allowing a wide variety of map formats to be used.

1.2 What can STACC do?

The STACC Base station initiates mobile data calls to STACC units in the field. Data is downloaded and logged from these units by the Base Station. Information can be displayed in various formats and reports can be post processed to interpret and analyse the stored data.

1.2.1 Data Presentation.

The **Map Screen** provides a map display showing the latest known downloaded positions, with time tags, for all the units being tracked.

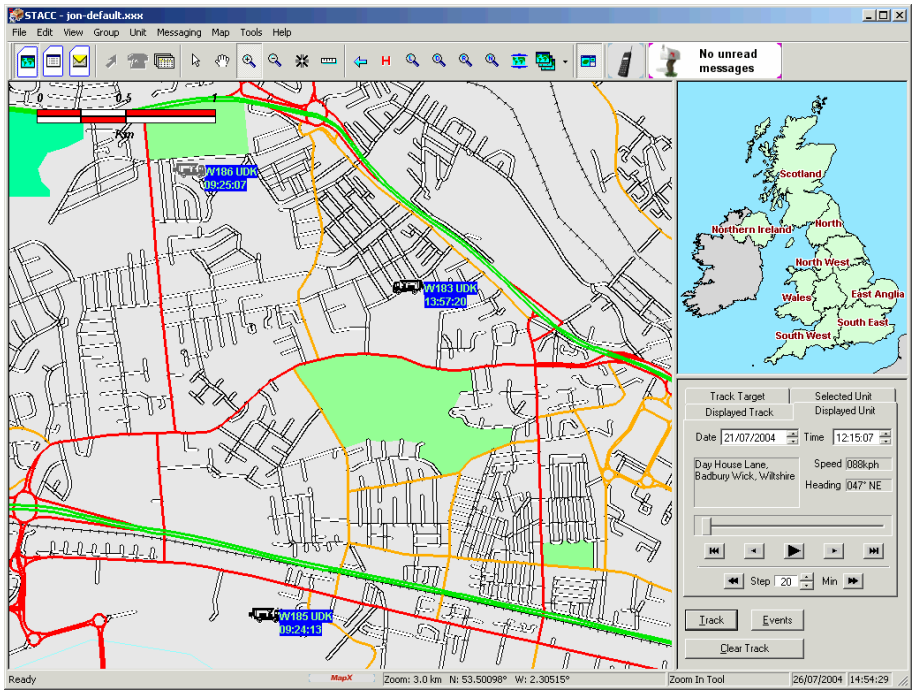


Figure 1-1 Map Screen

A journey can be re-played for analysis using the **View Track** function.

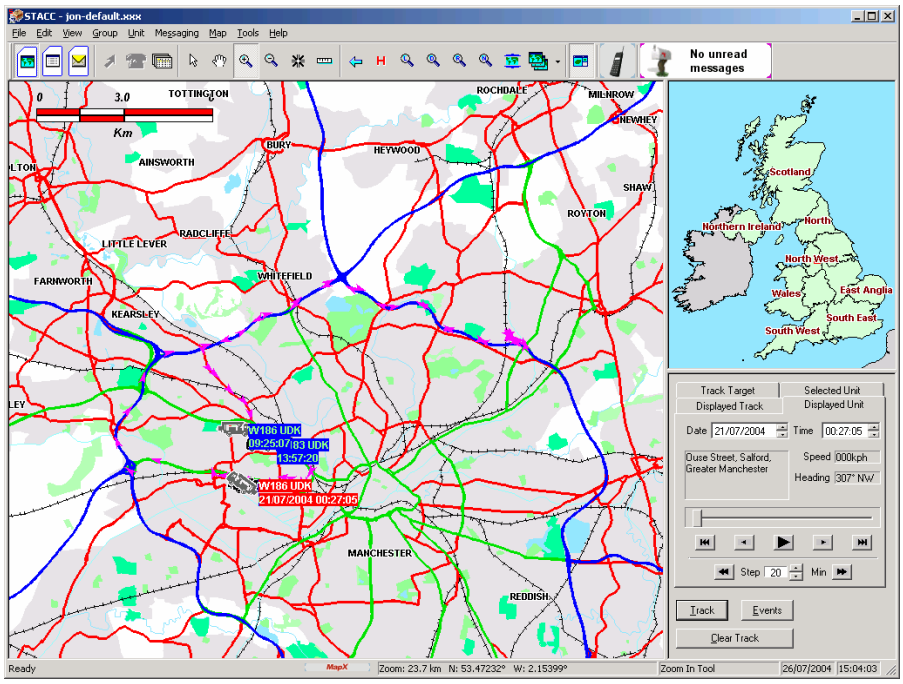


Figure 1-2 Map Screen with Track Display

The **Overview** map indicates the area of the map that is being viewed in detail in the main area. The **Track** view is used to initiate tracking and data analysis.

The latest known time marked position, the status of the last call made and the time of the next scheduled call, for all units, is shown in the **Tote Screen**.

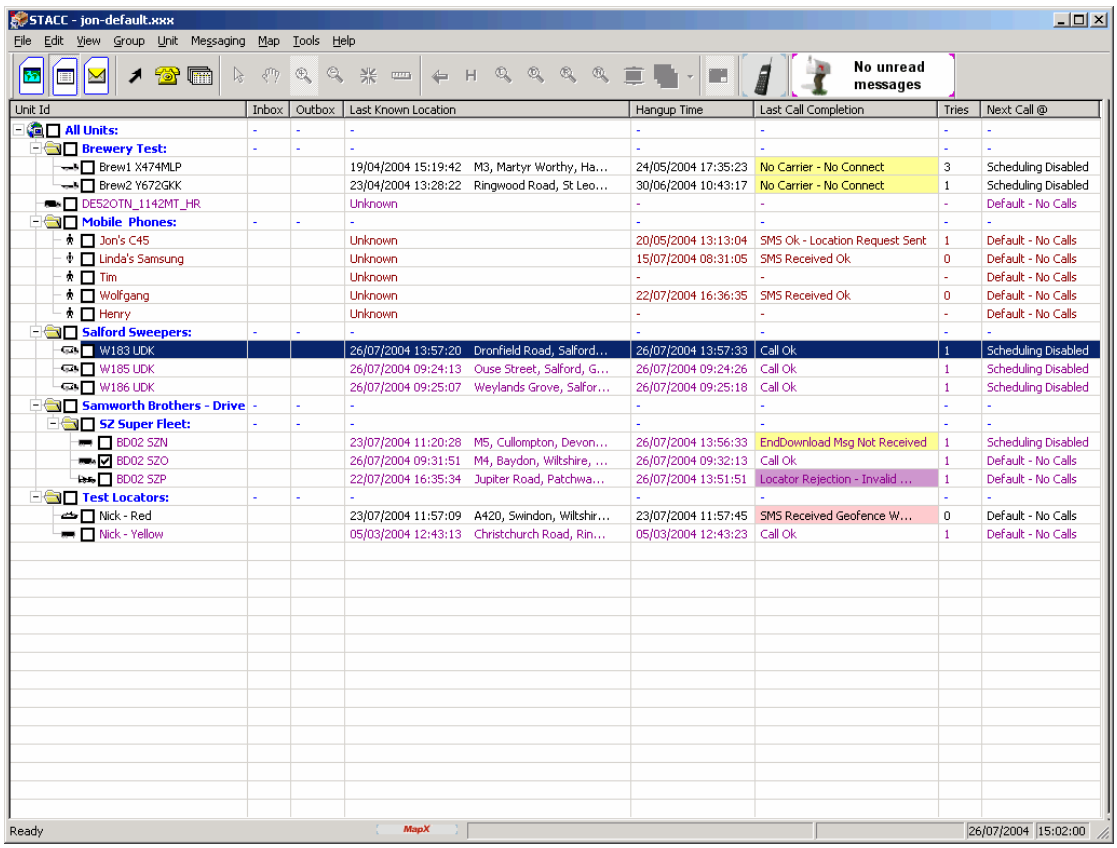


Figure 1-3 Tote Screen

1.2.2 Calling Units.

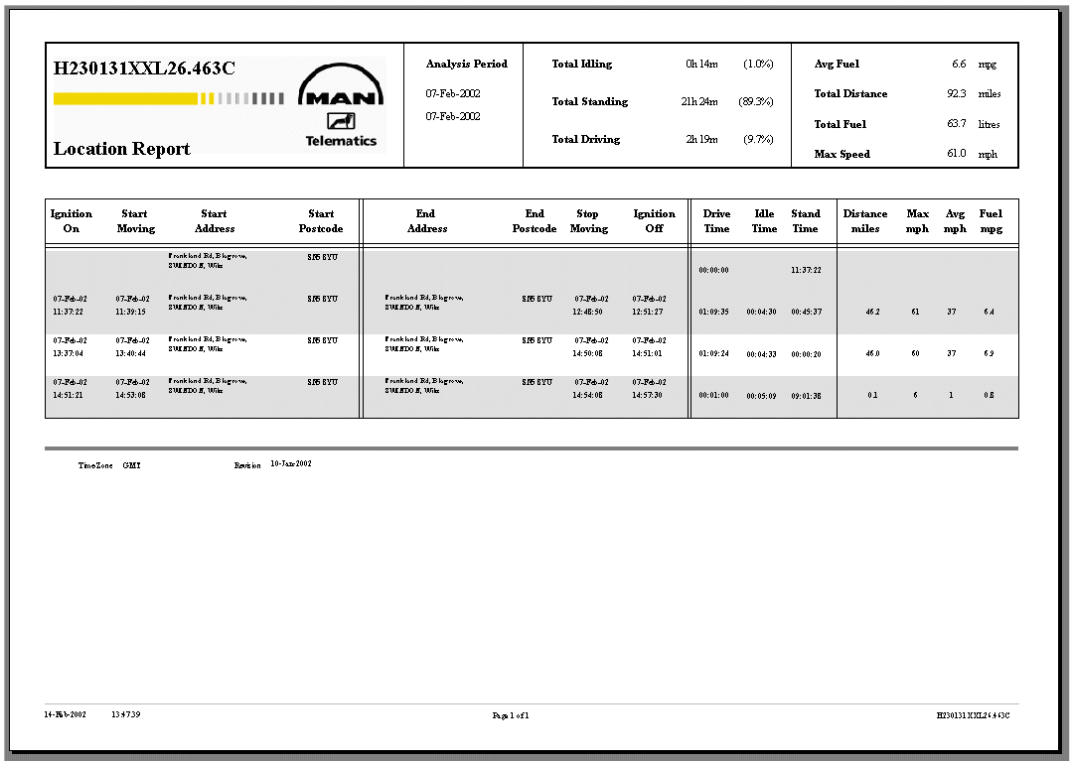
STACC can be pre-set with a number of different calling schedules, allowing units to be automatically contacted at predetermined intervals. At any time individual or selected groups of units can be manually called. Units can be called directly from the **Map** or **Tote Screens.**

1.2.3 Messaging, Driver Reporting, SMS and Voice calls.

If a unit is fitted with an In Cab Display messages can be sent from the Base Station to individual or selected groups of units. The driver can respond with replies pre-set by the Base Station. In addition drivers can send the base station pre-set reports at any time. STACC allows the user to pre-set a total of 32 responses to messages or pre-set driver reports. The user can change this at any time. A small interface can be fitted to allow mobile voice calls to be received and made to pre-programmed phone numbers. Additionally, a keypad can be added to the newest type of In Cab Display, allowing drivers to dial any number (usefull for calling ahead on delivery / collection runs). SMS messages can be sent and received by the STACC Base Station.

1.2.4 Reports.

Reports can be produced from downloaded unit data. This data may also be exported in various formats for use with other data analysis programs, such as Microsoft Excel.



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Location Report

MAN Telematics

Analysis Period		Total Idling	0h 14m	(1.0%)	Avg Fuel	6.6	mpg
07-Feb-2002		Total Standing	21h 24m	(89.3%)	Total Distance	92.3	miles
07-Feb-2002		Total Driving	2h 19m	(9.7%)	Total Fuel	63.7	litres
					Max Speed	61.0	mph

Ignition On	Start Moving	Start Address	Start Postcode	End Address	End Postcode	Stop Moving	Ignition Off	Drive Time	Idle Time	Stand Time	Distance miles	Max mph	Avg mph	Fuel mpg
		Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU					00:00:00		11:37:22				
07-Feb-02 11:37:22	07-Feb-02 11:39:15	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	07-Feb-02 12:48:50	07-Feb-02 12:51:27	01:09:35	00:04:30	00:45:37	46.2	61	37	6.4
07-Feb-02 13:37:04	07-Feb-02 13:40:44	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	07-Feb-02 14:50:08	07-Feb-02 14:51:01	01:09:24	00:04:33	00:00:20	46.0	60	37	6.9
07-Feb-02 14:51:21	07-Feb-02 14:53:08	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	07-Feb-02 14:54:08	07-Feb-02 14:57:30	00:01:00	00:05:09	09:01:38	0.1	6	1	0.8

TimeZone GMT Revision 10-Jan-2002

14-Feb-2002 13:47:39 Page 1 of 1 H230131XXL26.463C

Figure 1-4 Location Report

1.2.5 Emergency Calls.

Alarm systems can be fitted to a unit allowing the driver to trigger emergency messages. When the alarm is triggered, an emergency message will be sent to the Base Station. The user is then required to acknowledge the emergency.

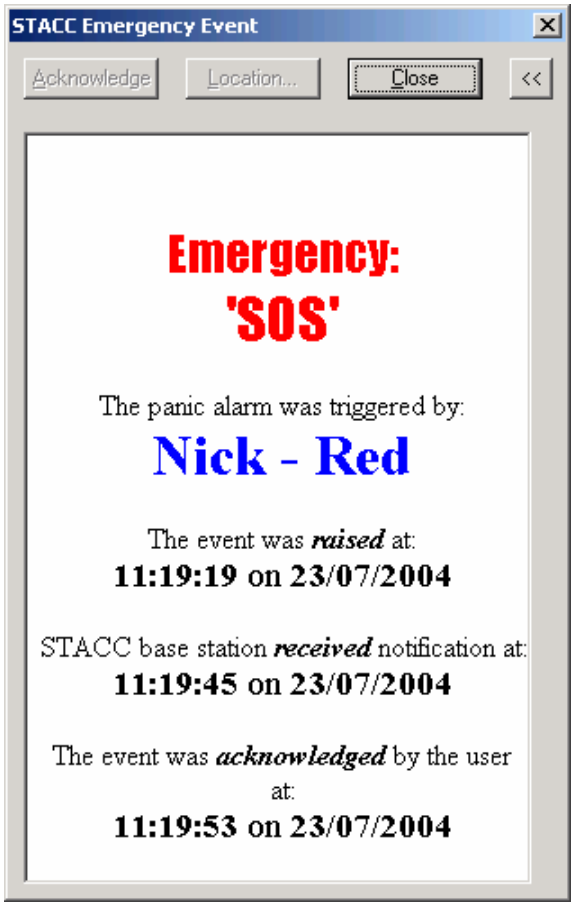


Figure 1-5 Emergency Event Dialog

2 SOFTWARE SETUP

2.1 Installation of STACC Software

The STACC installation CD contains all the necessary files and Map Data for your Base Station Installation. To install STACC; first, ensure that all programmes running on your PC are shut down. Then insert CD in disk drive.

Double click on **My Computer.**

Double click on **CD Drive**.

Double click on Stacc-<Version Number>-Setup"

Figure 2-1 Welcome Dialog

To proceed with the installation.

You need to accept the license agreement in order to use the software.

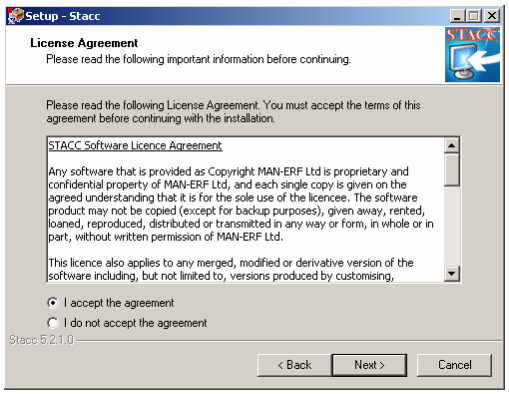


Figure 2-2 License Agreement

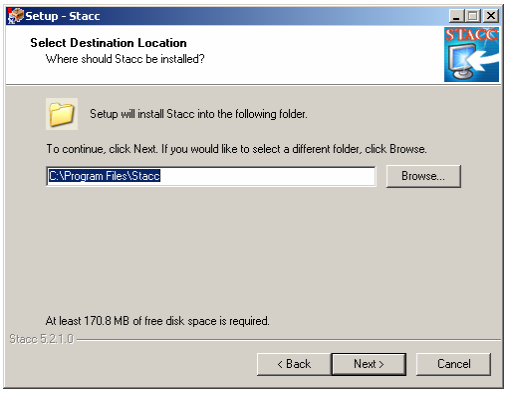


Figure 2-3 Select Destination Location

Use **Select Destination Directory** to choose the destination for STACC Application. By default, the destination folder for the STACC Application will be **C:\Program Files\Stacc**. The user may wish to change the location.

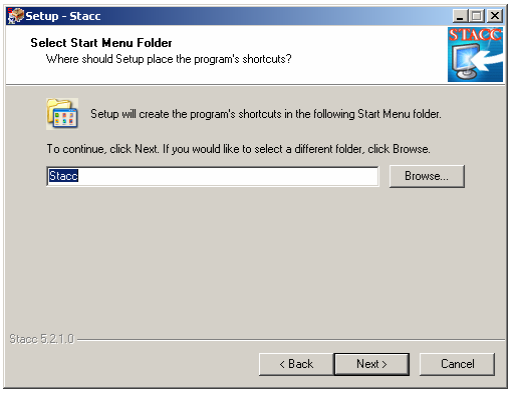


Figure 2-4 Select Start Menu Folder

Select Start Menu Folder can be used to set the name and/or location of the STACC Application icons within the Start Menu.

With the **Select Additional Tasks** options, you can choose whether or not to create icons on your desktop and Quick Launch toolbar (if used). You can also select your choice of **Company Name** in order to use the appropriate branding both within the software and on reports.

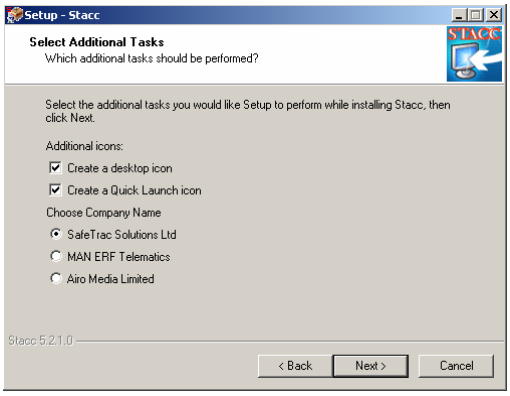


Figure 2-2 Choose your company name

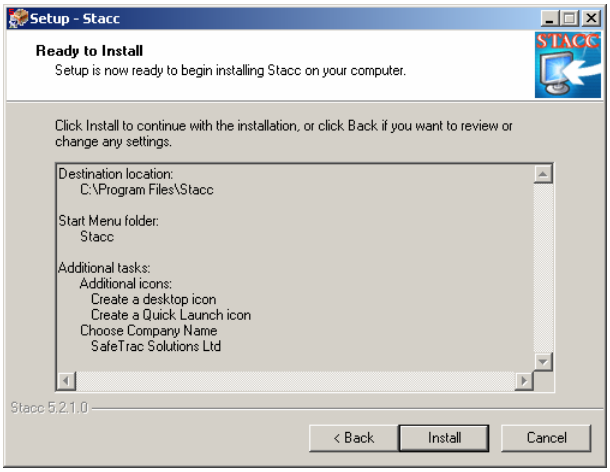


Figure 2-3 Finish Dialog

Ready to Install displays a summary of the installation options you have chosen. Pressing **'Next'** will start copying files onto your computer.

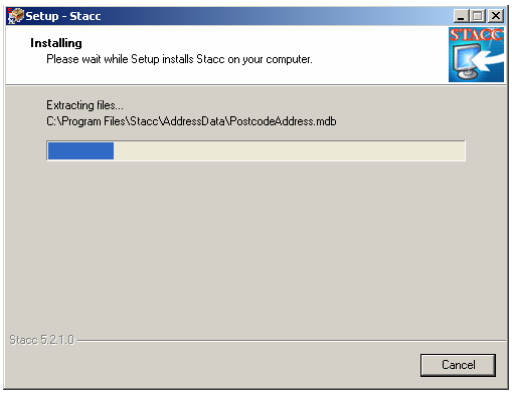


Figure 2-7 Installing

When the file copying has finished, you will be presented with another short procedure to install the map data. There are no options to choose, so just press **'Next'** and then **'Install'**.

Fig 2-7 Map setup

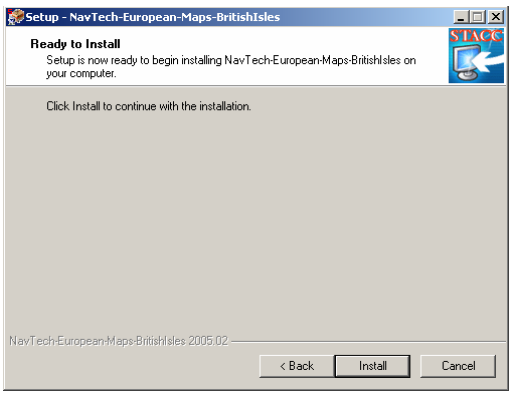


Fig 2-8 Ready to install maps

When the map install routine has finished copying files, press **'Finish'** to return to the main install program.

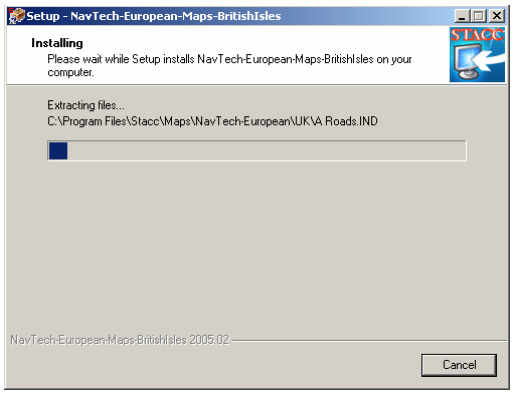


Fig 2-9 Installing maps

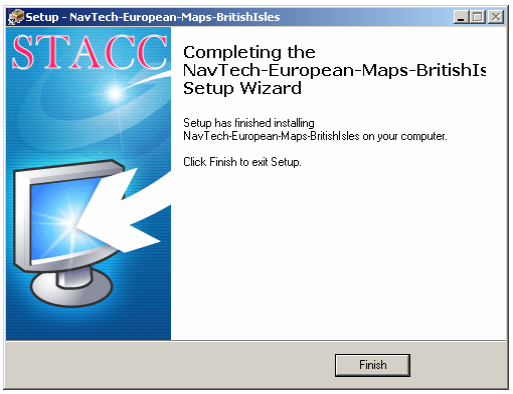


Fig 2-10 Map installation complete

To finish the installation select **'Finish'** on this final page of the **Stacc Setup Wizard.** If you do not want to run Stacc now, clear the tick-box.

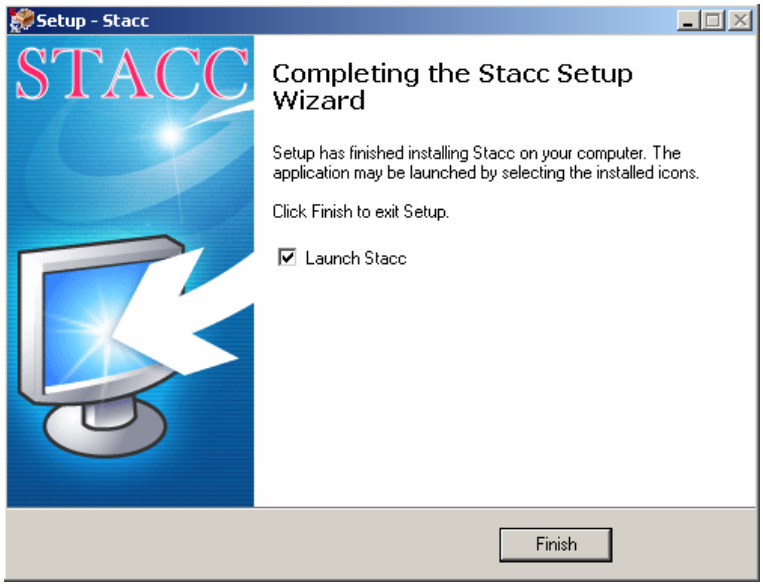


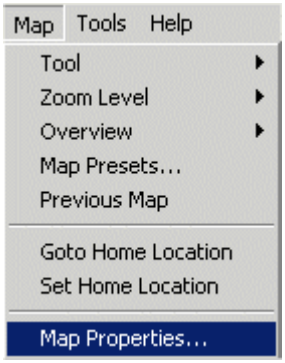
Fig 2-11 Installation Complete

2.2 Using the STACC Map Layer Control

STACC can display any maps that you may have in MapInfo ".TAB" format. If you have maps in any other format, then please contact Service at any time, who will be pleased to provide you with advice on how to convert these to the required format.

2.2.1 Adding New Maps to STACC

To add new maps to your STACC map view select **Map properties** from **Map menu**.



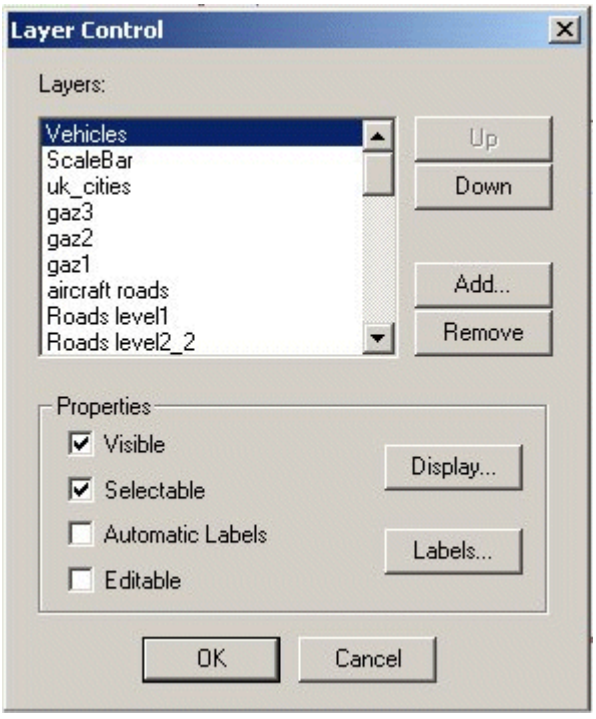


Figure 2-11 Layer Control Dialog

To add new map Layer.

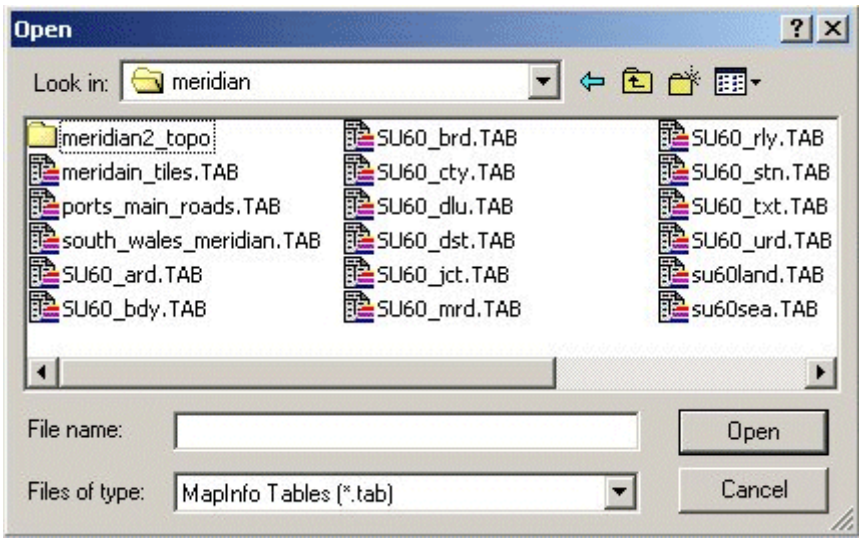


Figure 2-12 Open Dialog

Browse as with any other Windows-based program to select the map layer you wish to use.

Open To add the new map layer to the existing list of map layers.

Depending on the type of data in this map layer (i.e. whether it is mainly points, lines or areas), STACC will put it in the what it believes to be the most appropriate position in the list of existing maps. Maps consisting of mainly points (such as city names etc.) will appear near the top of the list, those consisting of lines (such as roads) will appear in the middle, and area layers (such as those showing counties or countries) will appear towards the bottom of the list.

OK To remove the Map Layers Dialog.

2.2.2 Removing Maps from STACC

To remove any map layer from STACC. Select **Layer Control** as in **2.2.1.** Click on the map layer you wish to remove.

Remove To remove selected map layer.

OK To remove the Map Layers Dialog.

Do not remove or alter the position of the "Vehicles" or "ScaleBar" layers as this will affect the way in which STACC works.

2.2.3 Moving Layers

The position of the layers in the list determines its draw order – this is the order in which layers are stacked onto each other (the blue sea is at the bottom as everything else is drawn on top, whereas place names are at the top as they are drawn over any roads or area shading). This order can be changed. To do this, select **Layer Control** as in **2.2.1.** Click on the map layer you wish to move.

Up
Down To move selected layer.

OK To remove the Map Layers Dialog.

2.2.4 Showing a Layers Labels

MapInfo tables (the map layers) are simply database tables with geographic objects (points, lines or areas) assigned to each item. If there is associated text then this can be displayed.

To display labels. Select **Layer Control** as in **2.2.1.** Click on the map layer of which labels are to be displayed.

To change label style

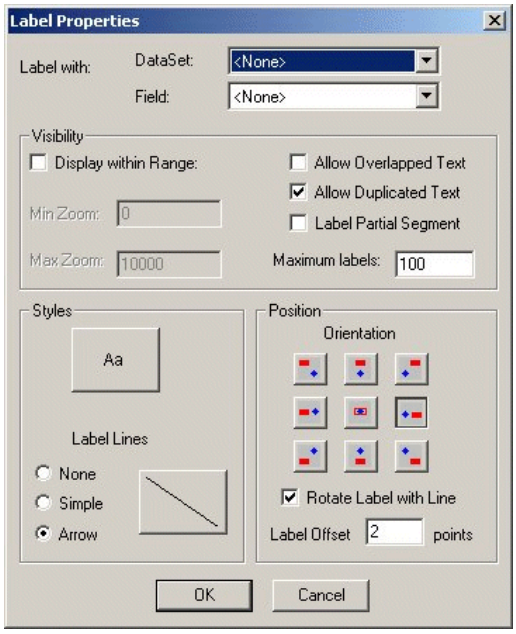
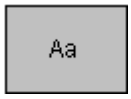


Figure 2-13 Label Properties Dialog

Use the **Visibility** check boxes to govern how the labels appear. For example, adding a tick to the **Display within Range** box will allow the label to appear at certain zoom settings and not at others.

It is possible to dictate where the label appears in relation to the object by choosing one of the **Position** settings, and also by the **Label Offset**. This will move the text the

chosen number of points away from the object in the chosen direction.



To access **Text Style** and edit text style.

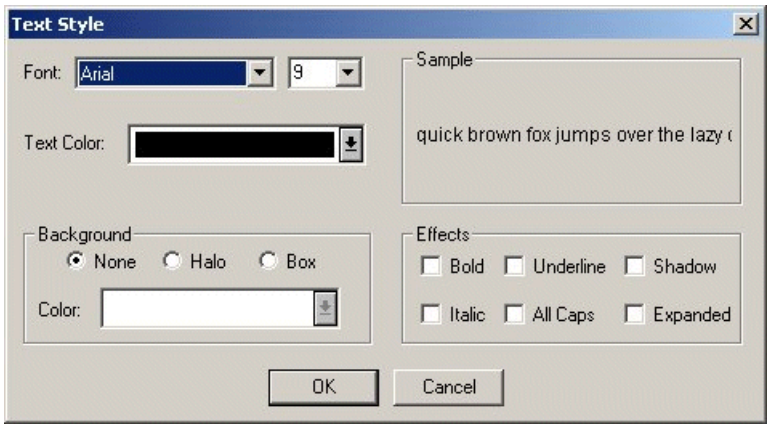


Figure 2-4 Text Style Dialog

2.2.5 Changing Map Layer Style

The map layers default style can be changed.

To change Map layer style. Select **Layer Control** as in **2.2.1.** Click on the map layer you wish to change.

To select Display Properties menu.

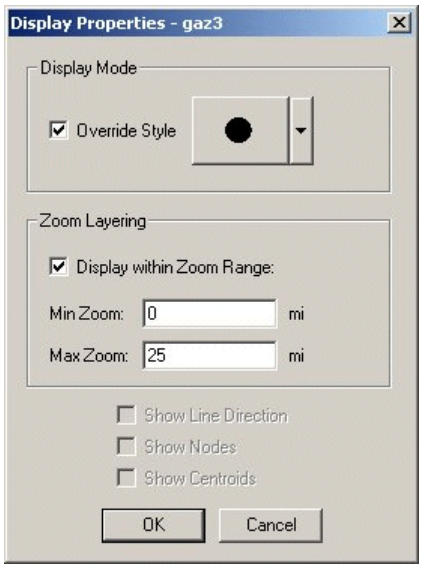


Figure 2-5 Display Properties Dialog

It is possible to ensure that the map layer only becomes visible to the user at particular scales. This is an effective way of ensuring that the map remains uncluttered.

Place √ in ☐ for **Display with Zoom Range**, then chose a **Min Zoom** and **Max Zoom** setting.

Place √ in ☐ for **Override Style** to change the way the points, lines or areas look.

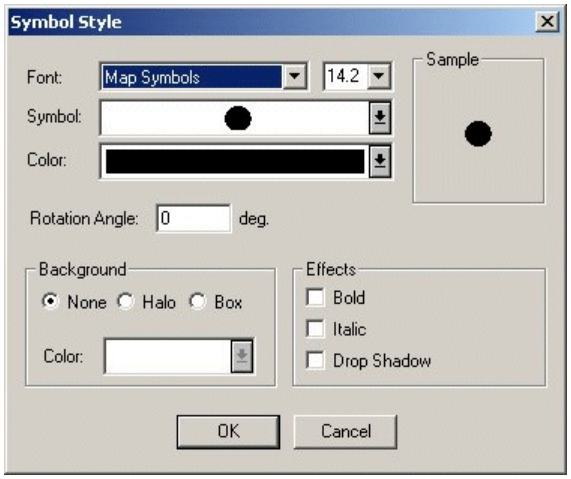


Figure 2-16 Symbol Style Dialog

This menu can be used to browse and edit new symbol styles for points, lines or areas.

2.2.6 Making Layers "Editable" or "Selectable"

STACC does not provide the user with the ability to edit these map layers. To do this the user will require a geographic information system (GIS) such as MapInfo Professional. Alternatively, if there is a need for some layer alteration (such as the addition of extra items etc.) then contact Service for advice.

Do not place √ in □ of **Selectable** or **Editable** in the **Layer Control** display.

Follow the instructions in the insallation wizard. By default, the destination folder for the STACC Application will be C:\Program Files\Stacc. The user may wish to change the location by pressing the "Browse" button on the appropriate screen.

2.3 Hardware.

2.3.1 PC System Requirements.

A dedicated PC is the preferred option for running the Base Station software. Minimum PC specification:

- AMD Athlon 1.8 XP Or Pentium 4 1.7 GHz Processor
- 256mb Ram
- 40 Gb Hard drive
- 16Mb Video card
- 16 bit Sound card
- Cd rom
- Floppy drive
- 19" Monitor

Supported Operating Systems are: Windows XP Professional or Windows 2000 Professional

Please Note that this specification is suitable for UK Mapping data only, if more than one mapping area is added the hard drive size should be increased to a 60 GB hard drive or bigger and an extra

128mb ram should be added. A 2ghz processor should be installed and used in conjunction with a minimum monitor size of 19" or preferably 21".

If more than two mapping areas are added the PC should only be used for STACC, and nothing else. Due to the amount of data processing the machine will have to do, running other applications at the same time will only slow down or possibly make any part of this operation unstable.

If the number of units being tracked by a Base station is large, it may require a number of modems. The computer will have to be fitted with enough Serial Ports to support these. Alternatively USB allows multiple serial connections.

2.3.2 Base Station Modems.

STACC systems are supplied with GSM modems. The STACC Base Station can be operated with one or more modems. The number of modems required will depend on the total number of vehicles being monitored and the quantity and number of calls made to each vehicle. If STACC is configured for Emergency calls it is recommended that a dedicated modem be used for incoming Emergency calls. STACC allows only one modem to be set for incoming Emergency calls and only one for incoming low priority calls. One modem can be set to receive both Emergency and low priority calls. See **4.3.2.** for modem set up instructions

3 DAY TO DAY OPERATION

3.1 Tool Bar Overview.

STACC's tool bar is used to provide quick access to common functions.

View **Map Screen.** (Shortcut **Alt-M**)

View **Tote Screen.** (Shortcut **Alt-T**)

View **Message Screen** (Shortcut **Alt-I**)

Switch selected unit between **Map** and **Tote Screens.**

Call selected unit. (Shortcut **Alt-C**)

Show **Report Centre**. (Shortcut **Alt-R**)

Select unit in main Map

Pan Map.

Zoom in.

Zoom out.

Centre Map.

Distance Measurement.

Back to previous map view.

Centre main Map on **Home.**

Zoom to **Local level.**

Zoom to **District level.**

Zoom to **Regional level.**

Zoom to **National Level.**

Show **whole map.**

Map pre-sets.

Show/Hide **Overview/Track** view.

Call activity monitor.

Message Status

3.2 Screens/Windows

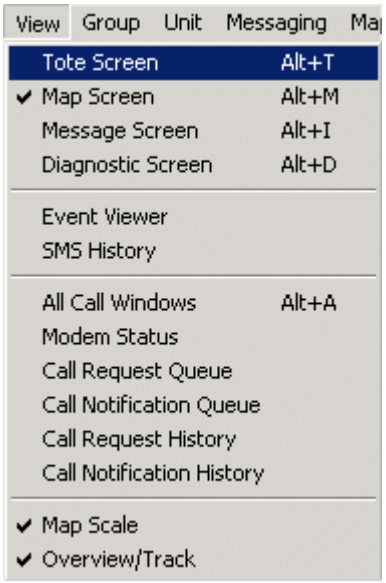
There are three main screens used in the day to day operation of STACC, the **Tote Screen,** the **Message Screen**, and the **Map Screen**. There is a fourth screen, the **Diagnostic Screen**, which is for service support. These screens are accessed using: -

 For the **Map Screen**.

 For the Tote Screen.

 For the Message Screen.

Or select from The **View menu.**



On a day to day basis the **Overview/Track** view is used with the **Map Screen** and occasionally it may be necessary to refer to the **Event Viewer** and **Modem Status**. The **Queue** and **History** views, entered from the **View** menu, are mainly used for monitoring the system operation, details of these can be found in the **System Management** section of this manual.

 To enable the Overview/Track and Event Viewer or select in the View Menu.

3.2.1 Tote Screen.

The **Tote Screen** lists all the units being tracked by STACC. For management purposes the units can be organised in groups. The time and latest known position downloaded for each unit is displayed together with the status of the last call made and the time of the next scheduled contact. Calls to units can be manually initiated from this screen. (See **3.8.2.2.**) The ✓ in the □ indicates automatic calling enabled for that unit or group.

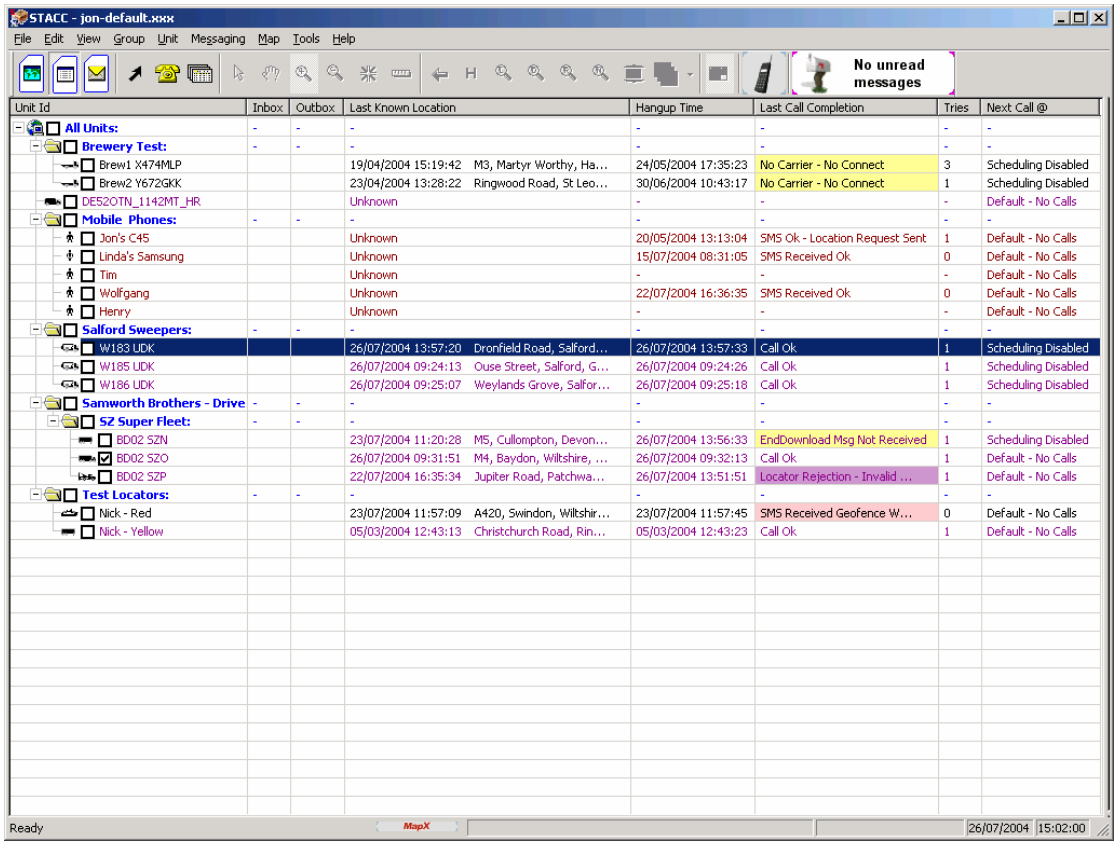


Figure 3-1 Tote Screen

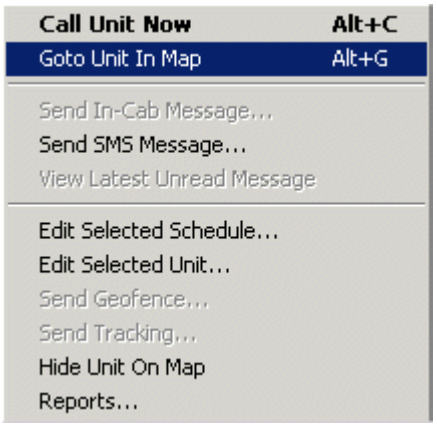
To collapse or expand group files click on [-] or [+]

3.2.1.1 View Units in Map Screen from Tote Screen.

The last known position for a selected unit can be displayed on the **Map Screen** by **Left click** to highlight selected unit, then


To go to unit on **Map Screen.**

Or **Right click** to highlight selected unit and display menu:



Select **Goto Unit In Map** to display unit on **Map Screen**.

3.2.1.2 Last Call Completion.

These messages appear in Last Call Completion column of the Tote Screen and also the **Call Notification Queue/History**. Unless completion is **Call OK** the scheduler will recall the unit in accordance with the call schedule chosen for the unit. These messages are colour coded for easy identification.

White:	Any non-emergency message containing "OK"
Green:	Call "In Progress"
Blue:	"Call Queued"
Red:	Any "Emergency" message.
Yellow:	Any other.
Orange	Data Loss.
Purple	STU Rejection.

"Call Ok" "Incoming Emergency Call OK" "Incoming Call OK" "Incoming Emergency Spot Call OK" "Incoming Spot Call OK"	All data was downloaded successfully.
"Call Completed With Some Data Loss" "Incoming Emergency Call With Data Loss" "Incoming Call With Data Loss"	Most of the data stored on the remote unit has been downloaded, but the GSM network loses some. This usually involves a small number of messages and will be remedied the next time the unit is called. Any missing data will then be downloaded from the unit. Typically this can happen when the unit passes through a GSM shadow where reception is patchy, but not sufficient to cut-off the call.
"Invalid Phone Number"	Unit phone number has less than 8 digits. STACC refuses to call invalid numbers.
"Call Back Init Not Received" "Call Back Originator Not Recognised" "Spot Location Not Received"	Incoming call failed before we could identify. Unknown unit called. (identified by data call number)
"Base Modem Not Responding"	Modem connected to the base station is not functioning correctly. STACC will attempt to rectify problem by terminating communications with the modem and then reconnecting.
"Remote Modem Not Responding"	GSM network provider cannot contact the modem on the unit. Reasons include: unit is out of GSM network range, unit ignition is off and STACC is only on when the ignition is on or the SIM card on the unit has been deactivated or expired by the GSM network provider.
"Remote Unit Busy Line"	Remote unit busy.
"No Carrier - No Connect"	Remote unit answered the call, but then terminated the connection immediately. Network problem. E.g. congestion.

"Bad Connect Response"	Modem fitted not approved for use with STACC.
"Synchro Not Received" "Download Header Msg Not Received" "State Count Not Received"	Initial contact was made with the unit, but contact was lost before any data could be downloaded. Reasons may include the unit is passing through an area of bad GSM reception. Repeated problems may be due to a poor location for the base station modem aerial
"End Download Msg Not Received"	Call was cut-off in the middle of downloading data from the remote unit. Occurs when the unit enters an area with bad GSM reception.
"End Comm Ack Not Received"	Call was cut-off before final confirmation of download completion could take place. When unit enters an area of bad GSM reception.
"User Cancelled Queued Call	Call cancelled by User.
"SMS Status Message Received Ok" "SMS Position Refresh Received Ok" "SMS Received Location Response Ok" "SMS Received Tracking Response OK" "SMS Received Geofence Warning"	Benefon Phone responses. Status messages received. Position initiated by phone user. Individual position requested by Base station. Position from tracking request. Geofence warning received.
"SMS Sending Location Request SMS" "SMS Ok - Location Request Sent" "SMS Fail – Location Request"	Benefon Phone commands requesting individual locations..
"SMS Received Ok" "SMS Send Ok"	Normal SMS received. Normal SMS sent.

The following completion states occur when an error has occurred either in the remote unit or the base station software:

"Spot Location Msg Invalid" "Remote Data Corrupt" "Download Header Invalid" "Download Msg Invalid"	Firmware error has occurred in the remote unit. Contact Service for advice.
"Completion State Invalid"	Base station software error has occurred. Contact Service for advice.

The following messages indicate that the STU may be not logging data or that data may be lost due to data being over written in the STU log.

"(any of above messages) Missing Fixes"	No fixes in download.
"(any of above messages) May lose data"	Data may be overwritten in STU log.

The "Missing Fixes" error occurs when there are no fixes in the download message. This may be caused by calling the unit a second time before it logs a new position. For example, if the unit has a logging interval of 5 minutes and it is recalled after only 2 minutes. This error can also be displayed if a fault causes the STU to stop logging.

The "May lose data" warning indicates that the STU has not been down loaded for a period and in the future data in the log may be overwritten. The time that the warning is flagged is set by the "Hours until overwrite setting in the Call schedule settings. **See 4.3.1**.

STU Rejection – Too many bases	
STU Rejection – Invalid access code	
STU Rejection – No primary access	
STU Rejection – Invalid base station Id	
STU Rejection – Invalid access mode	
STU Rejection – Invalid access format	

The above messages will be displayed when incorrect multi-base station installations are made.

3.2.2 Map Screen.

The **Map Screen** is used to show the time and latest known position for each unit being tracked and to display complete unit routes, which may be examined in detail. Units can be selected and called directly from this screen.

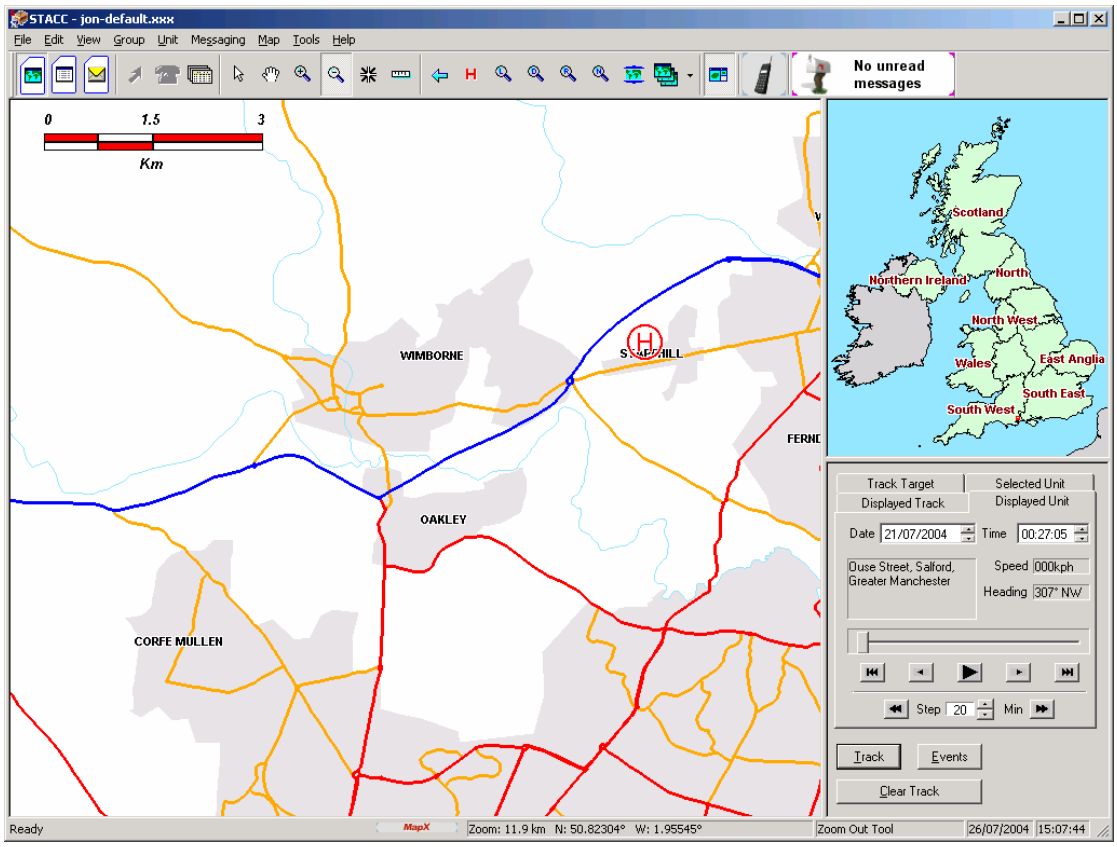
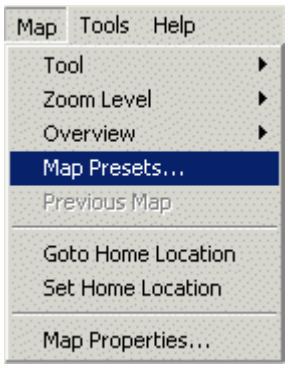


Figure 3-2 Map Screen

3.2.2.1 Mapping Tools.

STACC has a number of tools to enable the selection of the optimum map view. These tools can be accessed from the **Map menu** on the **main menu**.



3.2.2.2 View Unit in Tote Screen from Map Screen.

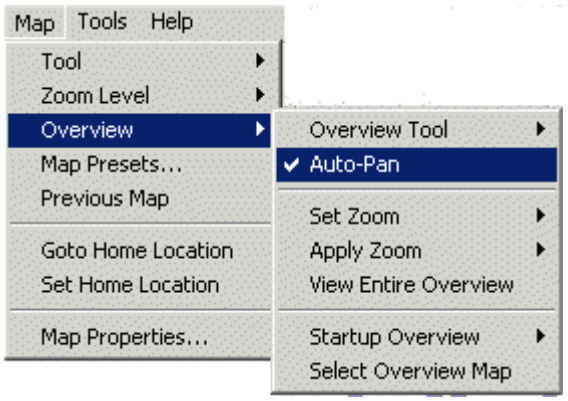
To see a unit on the Tote Screen from the Map Screen, select with the pointer tool

The unit will be surrounded by a red ring, then right mouse click, and select the menu item "View Unit In Tote"

3.2.3 Overview Map.

Figure 3-3 Overview Map

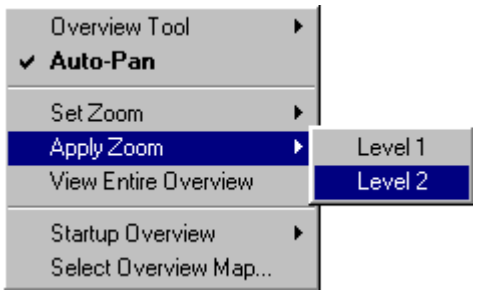
The **Overview Map menu** can be enabled from the **Map menu** or **Right click** on the Overview Map to access contextual menu.



3.2.3.1 Overview Map Pan Function.

With **Auto Pan** enabled the **Overview Map** will automatically pan if the **Main Map** area selected is outside the currently displayed extent of the **Overview Map.**

3.2.3.2 Overview Map Zoom Levels.

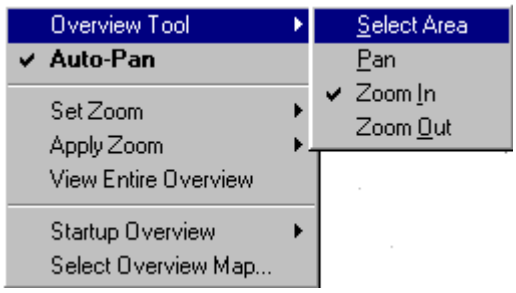


There are two pre-set **Zoom Levels**.

Use **Apply Zoom** to change between fixed **Zoom Levels**.

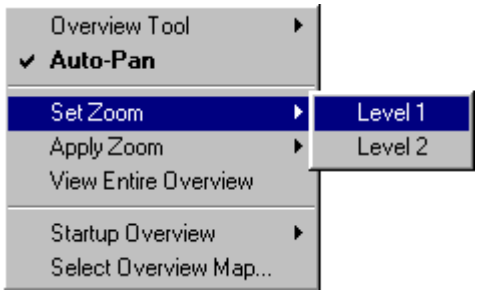
3.2.3.3 Select on Overview Map new area for Main Map.

Click and drag with the Select Area tool to define new main map area. This Overview tool is initially selected on STACC start-up.



The **Pan**, **Zoom In** and **Zoom Out** tools are used to move around and change the scale of the **Overview Map**. The operation of these tools is identical to those on the **Main Map Screen**.

3.2.3.4 Overview set Zoom Levels.

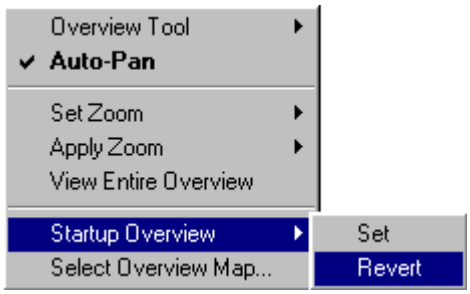


To set the **Zoom Levels,** use normal **Zoom in/out** tools to set **Overview Map** to preferred area. Click on **Level 1** of **Set Zoom** sub menu to store. Repeat for **Level 2**.

For example, **Level 1** can be set to show an entire country, whilst **Level 2** can show a regional area.

3.2.3.5 Overview Start-up Map.

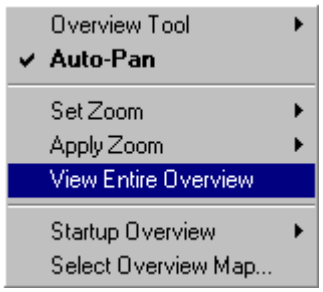
To set the start-up **Overview Map** extent, adjust overview map to required view and click on **Set** in **Start-up Overview** sub-menu.



To return to this default, at any time, click on **Revert** in **Start-up Overview.**

3.2.3.6 View Entire Overview Map.

To view entire **Overview Map** click on **View Entire Overview** in sub-menu. This function is used when first setting up the **Overview Map**.



3.2.3.7 Change Overview Map Layers.

To change the geoset (collection of mapping layers) used by the **Overview Map**.

3.3 Zooming in and out of the Main Map.

Allow conventional click and drag **Zooming**.

Select pre-set, Local, District, Regional and National views.

3.3.1 Click and Drag Zoom of Main Map.

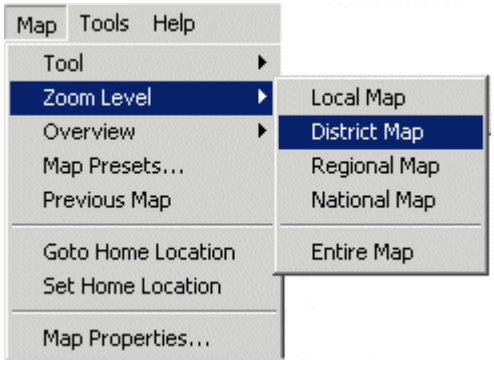
Zoom in/out tools can be selected from the **Tool Bar**, **Tool** sub-menu of **Map menu**.

Or right click on map and use **Tool** sub menu: -

Having selected the **Zoom in** or **Zoom out** tool click and drag to scale area. Pressing and holding Ctrl can change the zoom tool action**.**

3.3.2 Zoom Levels Main Map.

Zoom level is selected from the **Tool Bar** or **Tool** sub-menu of the **Map menu.**

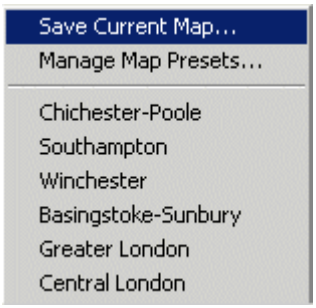


Select Zoom Level.

3.3.3 Map Pre-sets

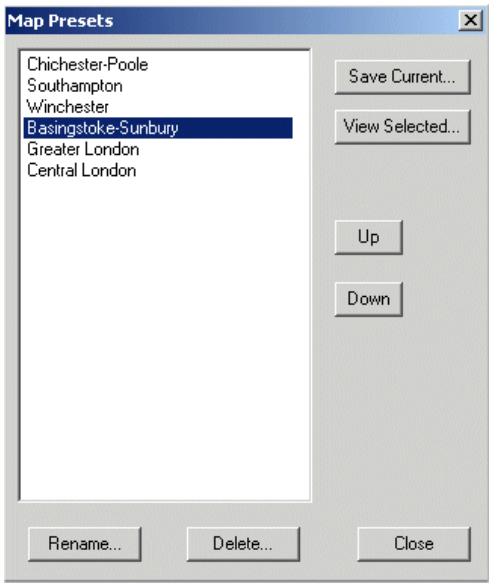
Predefined map displays can be stored for future use.

To save current map or select/edit exiting map pre-sets.



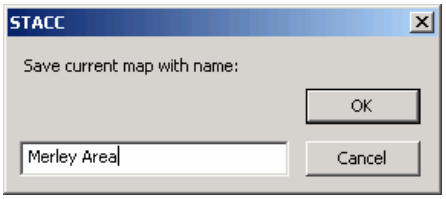
Select **Save Current Map** to store existing map display.

Select **Manage Map Pre-sets** to edit existing Pre-sets.

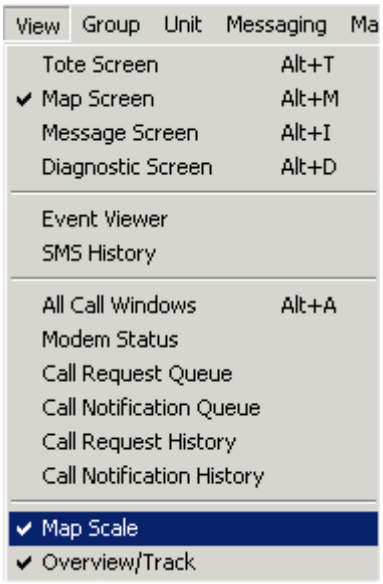


To edit Pre-set names and delete Pre-sets use **Map Pre-set** window.

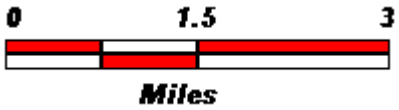
When saving Pre-set enter name.



3.3.4 Main Map Scale Rule.



The main map **Scale Rule** is turned on/off from the **View menu**.



Scale can be displayed in Kilometres or Miles.

See 3.4.8. Map Measuring Systems

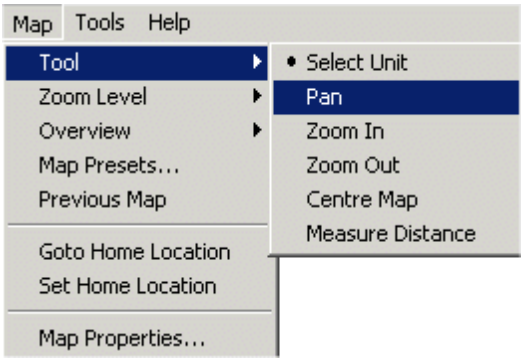
3.4 Moving around Map.

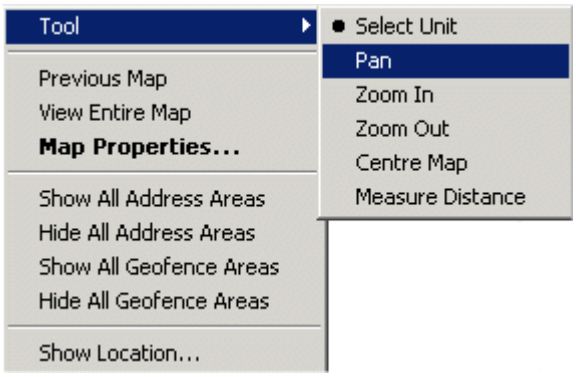
- The **Main map** can be moved using the **Pan** tool, or by selecting an area on the **Overview map**. Alternatively, **Zoom in/out** tools may be used to reposition the map.
- A **Home** position can be set on the map; (See **4.1.1.**) this would normally be the centre of operations.
- The map can be centred on the **Home** position.
- The previous map can be displayed.
- The map can be centred on a selected unit from the **Tracking** window or from the **Tote screen** as described in section **3.2.1.1.**

3.4.1 Main Map Pan Function.

 Selects **Pan** from the **Tool Bar.**

Pan can also be selected from the **Tool** sub-menu of the **Map menu** or **Right click** on the **Map view** and use the **Tool** sub-menu.





3.4.2 Change Main Map View using Overview Map.

To select a new map area from the **Overview Map**, click and drag to define area required.

Click and Drag on Overview Map.

3.4.3 Centre Main Map on Home.

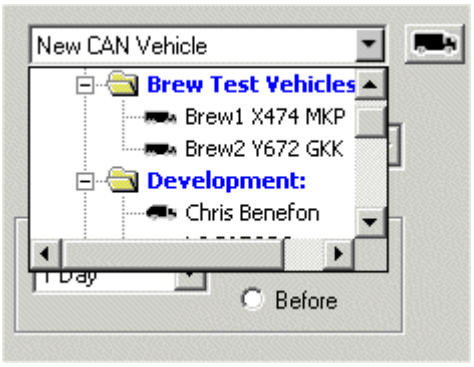
To centre map display on Home.

Or select **Go to Home** on the **Map Menu**.

3.4.4 Back to Previous Map view.

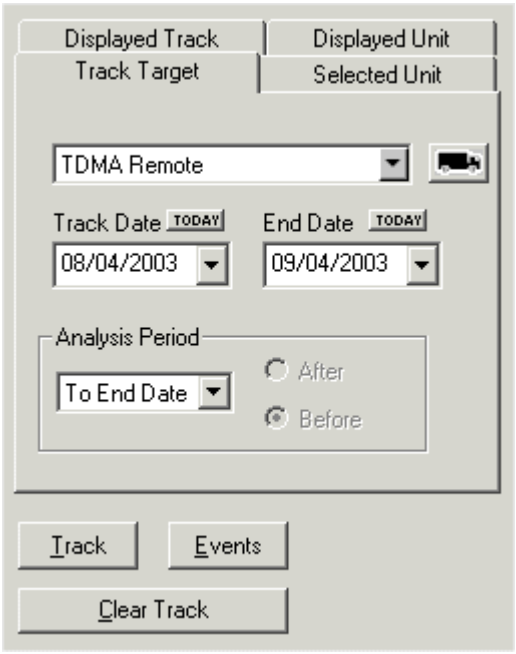
To return to the previous map displayed.

3.4.5 Centre Map on Unit not in current view.



With the **Overview/Track view** displayed, the **Track view** can be used to find units on the **Main map.**

Select the Target unit in the **Track Target** view.

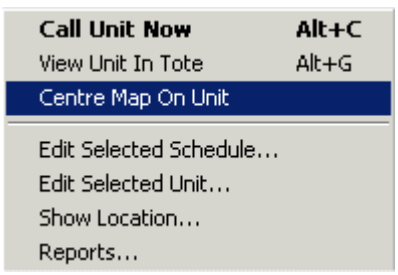


 To centre map on choosen unit.

3.4.6 Centre Map on Unit visible in current view.

To centre on a unit on the **Map Screen.** To select unit.

Right click on Map to enable sub menu: -.



Select **Centre Map on Unit** to move map.

3.4.7 Centre Map on selected point.

 To centre **Map Screen** on selected point

Position symbol at selected centre point and left click.

3.5 Measuring Distance and Cursor Position.

To measure distances on **Map Screen.**

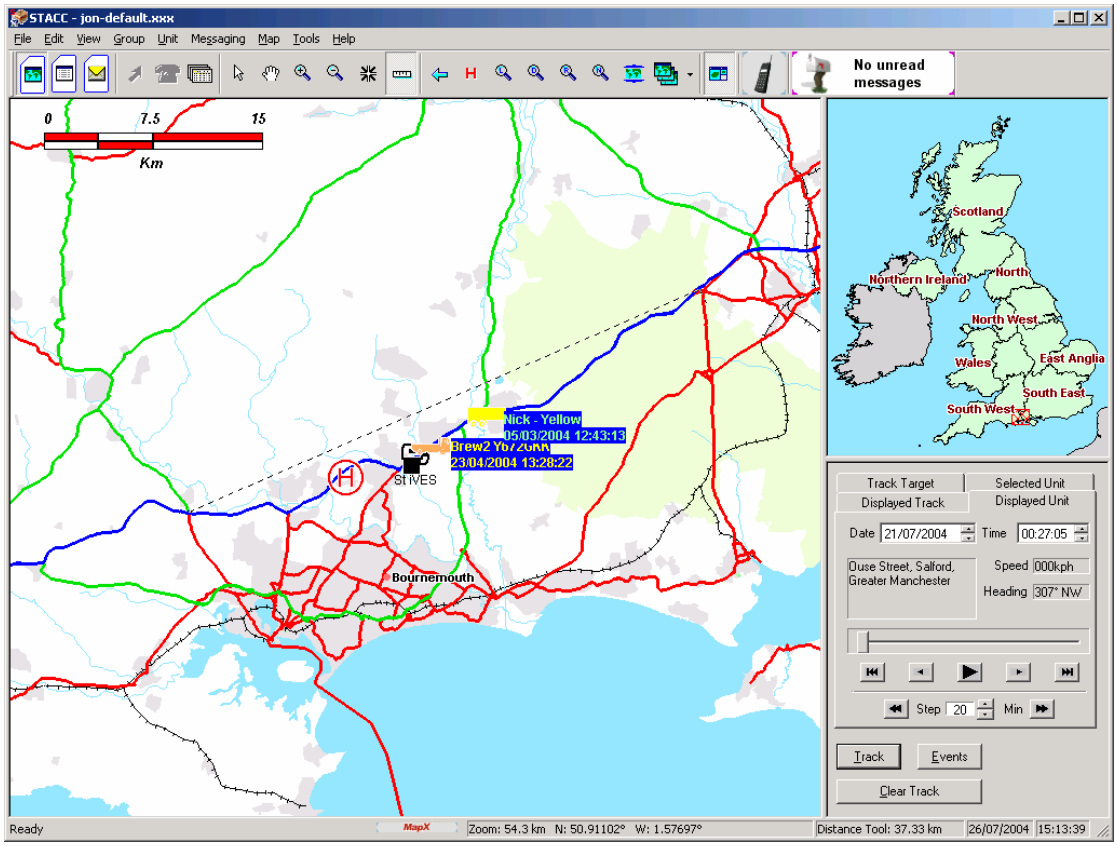


Figure 3-4 Map Screen with Distance

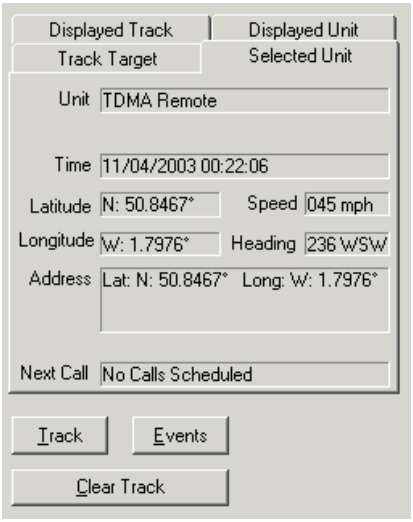
Position marker at start point, right click, move to next point and right click repeat until total route length measured. The **Cursor** position is displayed and continuously updated.

For clarity route marked clear of roads in example above.

3.6 Display Unit Details

The details of any unit shown on the **Map Screen** can be displayed.

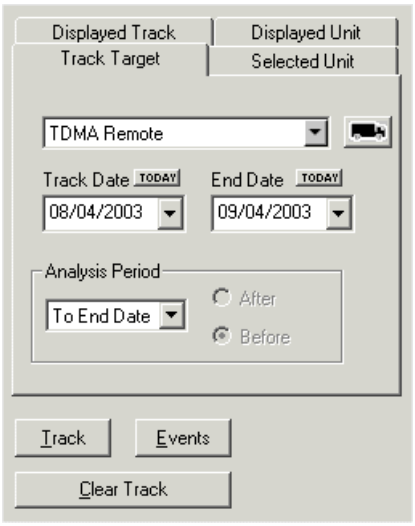
To select unit



Selected Unit tab on **Track view** to view details.

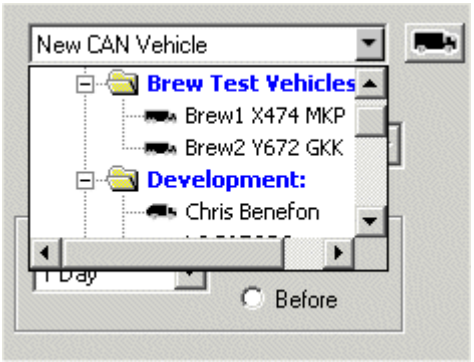
3.7 Tracking.

The track for a selected unit can be displayed and analysed on the **Map Screen**.



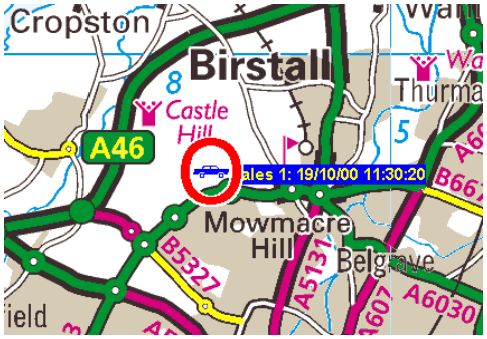
To display track, if **Overview/Track** view is not displayed, select **Overview/Track** in **Map menu**

3.7.1 Select Unit to be Tracked.



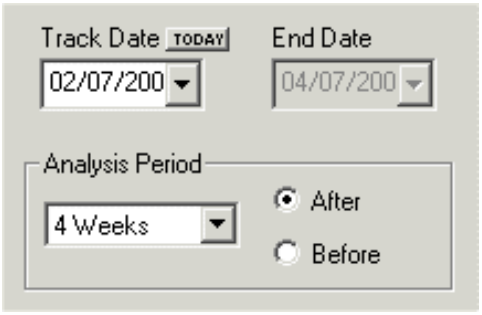
Select the unit to be tracked in the Unit drop-down menu on Track Target page. Or:

To select a unit on the **Map Screen.**



3.7.2 Set Tracking Period.

Select the period over which you wish to view the track using the **Analysis Period** and **Start/End Date** in the **Track Target** overview. The track period may be defined in one of two ways. Select a track date, then, either:



Pick an analysis period and choose whether this runs before or after the track date.

Or, Pick 'To End Date' as the analysis period, and select an end date.

3.7.3 To View or Clear Unit Track.

To display track of selected unit.

To clear track.

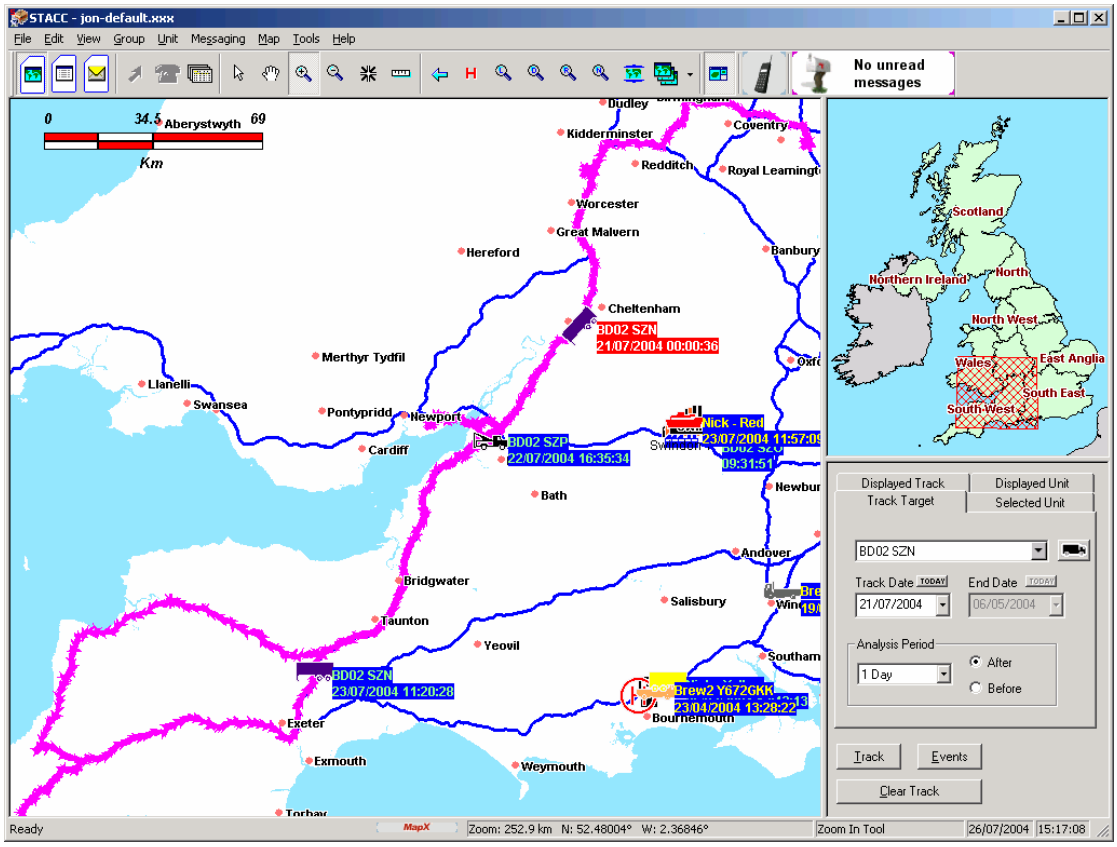
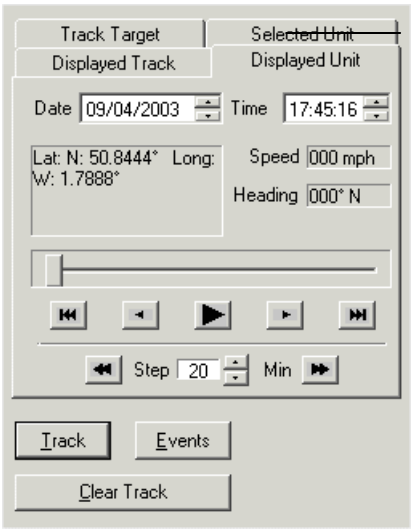


Figure 3-5 Overview Map with Track

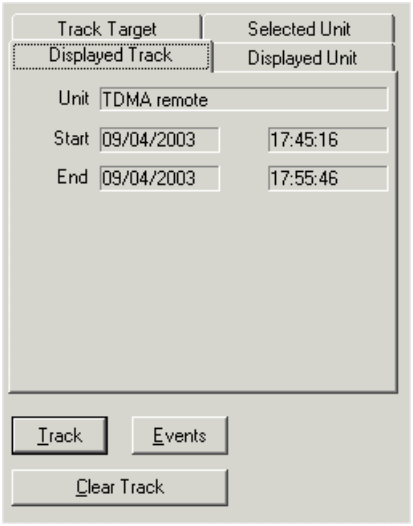
The displayed track is made up from a series of locations extracted from the database. The interval between these locations will be the larger of either the interval at which the unit is logging position data or the interval set to extract data from the database. See **4.4.1.**

3.7.4 Track Playback.

Use the track controls on the **Displayed Unit** overview to run throuh the unit's track.



Displayed Track shows Unit Id, Start date/time and End, date/time of displayed track.



At any point on the track will display unit time and date.

3.8 Outgoing Calls to Units.

The STACC Base Station will call units, to download stored data, automatically or on demand. The automatic calls are controlled by the **Call Scheduler**. Even when the base station is unattended data can be downloaded and stored. At any time a request can be made to immediately contact selected units. The number of outgoing lines available limits the number of calls that can be made simultaneously by STACC. The scheduler determines the time and priority of outgoing calls. If a call fails to make contact the call will be re scheduled at a higher priority. The time between retries and the number of retries is set in the **Call Schedules**. See **4.3.1.** If Benefon units are used with STACC they can be programmed to automatically send their position to the STACC base station with out being called by the scheduler.

Automatically scheduled and manual calls are allocated a priority. The higher the number the greater the priority: -

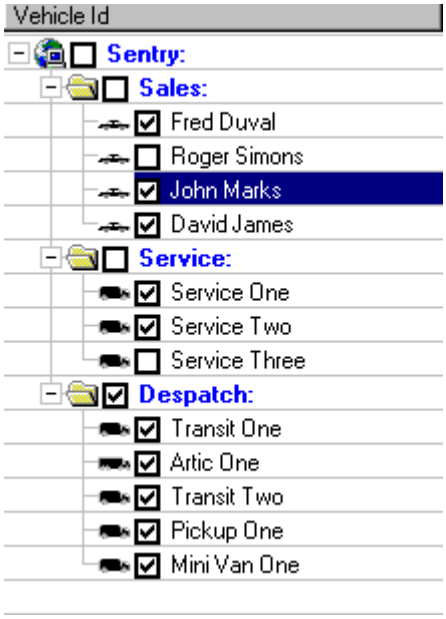
Type of call	Priority
Automatically scheduled first call	1
Automatically scheduled first retry	2
Subsequent retries	+1
Manual first call	100
Manual first retry	101
Subsequent retries	+1

Emergency first call	400
Emergency first retry	401
Subsequent retries	+1

When any outgoing or incoming call is in progress, this is indicated by the animated mobile phone symbol in the **Tool Bar**.

3.8.1 Scheduled Outgoing Call

Calls can be scheduled for selected days of the week at fixed intervals and at specific times. On a day to day basis it would not normally be necessary to change these schedules or change the particular schedule used by an individual unit. Creating new schedules and modifying existing schedules is dealt with in detail in section **4.3.1**. Unless a change in the schedule is required, no action is required by the operator for the scheduled calls to be made.



A tick in the schedule box, under Unit Id in the **Tote Screen** indicates that the scheduling is active for that unit.

Click on box to enable/disable scheduling.

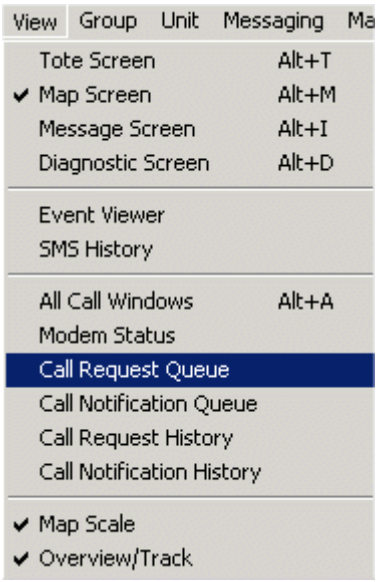
Warnings if running automatic call scheduling.

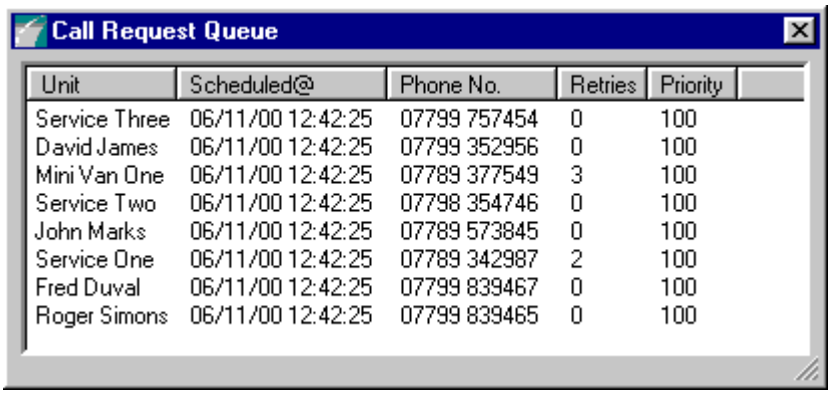
It is recommended that the STACC Base Station PC is left running 24 hours a day to ensure all scheduled calls can be made.If STACC is being run on a PC which is used by other software, leave STACC running in the background whilst other programs are being used.

MAN ERF Telematic Services recommend that separate mobile modems dedicated to STACC be used. If however the modem is used for other programs it will be necessary to disable the STACC modem connection before use. Failure to re-enable the modem for STACC's use may lose valuable data.

3.8.2 Outgoing Calls on Demand.

At any time you can request that STACC calls and downloads data from a unit or a group of units. STACC will call the unit as soon as possible. Select the **Call Request Queue** from the **View menu** to view calls waiting to be made. Top unit in queue will be called next.





Call requests to individual units can be instigated from the **Map Screen** and the **Tote Screen**. Calls to entire groups can be made from the **Tote Screen**

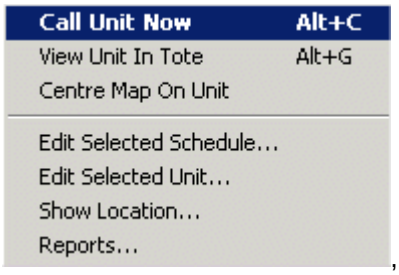
3.8.2.1 Requesting Individual Outgoing Calls from Map Screen.

To call a unit, which is on the **Map Screen**: -

To select unit.

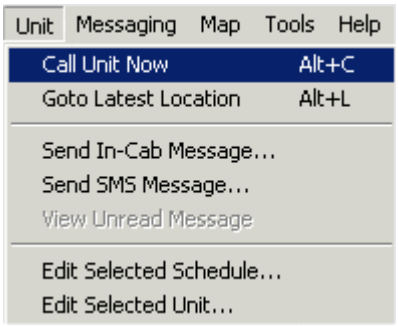
To initiate the call

Or:



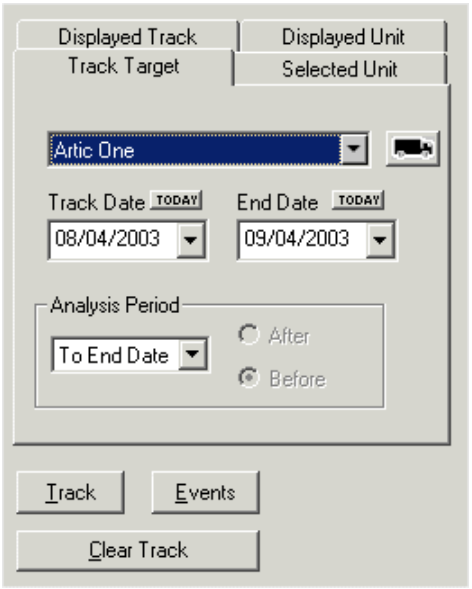
,

Right click on map and select **Call Unit Now.** Or:



Select **Call Unit Now** from the **Unit menu**

If the **Overview/Track** overlay is enabled on the **Map Screen** to request a call: -



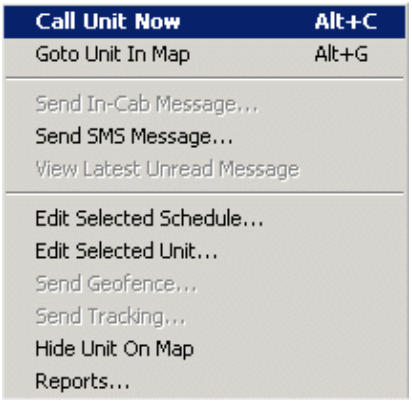
Select the unit in the **Track Target**

To select unit.

To request call

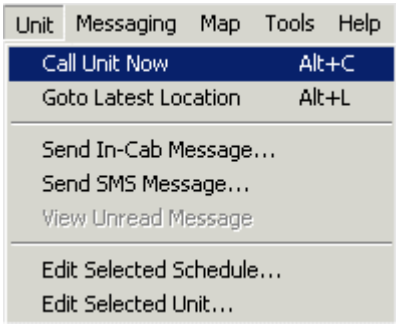
3.8.2.2 Requesting Individual Outgoing Calls from Tote Screen.

To call a unit, which is on the **Tote Screen**, left click on unit.



Right click on unit and initiate call from sub-menu.

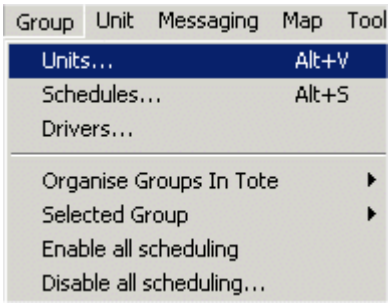
Or  to initiate call.



Or initiate the call from the **Unit menu**

3.8.2.3 Requesting Individual Outgoing Calls from Group menu.

It is possible to call a unit from the **Unit collection** overlay.



Select Units from Group Menu.

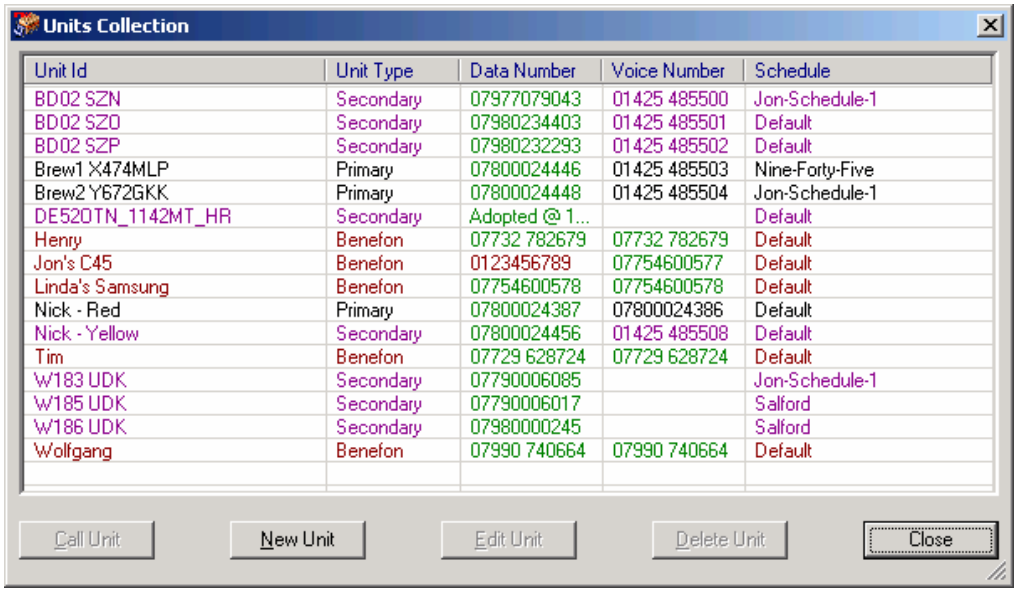


Figure 3-6 Units Collection Dialog

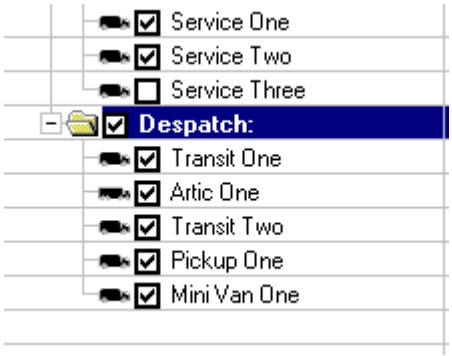
To call a unit, from the **Unit collection**, click on unit.

To call unit.

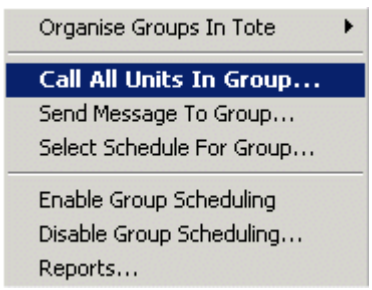
Normally calls would only be made from this overlay when checking new units added to the system.

3.8.2.4 Requesting Outgoing call to all units in a Group.

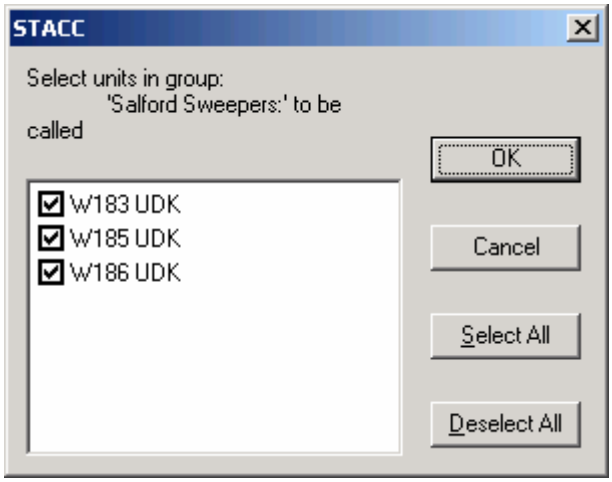
From the **Tote Screen** it is possible to request outgoing calls to a Group of units.



Right click on **Group header** to enable contextual menu.



Click on **Call All Units In Group** to request call to all units in Group.



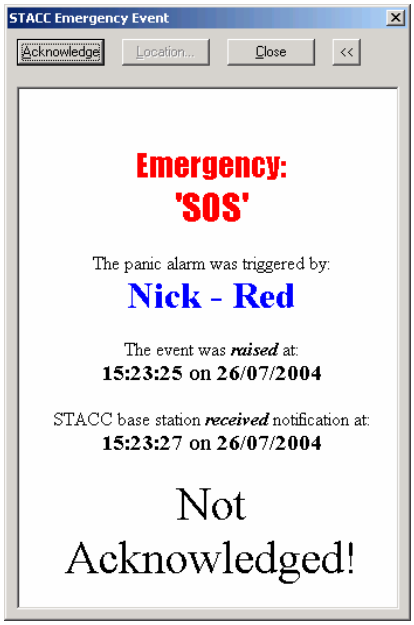
Un-tick box to remove unit from list to be called.

OK To start calls

3.9 Incoming Emergency/Low Priority Calls.

The STACC Base Station normally initiates the data download from units. The system is designed to accept incoming calls when required. If the system is used for Emergency calls we recommend that a dedicated incoming line be used. See **4.3.2.** where setting up STACC for incoming calls is discussed in detail.

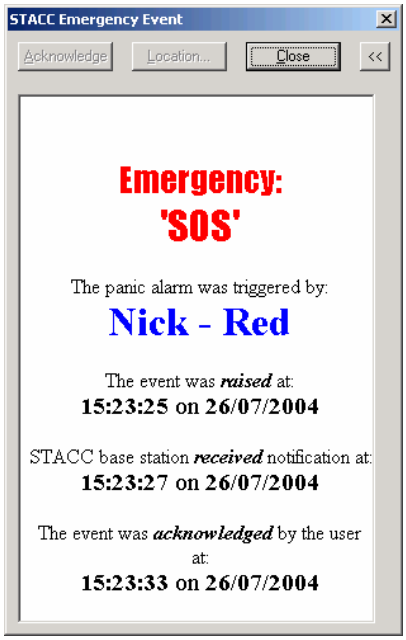
On receipt of an emergency message the **Emergency Event** warning is displayed.

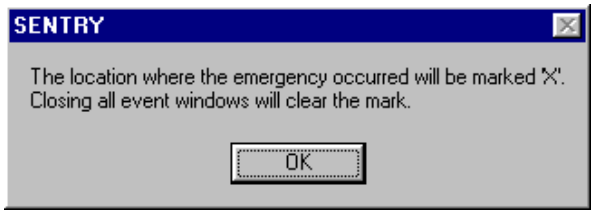


To confirm emergency noted.

The emergency dialog cannot be closed prior to acknowledgement.

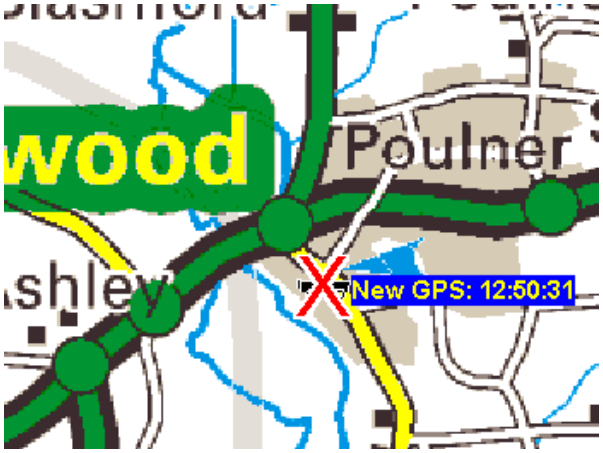
To show location of emergency.





Do not clear **Emergency Event** window at this stage.

If emergency dialog cleared before emergency location shown, this emergency message can be redisplayed from the **Event Viewer**. See Section **4.5.1.**



The position of the unit transmitting the Emergency call will be shown, marked by a red cross, in the centre of the **Map Screen.**

AT THIS POINT FOLLOW EMERGENCY PROCEDURE SET BY COMPANY

3.10 Messaging, Driver Reporting.

If the unit is fitted with an In Cab Display messages can be sent from the Base Station to individual or selected groups of units. The driver can respond with replies pre-set by the Base Station. In addition drivers can send the base station pre-set reports at any time. STACC allows the user to pre-set a total of 32 responses to messages or pre-set driver reports. The user can change this at any time. Before the messaging/reporting system can be used it is necessary to ensure that two procedures have been carried out.

First a Base Station modem must be configured for incoming calls. See **4.3.2.1.**

Secondly a set of Message Replies/Driver reports must be uploaded to the unit. This is achieved by entering the required replies and reports as in **3.10.1.** and then making a normal call to the unit. This call could be the next scheduled call to that unit or if necessary it can be called immediately. If the list of replies/reports is changed in the future, it will be necessary to call the unit to update its responses.

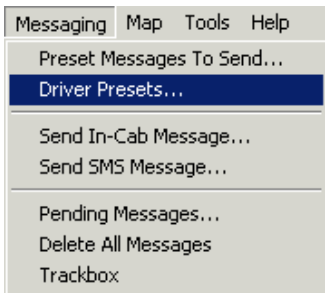
Normally STACC carries out its communications using GSM data calls, as this is the most economical method of transferring information. The messaging system allows calls to be made using either data or SMS**. Please note the use of SMS could considerably increase the communications costs of STACC.** The system allows the Base station to predetermine the method used for calling and replying to Drivers Messaging. When driver sends a report he can select a data or SMS reply. Our recommended choice of communication would be: -

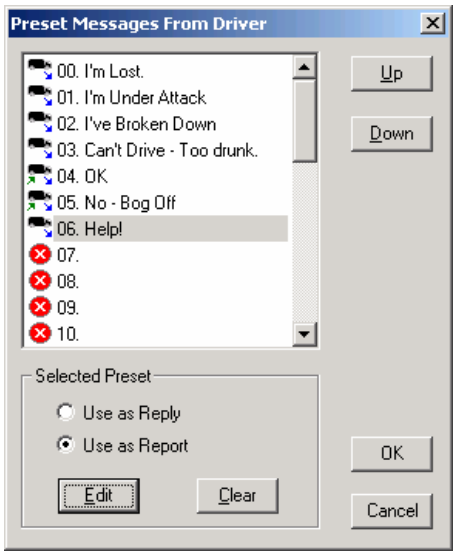
Message Type	Out	In	Reason
Non Urgent to one or a few units.	Data- Scheduled call	Data	Cheapest call charges
Urgent to one or a few units	Data- Demanded call	SMS	Outgoing data calls are cheaper than SMS
Non Urgent to many units	SMS	Data	If outgoing data call is used this may delay normal scheduled calls.
Urgent to many units	SMS	SMS	If outgoing data call is used this may delay normal call schedule. Replies sent without recalling unit.
Non Urgent Driver report	N/A	Data	Cheapest
Urgent Driver report	N/A	SMS	Message immediately sent to Base

3.10.1 Pre-setting/Editing/Deleting Message Replies/Driver Reports.

The Base station can set up to a total of 32 replies to messages or Driver reports. The pre-set messages/replies apply to all units being monitored by the STACC Base Station. The pre-set replies/reports apply to all units in all groups controlled by the base station different replies/reports cannot be used for separate groups or units. For the new settings to be uploaded to the remote unit,

normal data calls must be made to each unit in the group. To set pre-set messages/replies select **Driver Presets** from **Messaging menu**: -



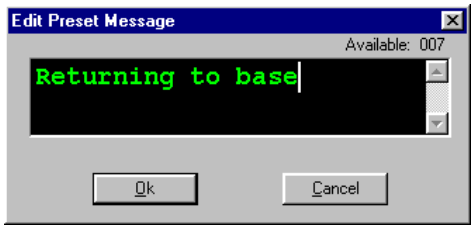


Highlight message to be edited

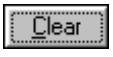
To edit selected message/report.

To make pre-set a reply to a Base Station Message √ **Enable** only.

To make pre-set a Driver report √ both **Enable** and **Permit Unsolicited Responses.**



Edit Pre-set Message

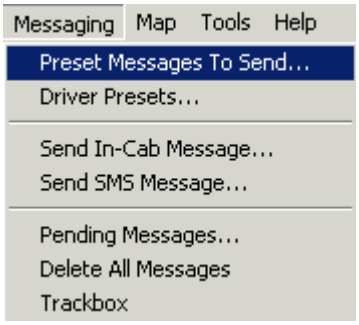


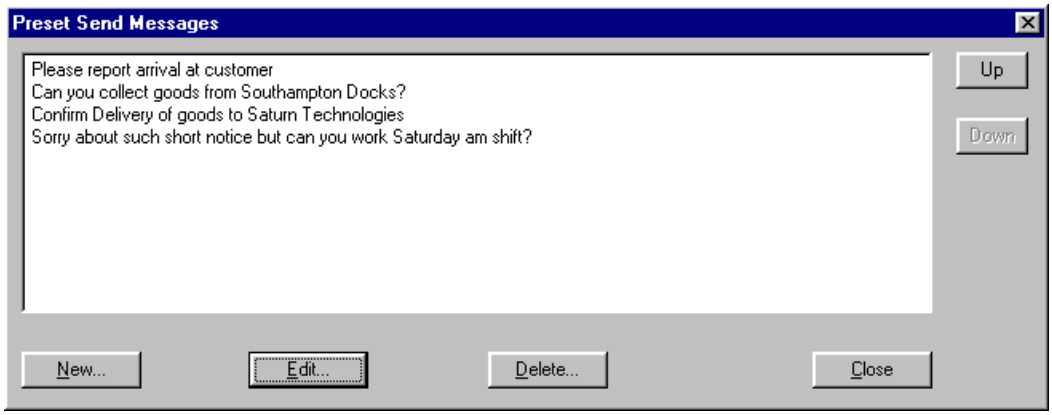
To clear reply/report highlight.

3.10.2 Entering/Editing/Deleting Pre-set Messages.

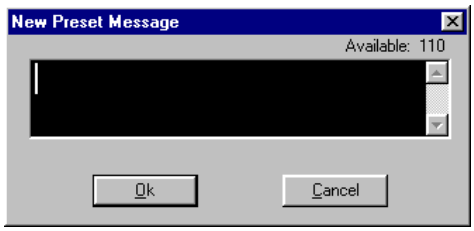
Messages can be entered individually as required or where messages are repeated stored as Pre-set Messages. To enter a new or edit an existing Pre-set message, from the **Message menu** select

Preset Messages To Send. A message can also be added or edited from the **Send In-Cab Message** window. See **3.10.3**.



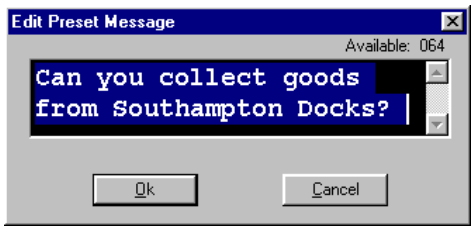


To enter new message



To enter new message. Enter New Pre-set Message

To edit existing message, highlight message.

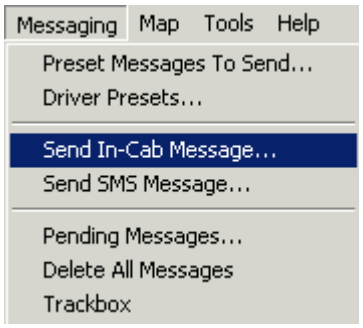


To save modified message.

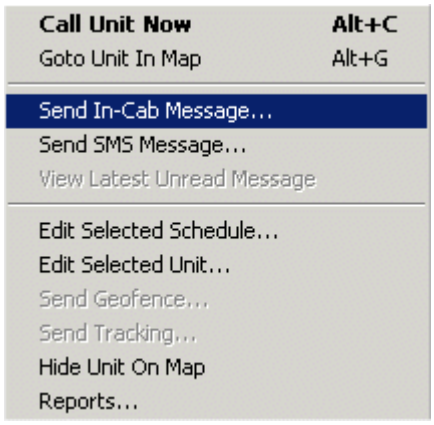
To delete message, highlight message to be deleted. Click Confirm deletion

3.10.3 Sending Messages.

To send message from **Message menu** select **Send Message**. To send message from **Tote Screen** select unit and right click to show contextual menu, select **Send In-Cab Message**.



Send Message from Message Menu



Send Message from Tote Context Menu

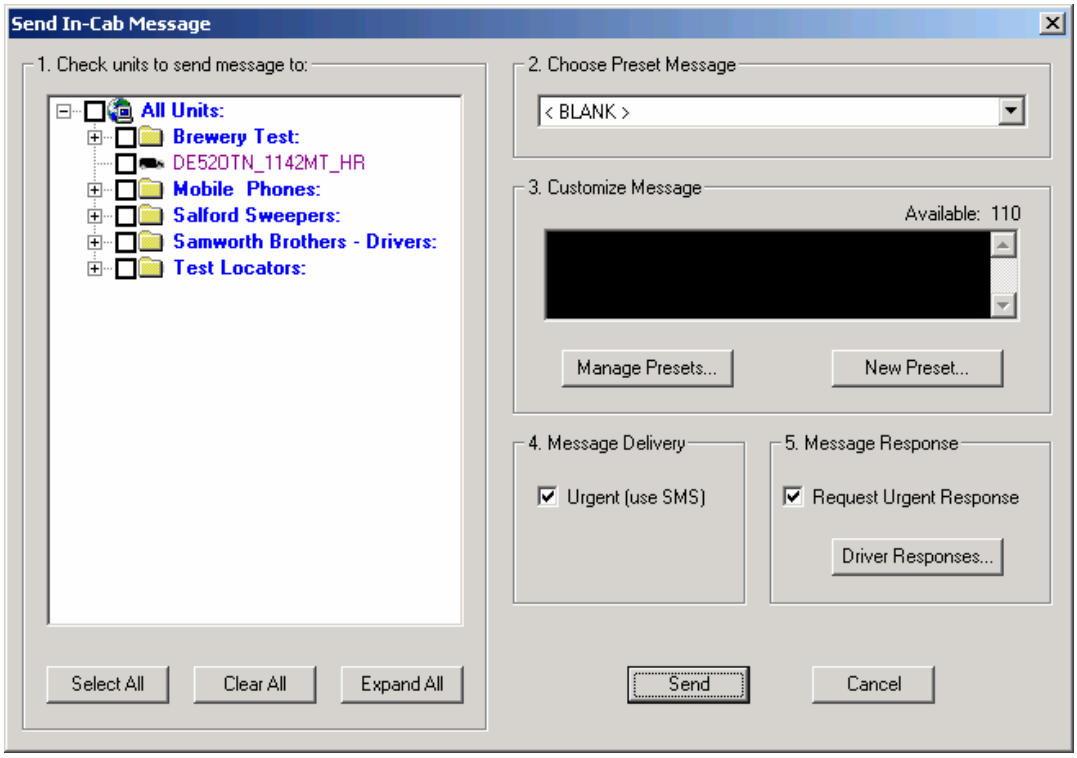


Figure 3-7 Send In-Cab Message Dialog

Select units to which message will be sent by √ in □ in **1. Check units to send message to.**

To send message to all units.

To clear all requests to send messages.

To expand groups.

Choose pre-set message from **2. Choose Preset Message.** Or enter new message in **3. Customise Message**.

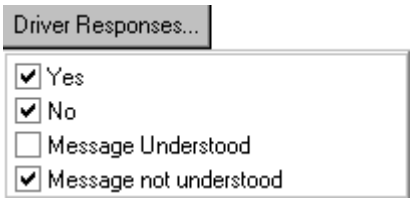
To edit existing pre-set messages.

To store new message as pre-set.

For sending urgent messages √ in □ in **4. Message delivery.**

For receiving urgent replies √ in □ in **5. Message responses.**

To set Driver Responses.



Select driver's responses to message by √ in □.

To send message.

NOTE: If Urgent messaging (SMS) is selected the message will be add to the calling queue and sent as soon any current communication is complete. Non urgent essages will be sent as part of the next data call made to that unit. If a call to that unit is not scheduled for some time the operator can call the unit as in **3.8.2.**

3.10.4 Monitoring Messages, Receiving Replies/Reports.

To view messages, replies and reports select **Message Screen**

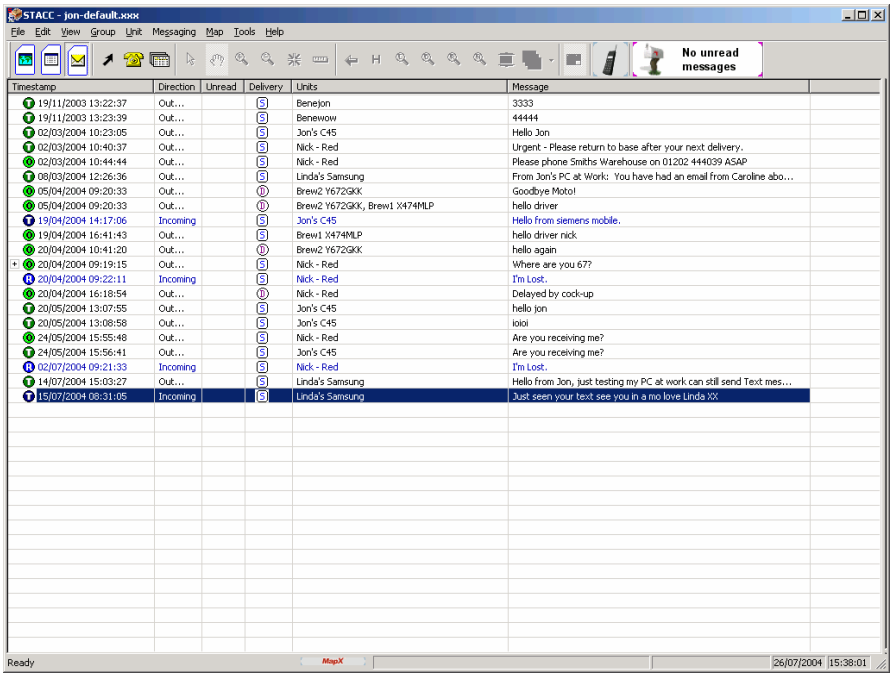
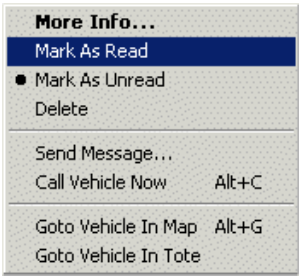


Figure 3-8 Message Screen

The **Message Screen** displays all current messages sent and reports received. Replies to messages are displayed appended to the outgoing message.

New incoming reports and replies are brought to the attention of the operator by the flashing **Message Icon** in the STACC tool bar.

To acknowledge the new reply or report, **Right Click** to highlight selected line and display menu.



Select **Mark As Read** to stop new message warning

For more information, time and date, **Right Click** to highlight selected message, report or reply to display menu.

Select **More Info…** to display additional information.

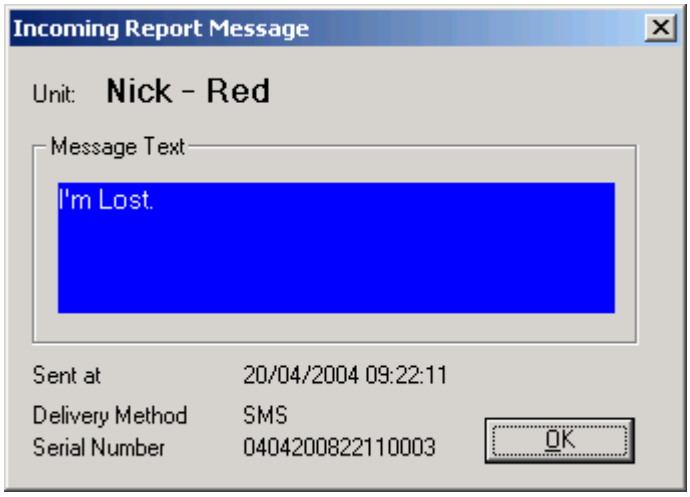
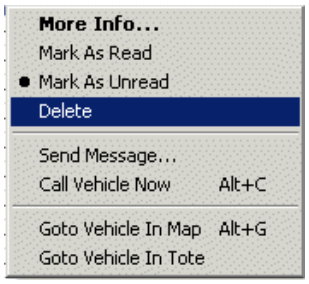


Figure 3-9 Incoming Message Dialog

3.10.5 To delete messages.

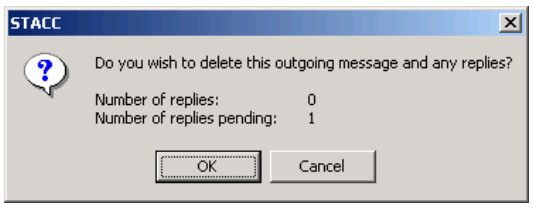
Individual or all messages, replies and reports can be deleted from the **Message Screen**.

To delete individual items, **Right Click** to highlight selected message, report or reply to display menu.

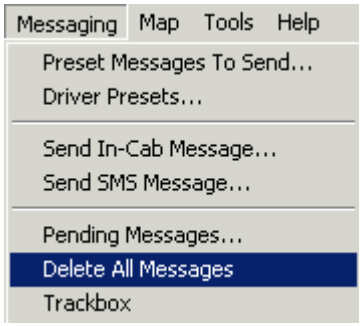


Select **Delete** to remove highlighted item.

If a message selected for deletion has not received all replies a warning will be displayed. If the message is then deleted, later replies will still be displayed but not related to the original message.



To delete all messages from the **Message Screen** from the **Messaging Menu**: -



Select **Delete All Messages** to clear all messages, replies and reports from the **Message Screen.**

3.11 Voice Calls and Phonebook

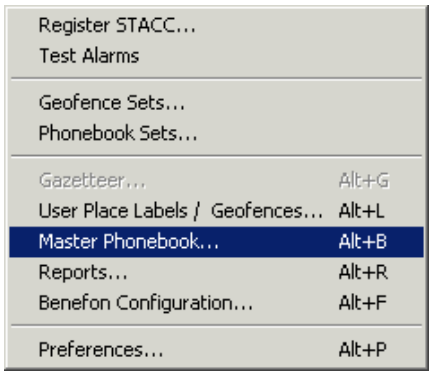
PLEASE READ BEFORE ATTEMPTING TO USE STACC PHONEBOOK

3.11.1 Introduction

STACC versions from 2.2. use multiple phonebook sets that can be uploaded to individual or groups of units. Earlier versions were limited to only one phonebook. All phone numbers used must be entered into the **Master Phonebook**. A **Phonebook Set** consists of numbers which are selected from the **Master Phonebook**. A **Phonebook Set** can only be uploaded to units that are under **Primary** control of the **Base Station**.

3.11.2 To load Master Phonebook.

Select **Phonebook** from **Tools** menu



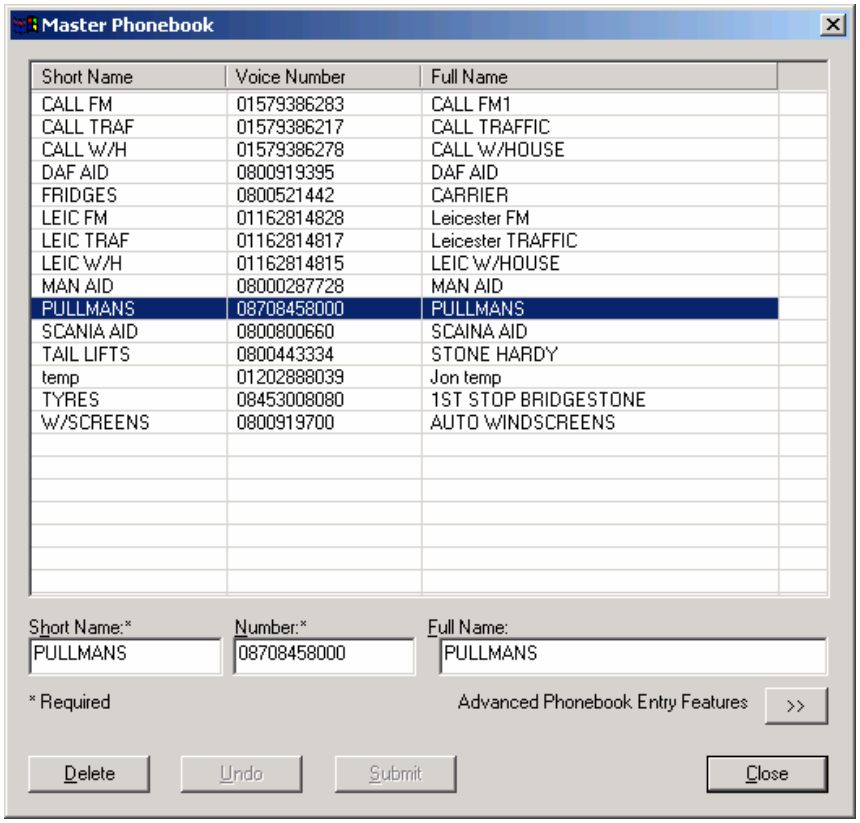


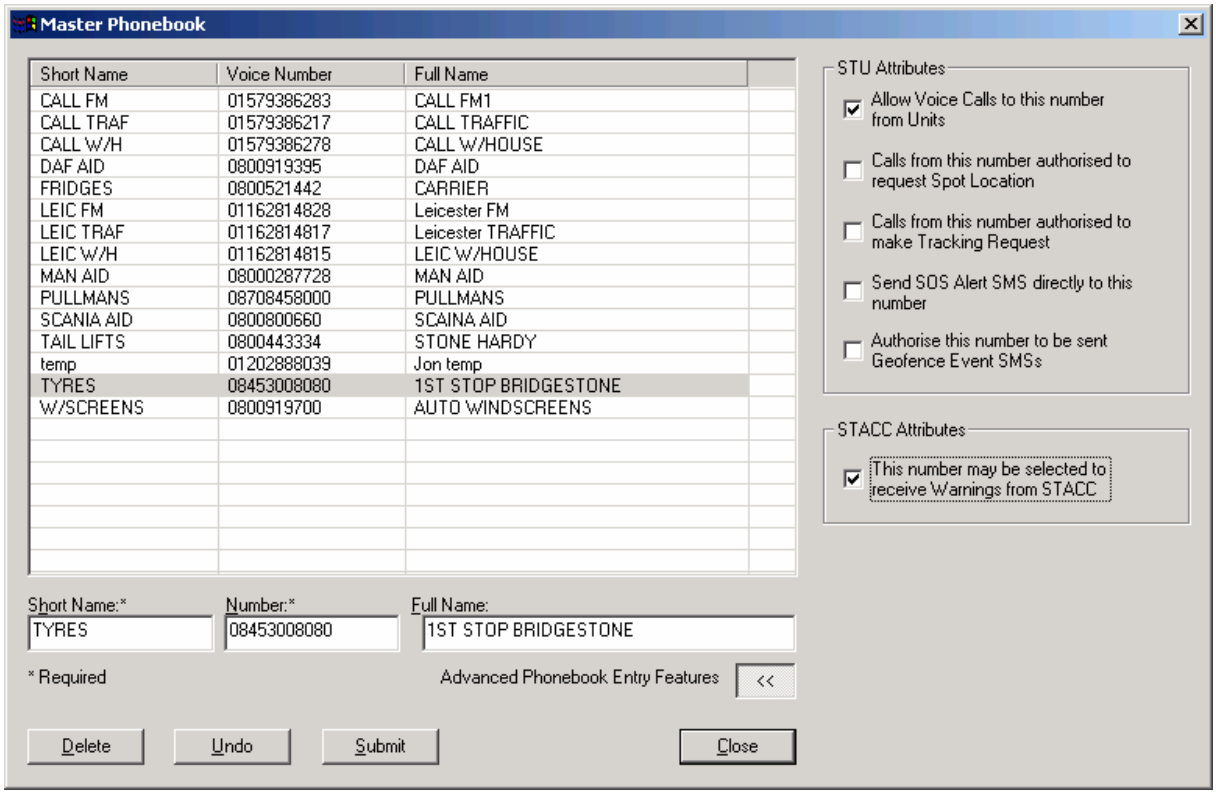
Figure 3-10 Master Phonebook Dialog

The **Short Name** and the **Number** will appear on the In Cab Display when this number is selected. The **Full Name** is for the use of the Base Station user and does not have to be used if not required.

Submit Complete required entries and Submit

There is a limit to the number of Phonebook entries that can be stored in a **Phonebook Set.** The **Phonebook Set** is sized dynamically. If short **Short Names** and short **Numbers** are used more entries can be uploaded. Save space by not entering Country codes if the unit is not used abroad. Spaces in phone numbers can also be omitted to save space.

There are some Advanced Features for Phonebook Entries, to change these settings, press the button with showing >>. This will expand the dialog to:



The first attribute must be set if this phone number is to receive voice calls from STU. The Spot Location and Tracking request options are for Benefon phones only.

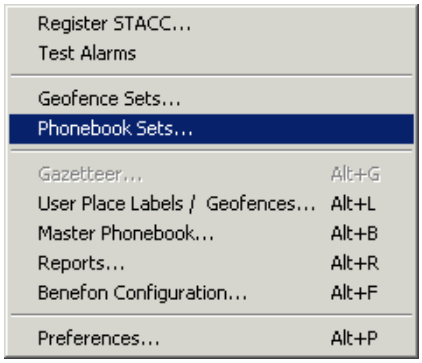
3.11.3 To Edit or Delete Phonebook Entries.

Open Phonebook as in **3.11.2**. Highlight entry that you wish to Edit or Delete.

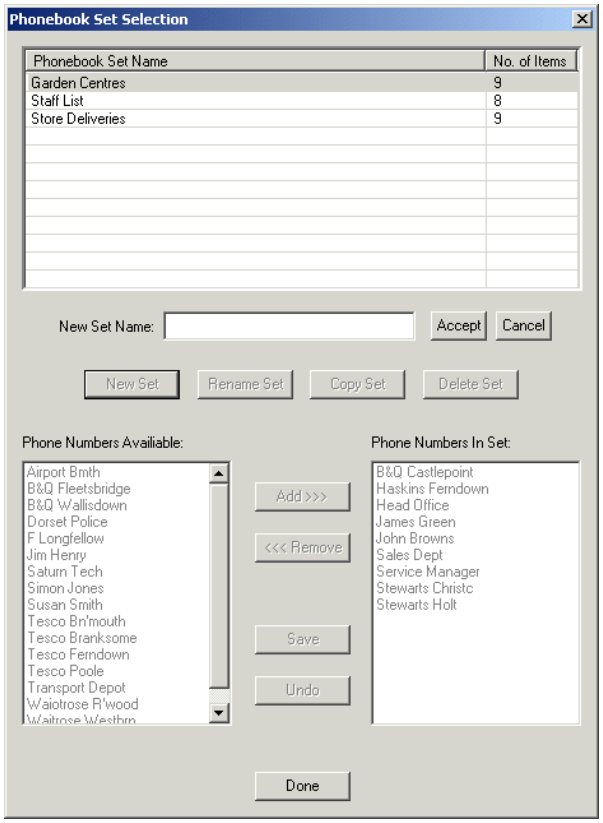
Edit in entry boxes or delete

3.11.4 To prepare a Phonebook Set.

Having entered the required phone numbers in the **Master Phonebook** the Individual **Phonebook Sets** can be constructed.



From Tools menu select Phonebook Sets.



New Set To Enter New Phonebook Set

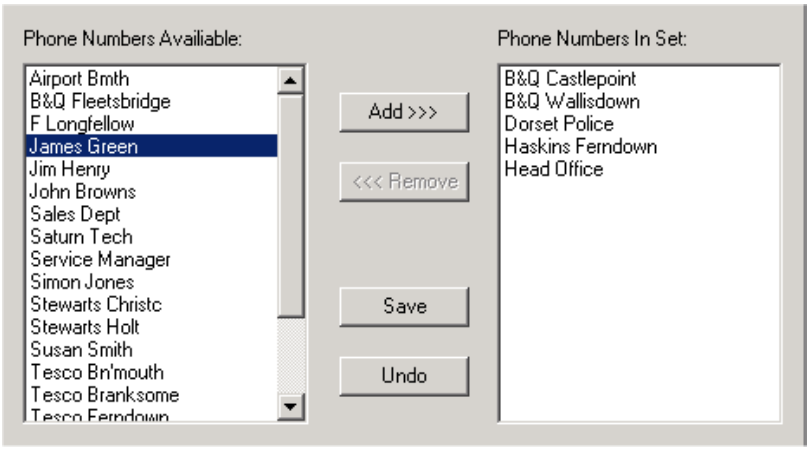
Enter new Set name, then:

Accept

To edit existing **Phonebook Set** Left click on Set name.

Copy Set To copy existing Set Left click to highlight required Set. Enter new Set Name

Rename Set To rename existing Set Left click to highlight required Set. Enter new Set name.



Left click to highlight required number in **Phone Numbers Available** window and move to **Phone Numbers In Set** window by double clicking or

To remove numbers from **Phone Numbers In Set** window, Left click to highlight number and double click or

After completing required Phonebook Set

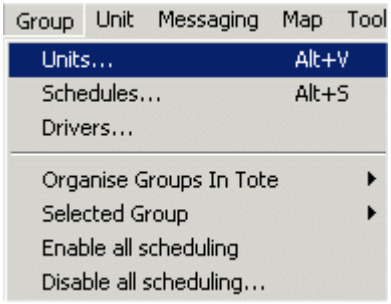
If changes not required will remove all recent changes.

If too many numbers are entered in the **Phonebook Set** a warning will be displayed when saving. See **3.11.2.**

Remove Phone Number entries, until you can save without warning being shown.

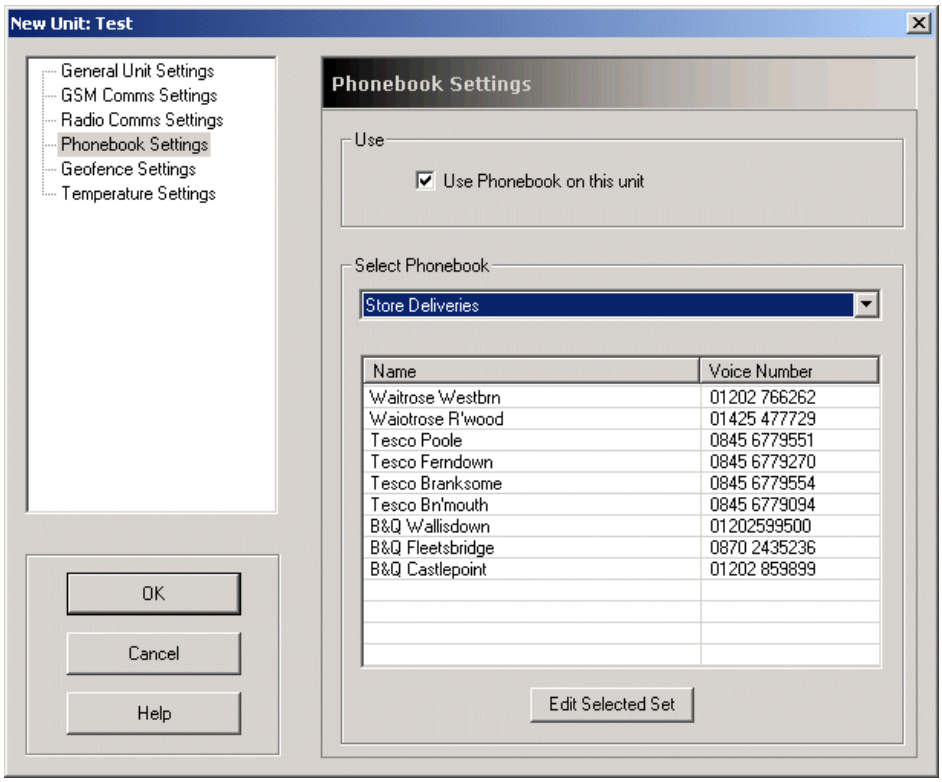
3.11.5 To Enable Phonebook Upload.

Units must be individually enabled for Phonebook Set uploading. The Phonebook Set will only be uploaded when new or when changes have been made to the existing Set.



Select Units from Group menu.

Select Unit to be edited or new Unit entry. Select **Phonebook Settings**.



Put √ in the ☐ to enable Phonebook Upload

Remove √ from ☐ to disable Phonebook Upload

Select required **Phonebook Set** from **Select Phonebook** drop down menu.

If the unit is not scheduled to be called for some time you may wish to call it immediately to update the unit's phonebook.

3.12 User Defined Places - Labels and Geofences.

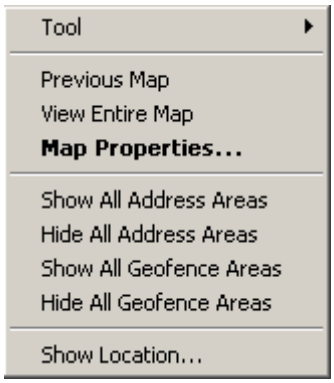
3.12.1 Introduction.

This function allows the user to give their own **Labels, Addresses** and **Geofence** areas to selected locations. The **Labels** are used on the **Map View** and the second, longer version is used in place of the postal address in the **Tote Screen** and for **Reports**. **Geofences** are used to record entry or departure from the defined area. The event is logged and if requested an SMS message can be automatically sent to the base station. When an SMS is received the **Tote Screen** will be automatically updated and a **Warning** can, if required, be displayed.

Note: Deleting or changing Geofence details in the **User Place Label** list that have already been uploaded to the remote unit may cause errors when producing Geofence reports.

3.12.2 Enter New Place.

Select location of new label on **Map View** by right clicking with Select **Show Location** from sub menu



To Edit Place Name Label

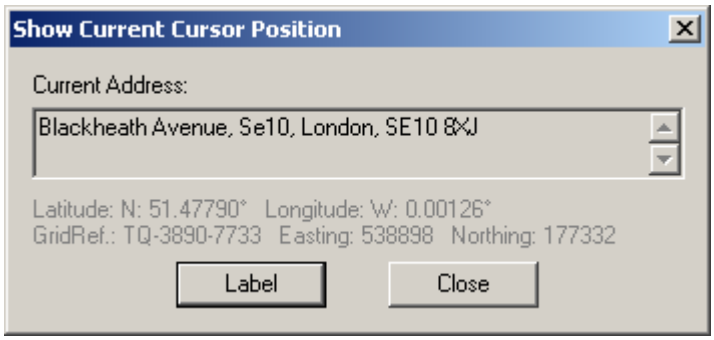


Figure 3-11 Current Position Dialog

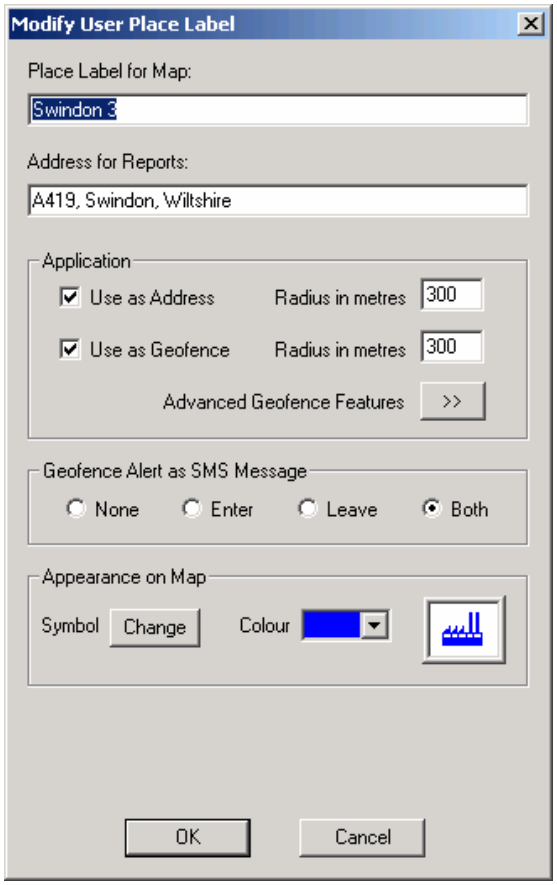


Figure 3-12 User Place Dialog

Enter Place Label for Map View.

Enter Address for Tote Screen and Reports.

Select and set **Radius** of **Place Label.**

Select and set Geofence Radius.

Set Geofence Alert status.

Select required symbol and colour. (Do not use black on white backgrounds)

If Advanced options are required, press the Advanced Geofence Features button, which will extend the dialog:

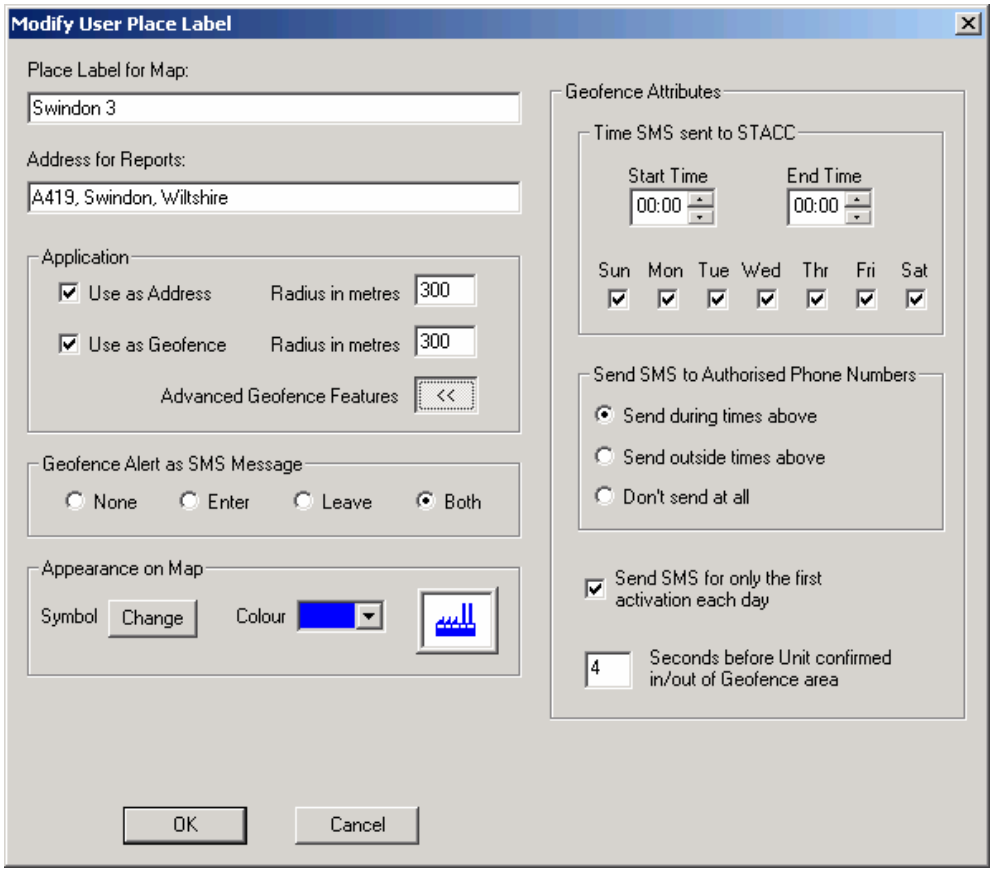
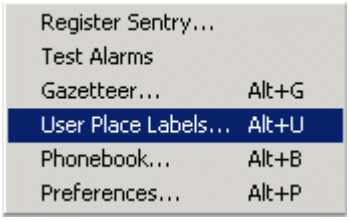


Figure 13 Expanded User Place Label Dialog

The advanced features are mainly related to the Sending of SMS (Text Messages) to mobile phones when the a Unit enters or leaves a Geofence. SMS messages will only be sent to phones that are in the phonebook held in each STU, and labelled as being able to accept such entries. See also the section on Advanced Phonebook Entry features.

Accept if entry when correct by pressing the OK button.

3.12.3 Edit/Delete Places



Select User Place Labels from Tools menu.

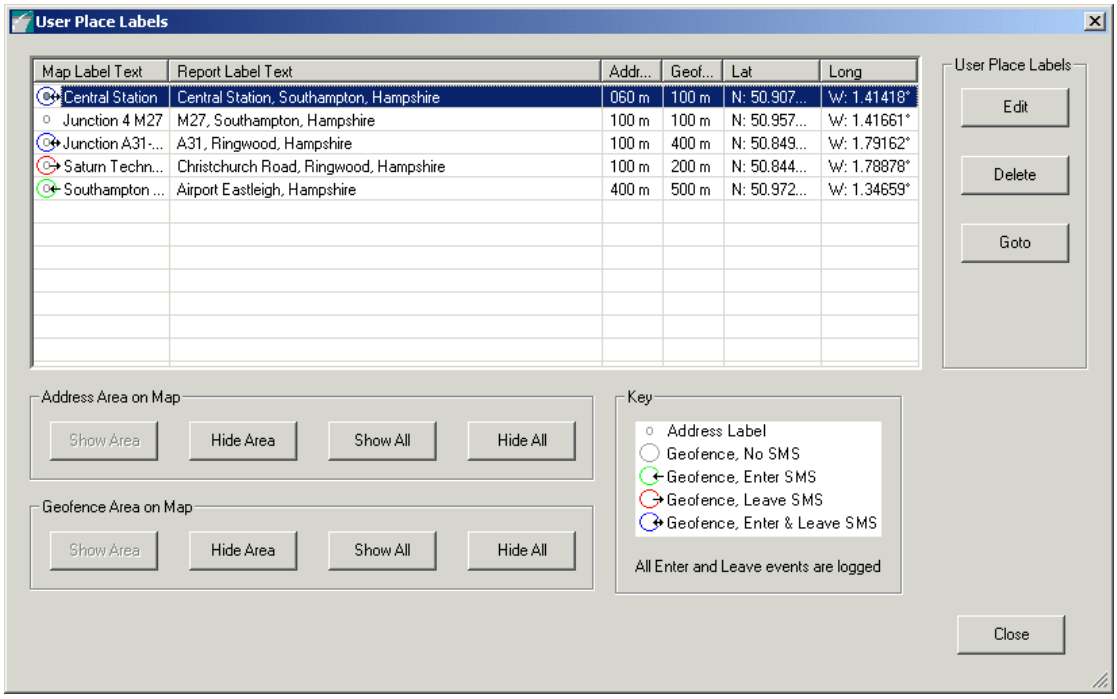


Figure 3-14 User Place Labels Dialog

Highlight Place Name Entry and use **Edit/Delete, o**r left and right on label on **Map View**.

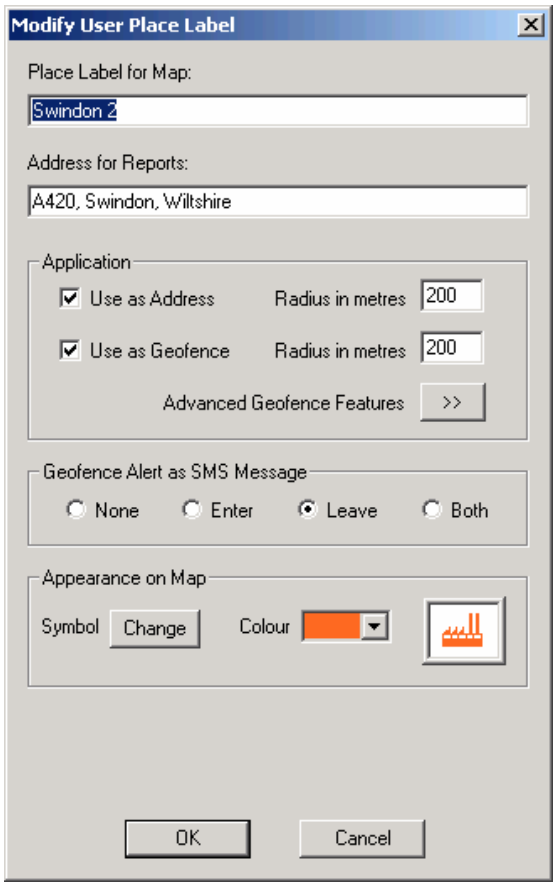
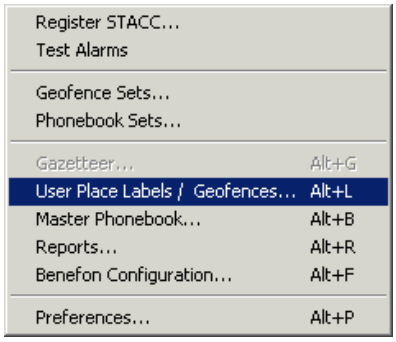


Figure 3-15 Edit User Place Dialog

3.12.4 Show/Hide Place Address and Geofence Areas

Select User Place Labels from Tools menu.



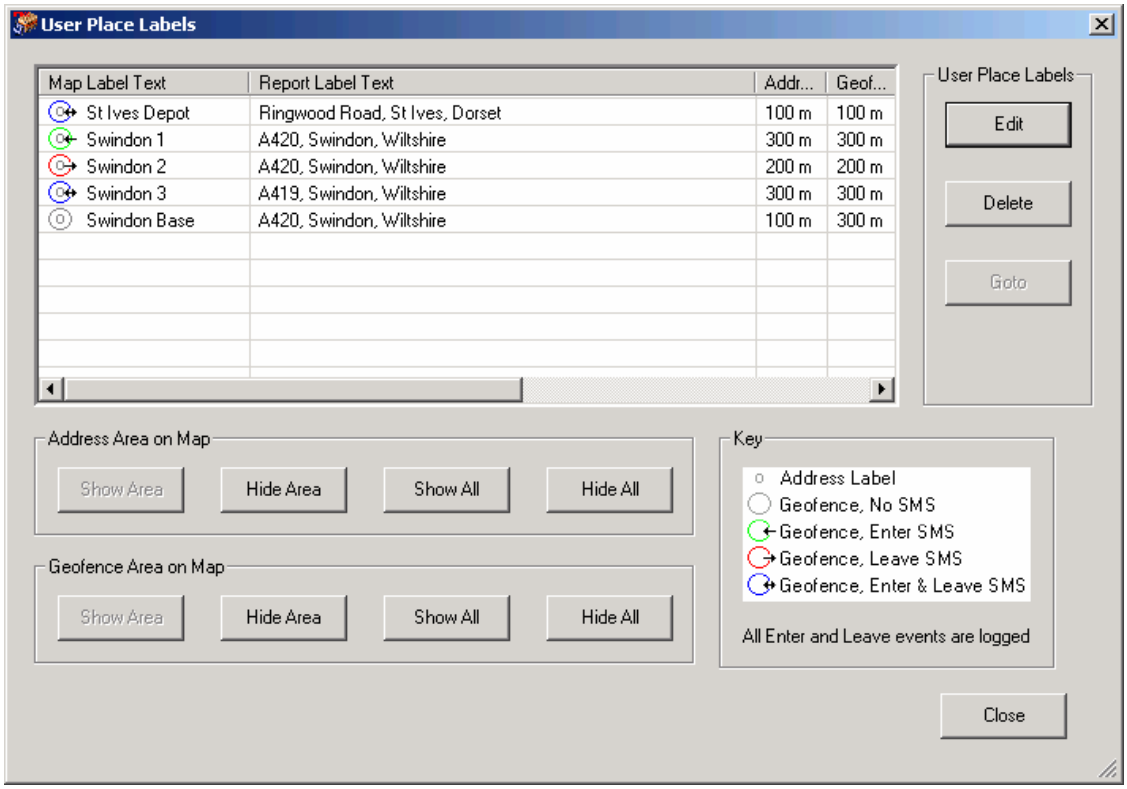
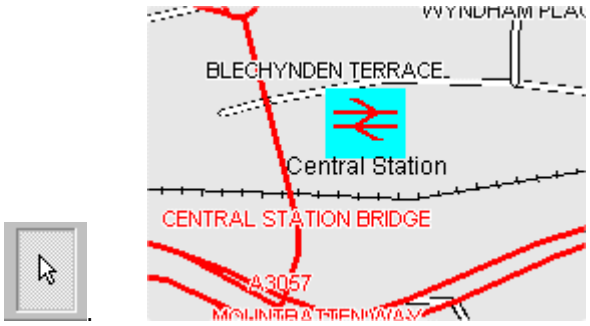


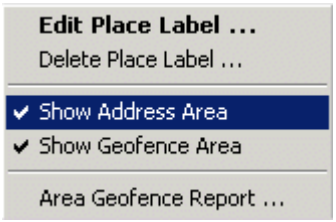
Figure 3-16 User Place Labels Dialog

Highlight label to show or hide individual **Address or Geofence** areas.

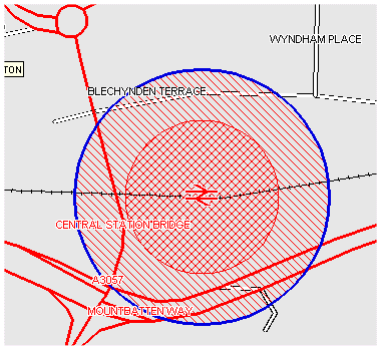
Or select **Show All** or **Hide All** to show/hide all **Address or Geofence** areas.

Or left and right on label on **Map View** to Highlight Label

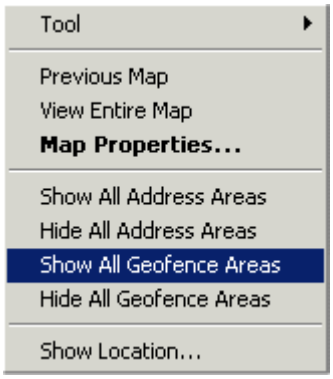




Select **Show** or **Hide Address** or **Geofence** area selected label.

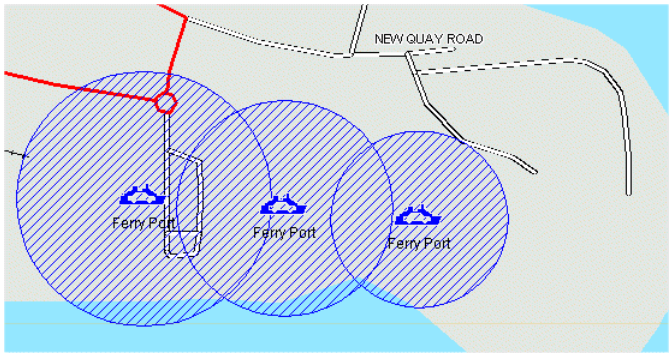


To Show/Hide all **Address** and **Geofence** areas. Right mouse click on **Map View**.



Select Show or Hide Address or Geofence areas.

3.12.5 Selecting areas not covered by single radius.



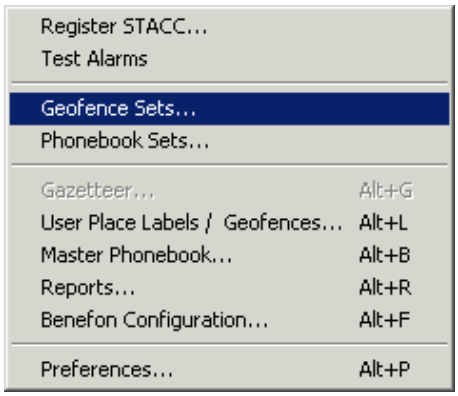
If you wish to Address or Geofence an area which cannot be covered by a single label enter a group of areas with identical descriptions.

3.12.6 Geofence Sets.

STACC versions from 5.0. use multiple **Geofence Sets** that can be uploaded to individual or groups of units. Earlier versions were limited to only one set of geofences. All geofences used must first be entered into the **User Place Label** list. **Geofence Sets** consist of geofences which are selected from the **User Place Label** list. **Geofence Sets** can only be uploaded to units that are under **Primary** control of the **Base Station**.

Geofence SMS messages can only be sent to the controlling **Base Station**. Logged geofence activations will be recorded by other base stations. In order to use this information both stations must

use the same **User Place Label** list. The list is contained in the file **UserPlaces.dat** this is normally found in **C:\Program Files\STACC**. This file should be copied from the master to other stations. Contact STACC Technical support if you require assistance with this.



From **Tool** menu select **Geofence Sets**.

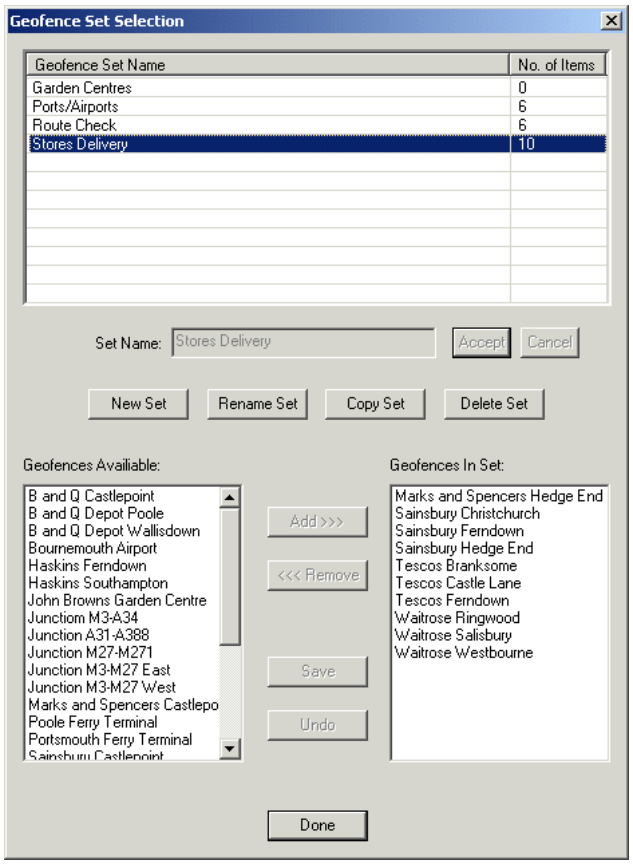


Figure 3-17 Geofence Set Selection Dialog

New Set To Enter New Geofence Set. Enter new Set name, then

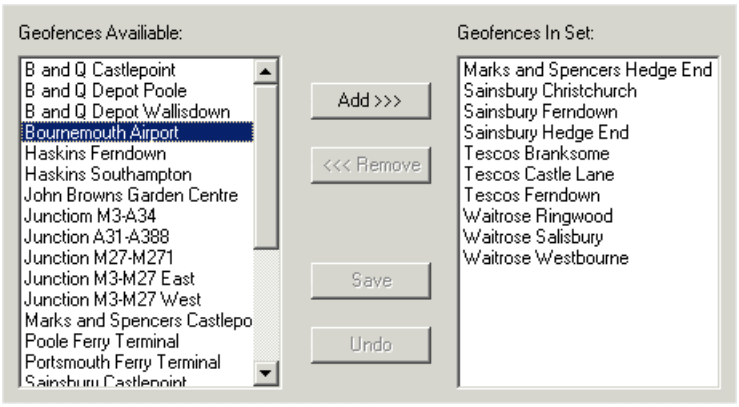
Accept

To edit existing **Geofence Set** Left click on Set name.

To copy existing Set Left click to highlight required Set.

Copy Set Enter new Set Name

Rename Set To rename existing Set Left click to highlight required Set. Enter new Set name.



Left click to highlight required number in **Geofence Available** window and move to **Geofences In Set** window by double clicking or

Add >>>

To remove numbers from **Geofences In Set** window, Left click to highlight number and double click or

<<< Remove

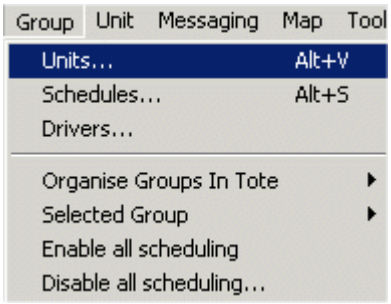
Save After completing required **Geofence Set**

Undo If changes not required, Undo will remove all recent changes.

If too many Geofences are entered in the **Geofence Set** a warning will be displayed when saving Set. Remove Geofence entries, until you can save without warning being shown. By reducing the **Map Label Text** used, it may be possible to increase the number of Geofences in a Set

3.12.7 Enable Geofence Upload

Select **Units** from **Unit** menu.



Select Unit to be edited or new unit entry. Select **Geofence Settings**.

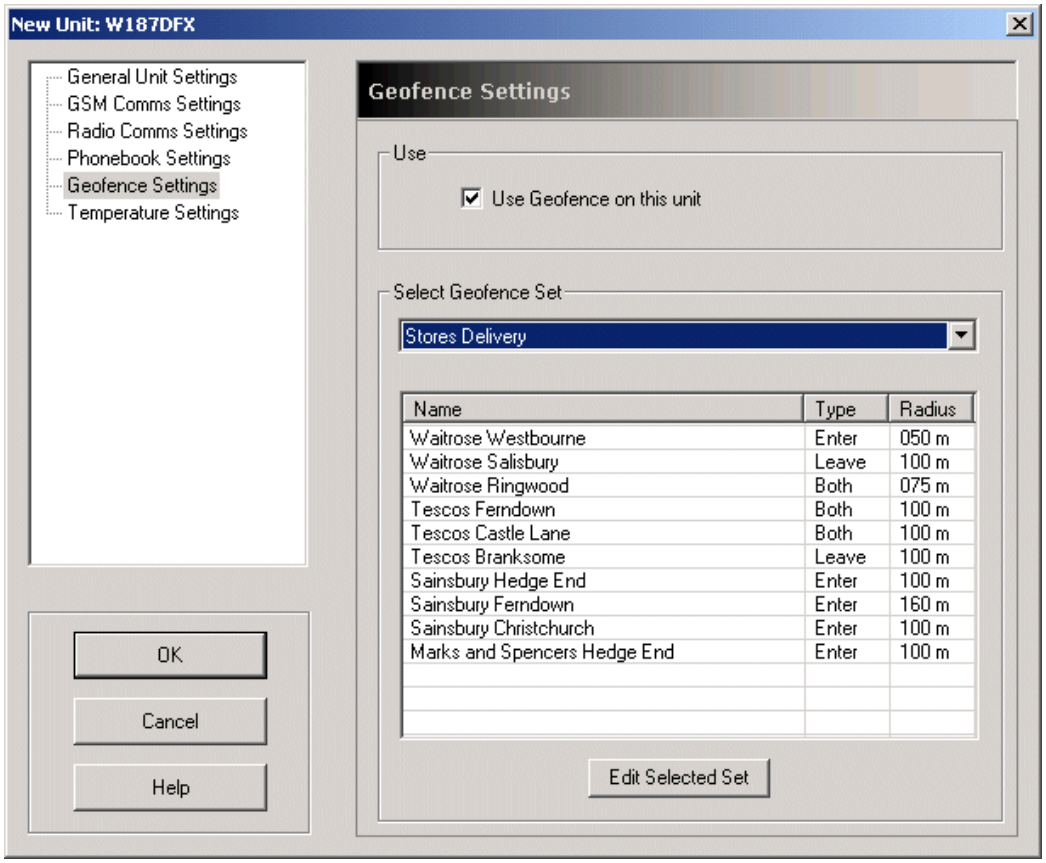


Figure 3-18 Edit Unit Geofence Dialog

Put √ in the ☐ to enable Geofence Upload

Remove √ from ☐ to disable Geofence Upload

Select required **Geofence Set** from **Select Geofence** drop down menu. If the unit is not scheduled to be called for some time you may wish to call it immediately to update its geofence data.

3.12.8 Geofence Alarms and Reports.

All geofence activations are logged and downloaded to the STACC Base stations when the remote unit is called by the Base station. (Both scheduled and unscheduled calls). If the SMS option is selected a **Geofence Alarm** will be activated on receipt of the SMS.

Geofence Reports by Unit or by Geofence can be generated. See 4. Reports and Data Extraction.

3.13 Location Address and Gazetteer.

The address of any position selected on the Map display can be displayed or where Postal or Zip codes are used a gazetteer allows the position and address to be indicated. These positions can be labelled for future reference.

3.13.1 Location on Map

Right Click on map at required location. Select **Show Location** from sub menu.

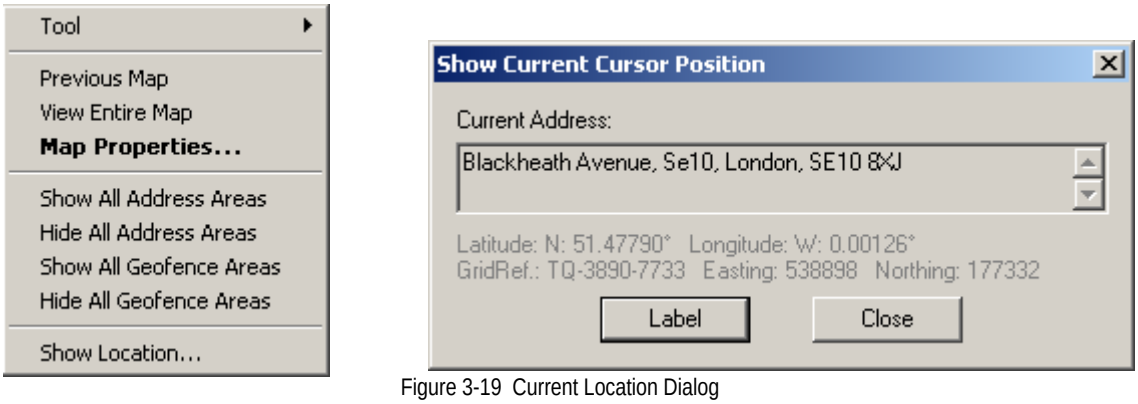


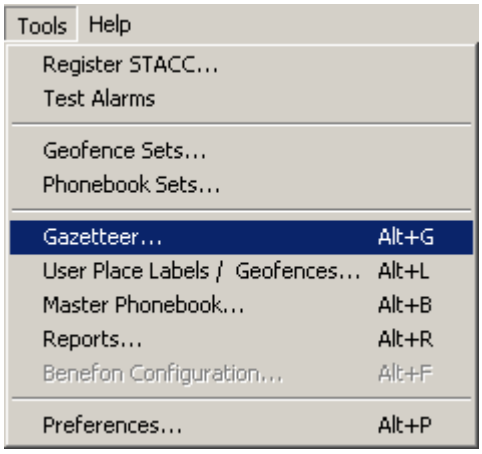
Figure 3-19 Current Location Dialog

Select and name label if required.

3.13.2 Gazetteer.

Enter Co-ordinates, Post or Zip code to display position and address on Map View

The **Gazetteer function** is selected from the **Tools** sub menu



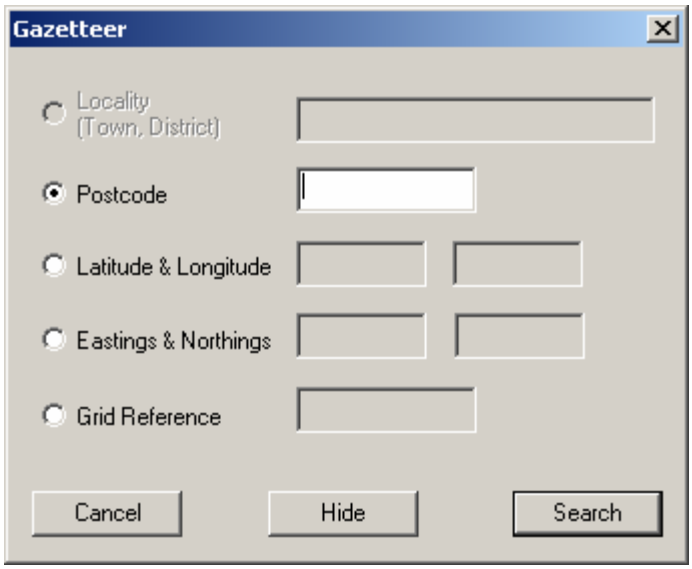


Figure 3-20 Gazetteer Dialog

STACC Displays position and address. Centre of Post code top left corner of Label

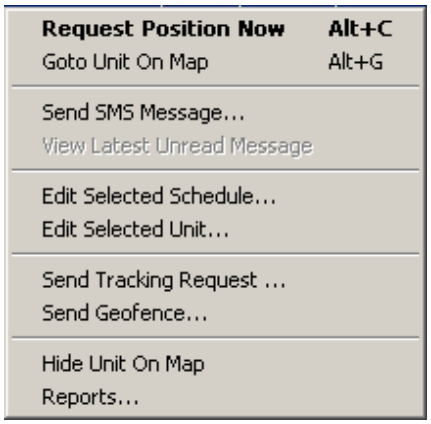
3.14 Benefon Tracking.

3.14.1 Setting tracking.

The Benefon Trac Pro phones can remotely set from STACC to automatically send the last recorded position at a defined interval and for a specified number of times.

To set required tracking parameters:

From **Tote View** select phone to be configured by right clicking to display menu. Select Send Tracking.



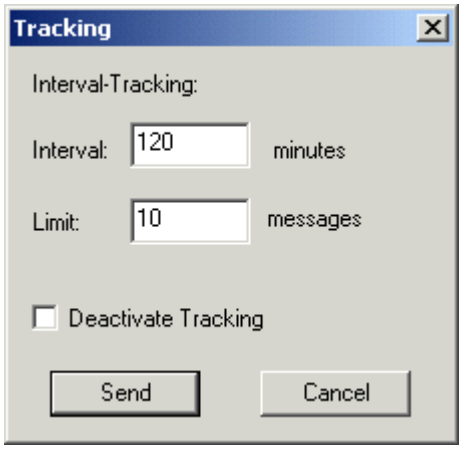


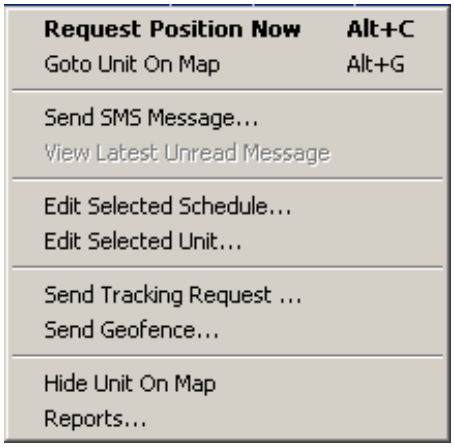
Figure 3-21 Benefon Tracking Dialog

Set Tracking interval. Set number of tracking messages required.

Send To update phone.

3.15 To Deactivate Tracking.

To deactivate tracking parameters. From **Tote View** select phone to be configured by right clicking to display menu:-



Select Send Tracking.

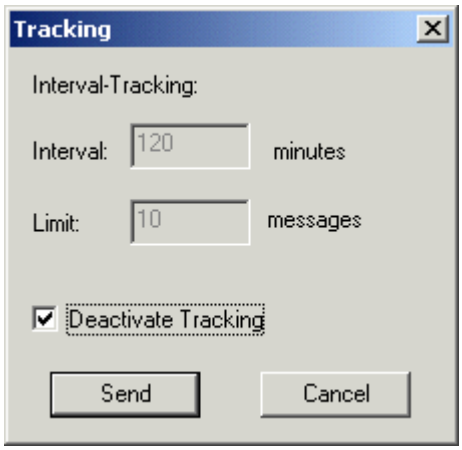


Figure 3-22 Benefon Tracking Dialog

Tick Deactivate Tracking box.

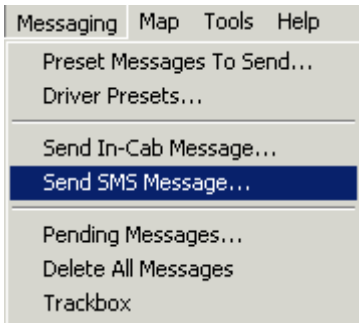
Send To call and deactivate phone tracking.

3.16 SMS Text Messaging and Benefon Status Messages.

STACC supports the sending and receiving of SMS messages from any phone that is registered with STACC. Benefon Status messages are also received and displayed by STACC.

3.16.1 To Send SMS Text Message.

From Main Menu select Message Menu select **Send SMS**.



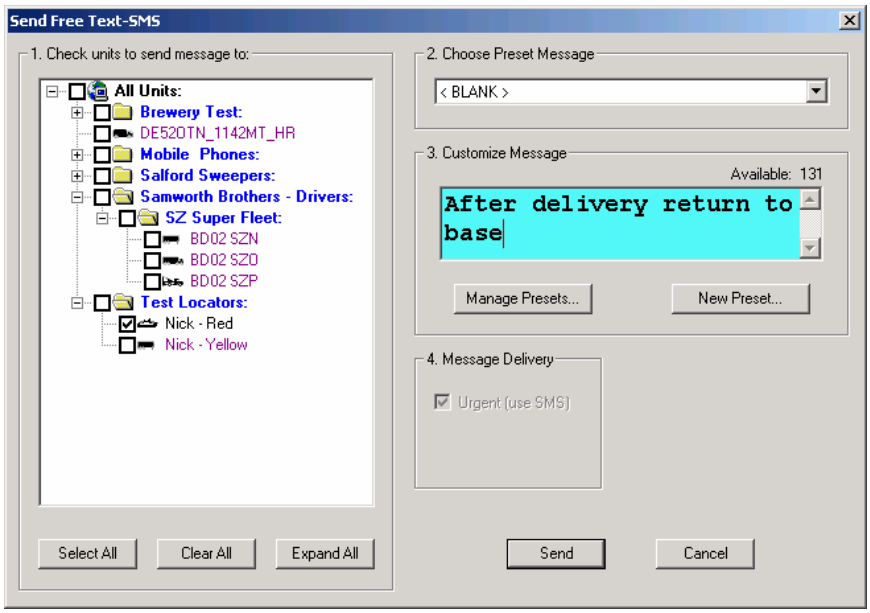


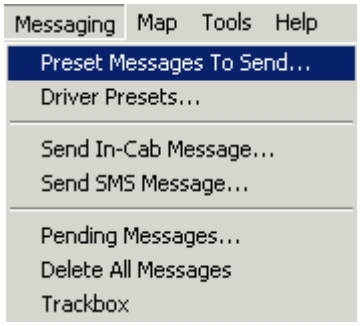
Figure 3-23 Send Free Text SMS Dialog

Tick box of units to which SMS is to be sent (one or more). Select **Preset Message** or enter **Customised Message**

Send To send SMS.

3.16.2 Enter/Edit Preset Messages.

From Main Menu select Message Menu, select Preset Messages To Send



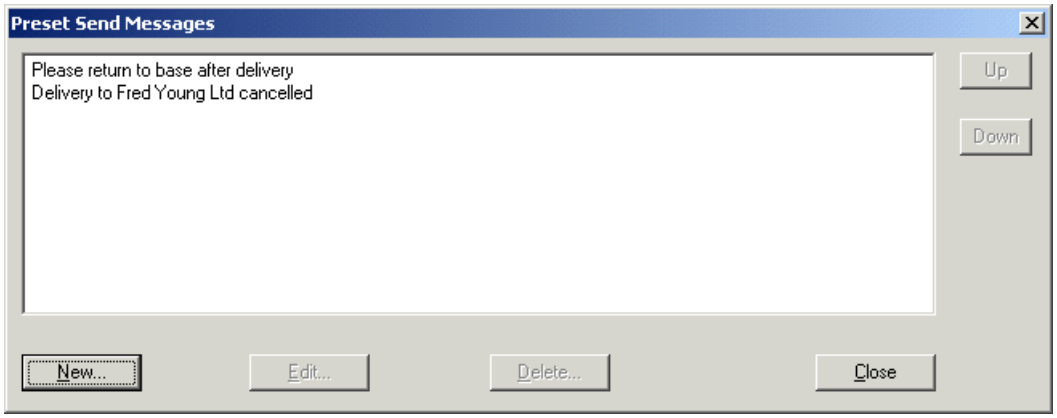


Figure 3-24 Preset Send Messages Dialog

To edit new message.

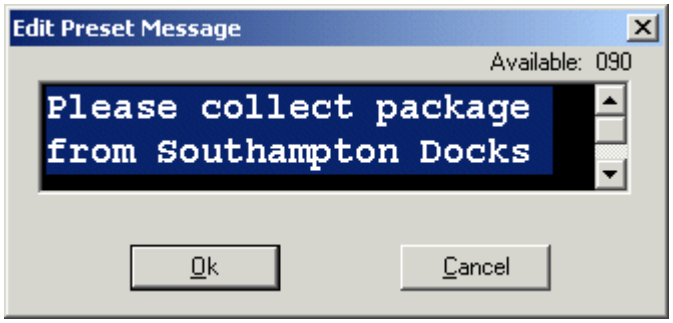


Figure 3-25 Edit Preset Message Dialog

Existing messages can be selected and edited.

Customised messages can also be added to the Preset Messages from Send Free Text SMS by clicking on.

3.16.3 Receiving SMS Text and Benefon Status Messages.

Received SMS Text Messages and Benefon Status Messages are displayed on the Message View.

Benefon Status Messages include position information which will be used to update the **Tote View** and the **Map View** location of unit.

3.17 Benefon Geofencing.

The Benefon Trac phone supports simple geofencing. A single area is defined by a point and radius. The phone can be set to trigger the geofence message either by being inside or outside the defined area (not both).

A time interval is set at which the phone will look to see if it is in (or out of) the defined area. If the geofence is broken at this point an SMS message will be sent to the Base Station.

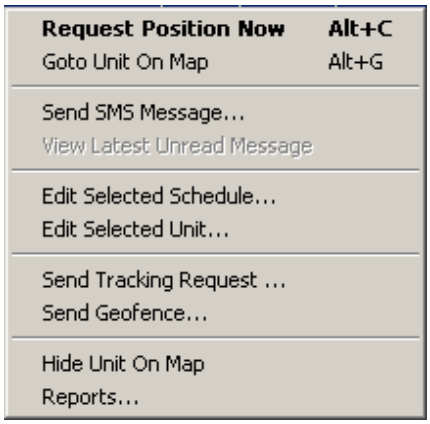
Note: If the condition exists at the next time interval the alarm will be repeated unless the geofence is deactivated by the Base Station.

3.17.1 To Define Geofence Area.

See 2.12. User Defined Places - Labels and Geofences to enter Geofence details.

3.17.2 To Upload Geofence.

From **Tote View** right click on Benefon unit to display menu, select Send Geofence.



Select required geofence by tick in box.

Select Notify inside or outside

Set interval at which phone examines geofence status.

Press Send.

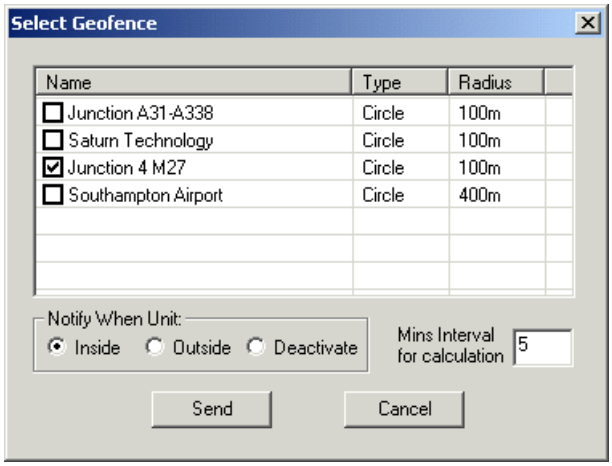


Figure 3-26 Select Benefon Geofence Dialog

3.17.3 To Deactivate Geofence.

Select unit as in **3.17.2** and enter Select **Geofence** as above.

Select Deactivate.

Press Send.

3.17.4 Received Geofence Messages.

Received Geofence messages are used to update the **Map Screen** and the **Tote Screen** unit positions.

Various Geofence reports are also available.

3.18 Keyboard Short Cuts.

Primary screens are **Map Screen**, **Tote Screen**, **Message Screen** and **Diagnostic Screen**.

Short Cut	Function	Valid from Primary Screen
Alt+A	Display/Clear all Status Windows.	All
Alt+B	Display Master Phonebook	All
Alt+C	Request Call to selected Unit.	Tote and Map
Alt+D	Display Diagnostic Screen	Tote, Map, Message
Alt+F	Benefon Trackbox Configuration	All
Alt+G	Display Gazetteer.	Tote and Map
Alt+I	Display Message Screen	Tote, Map and Diagnostic
Alt+L	User Places List	All
Alt+M	Go to Map Screen.	Tote, Message and Diagnostic
Alt+P	Display Preference List.	All
Alt+R	Display Report Centre	All
Alt+S	Display Call Schedule List.	All
Alt+T	View Tote Screen	Map, Message and Diagnostic
Alt+U	Display Unit Details List.	All
Ctrl+C	Copy Map.	Map
Ctrl+L	Go to Selected Unit in Tote/Map	Tote and Map
Ctrl+P	Print Main Map display	Map
Ctrl+S	Save Configuration File.	All
Ctrl+ (Keypad +)	Expand columns to fit data	Tote and Tables

- Hold Ctrl to reverse function of **Zoom** tools.
- Space Bar will √ or clear any highlighted ✎ .In **Tote Screen**
- Numeric keypad☝and❸ will expand and collapse selected **Group** structures.
- ✱ will expand all contained **Sub-groups**.

4 SYSTEM MANAGEMENT.

The management of the STACC system includes setting of **Preferences**, setting up **Calling Schedules** and **Modem parameters** and entering **Unit** and **Group** details. These entries may be later modified as necessary. When the system is running various reports and status windows are used to monitor the operation of the system.

4.1 Mapping.

The Main map and Overview map data will normally be set when the mapping software is initially installed. You may wish to move the **Home** location or change the **Overview Zoom Levels** or **Startup Setting.**

4.1.1 Home Location.

The **Home** marker, which can be used to centre the map, can be positioned, to mark the Base Station, normal unit depot or centre of operation. To position the marker, move the map so that the point that is to be **Home** is at the centre of the map display.

Click on **Set Home Location** on the **Map menu** to place **Home** marker on centre of map.

If **Home** position is not exact, repeat process. (Hint: Zoom in before repeating)

To go to **Home** Location

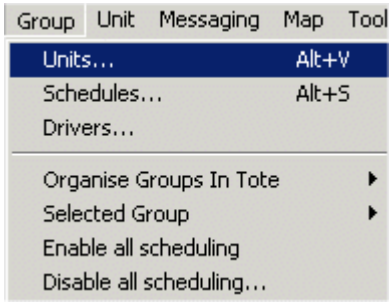
4.2 Unit Management.

After a unit is equipped with a STU details must be entered into the STACC Base Station to enable communication between the base station and the unit. The unit may be monitored from more than one Base Station. One Base Station designates the unit as a **Primary.** Other Base Stations can monitor the unit as a **Secondary** provided they have the access code. The Base Station that has **Primary** control has full monitoring, messaging facilities and controls the **Access Code**. Stations with **Secondary** control can not receive messages from the unit, though messages can be sent to the units. (If In Cab Display fitted) They cannot make any changes to data stored in the STU such as Phone numbers, Logging intervals and Geocoding details.

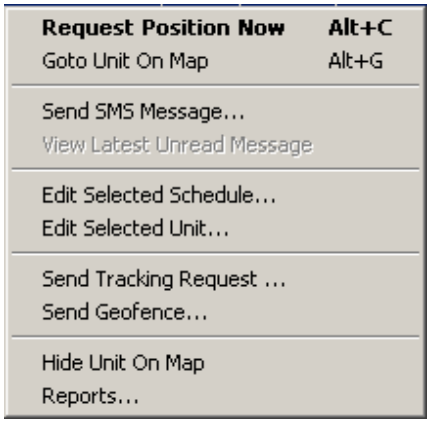
4.2.1 Adding/Editing Unit details.

Unit details are added or edited in the **Unit Collection**.

Select the **Group menu** and click on **Units** to enable **Unit** Collection.



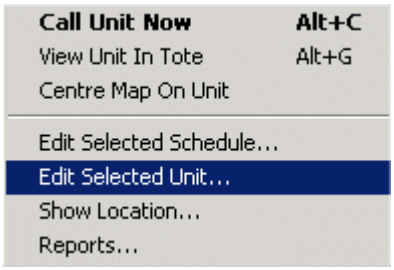
To edit existing units the **Edit Unit** window can be enabled directly from the **Tote Screen** and **Map Screen**.



Right click on unit to enable sub-menu in **Tote Screen**.

In Map Screen Left click on unit.

Then **Right click** to enable sub-menu



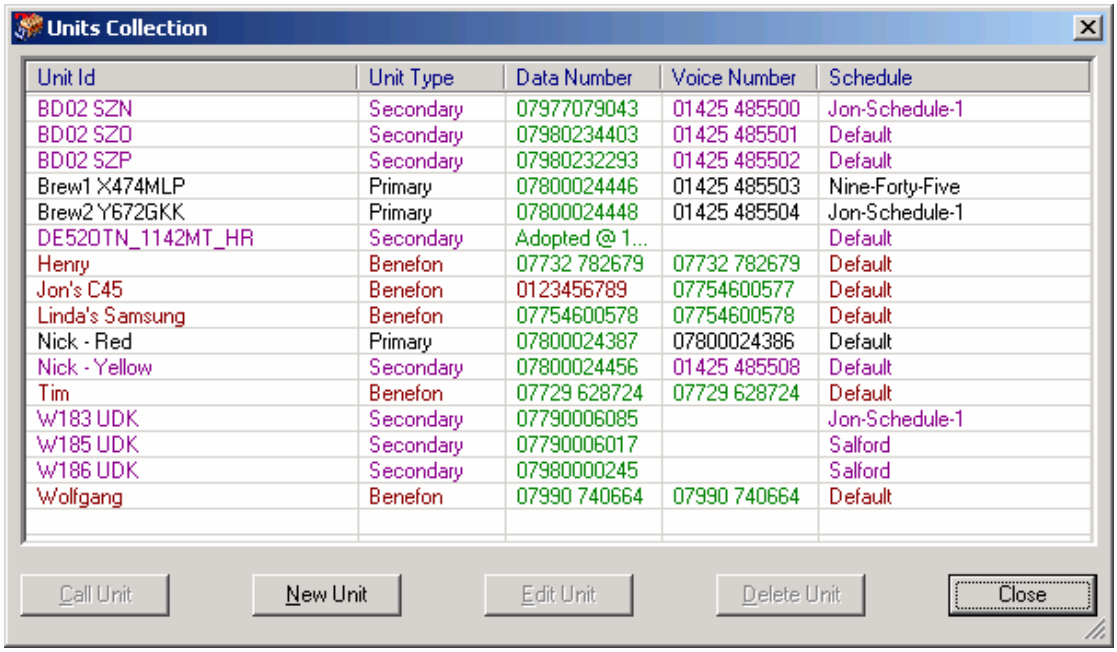


Figure 4-1 Units Collection Dialog

New Unit To enter new unit

Or double click on clear area of **Unit Collection** to enter a new unit **details**

To edit, double click on Unit

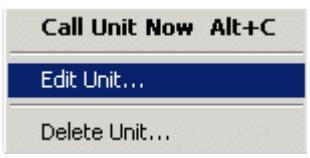
Or **Left click** on existing **Unit.**

Edit Unit To edit unit details

To delete, **Left click** on existing **Unit**

Delete Unit To delete.

Right click on unit to enable contextual menu to Edit or Delete.



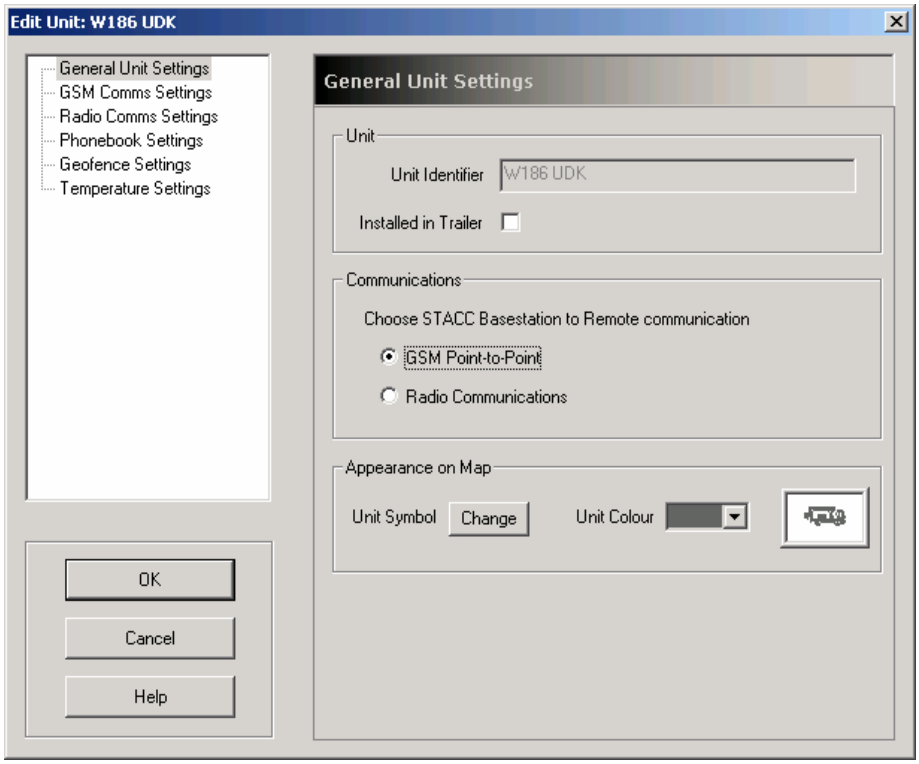


Figure 4-2 Edit Unit General Dialog

For new units, enter the **Unit Identifier**, this can be any alphanumeric id. Set **GSM** or **Radio** communications, **Unit Symbol** and **Unit Colour.**

Tick **Installed in Trailer** ☐ if the actual STU (not tag) is fitted in Trailer Unit.

Select GSM Comms Settings or Radio Comms Settings as appropriate.

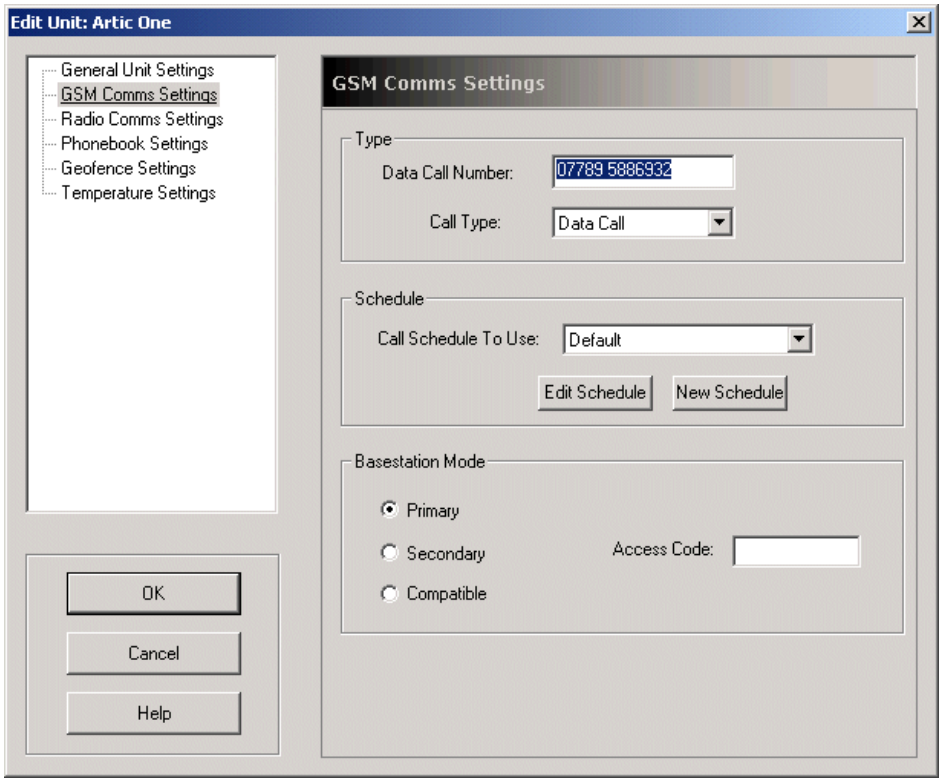


Figure 4-3 Edit Unit GSM Comms Dialog

Enter the **Data call Number,** select or edit a **Call Schedule** (If a suitable schedule does not exist. See **4.3.1.** to produce a new schedule.), select **Primary** or **Secondary** and enter **Access Code**

Note: Access Code for **Secondary** is the code set by the Base Station which has **Primary** control.

Select Phonebook Settings.

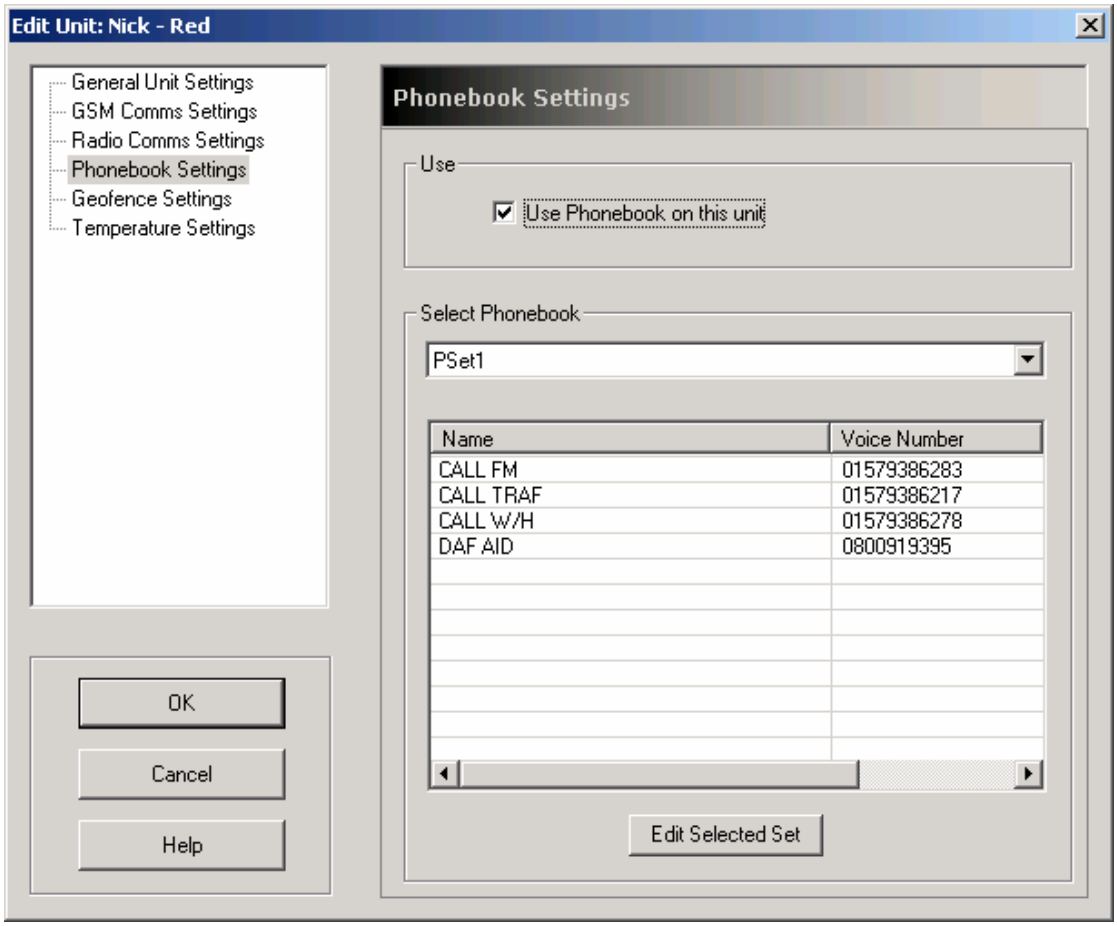


Figure 4-4 Edit Unit Phonebook Dialog

Put √ in the ☐ to enable Phonebook Upload

Remove √ from ☐ to disable Phonebook Upload

Note: The current version of STACC only supports a single phonebook to be used by all units. In the very near future the option to use more than one phonebook will be introduced.

Select Geofence Settings

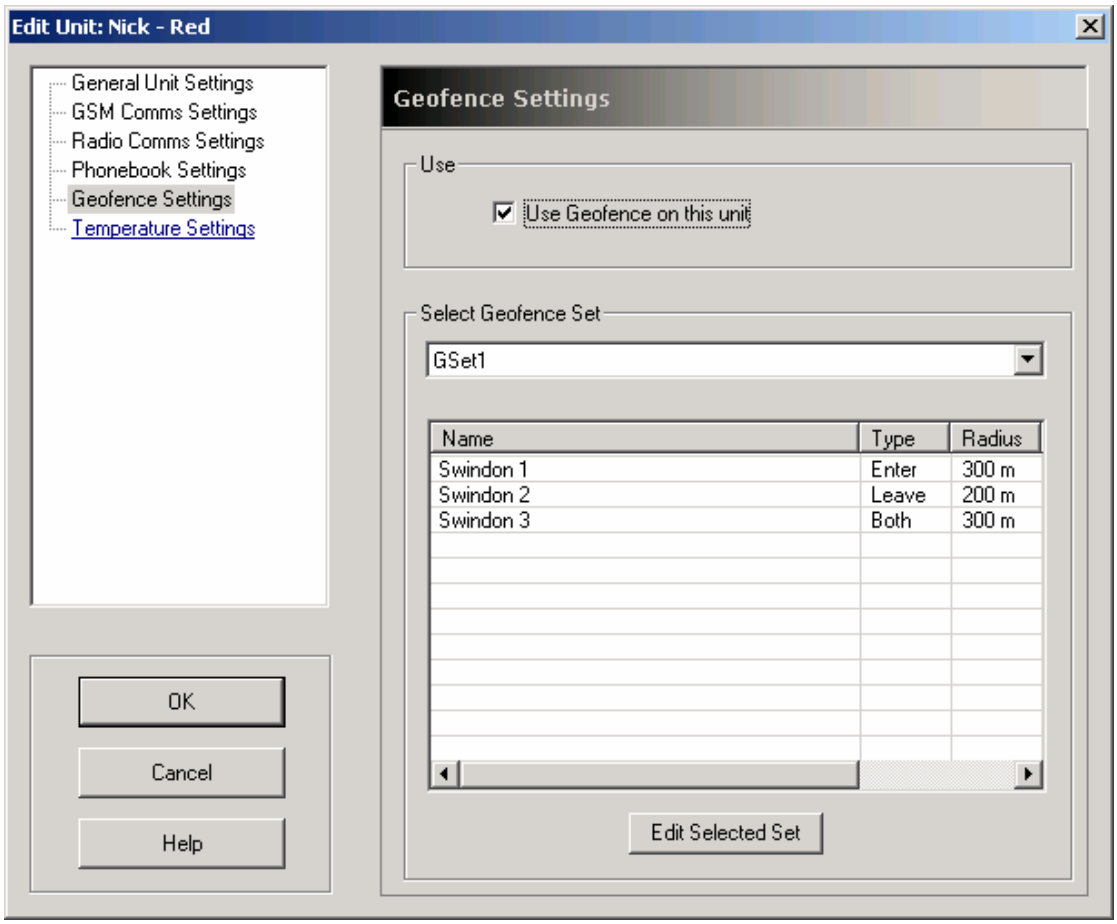


Figure 4-5 Edit Uint Geofence Dialog

Put √ in the ☐ to enable Geofence Upload

Remove √ from ☐ to disable Geofence Upload

Select Temperature Settings.

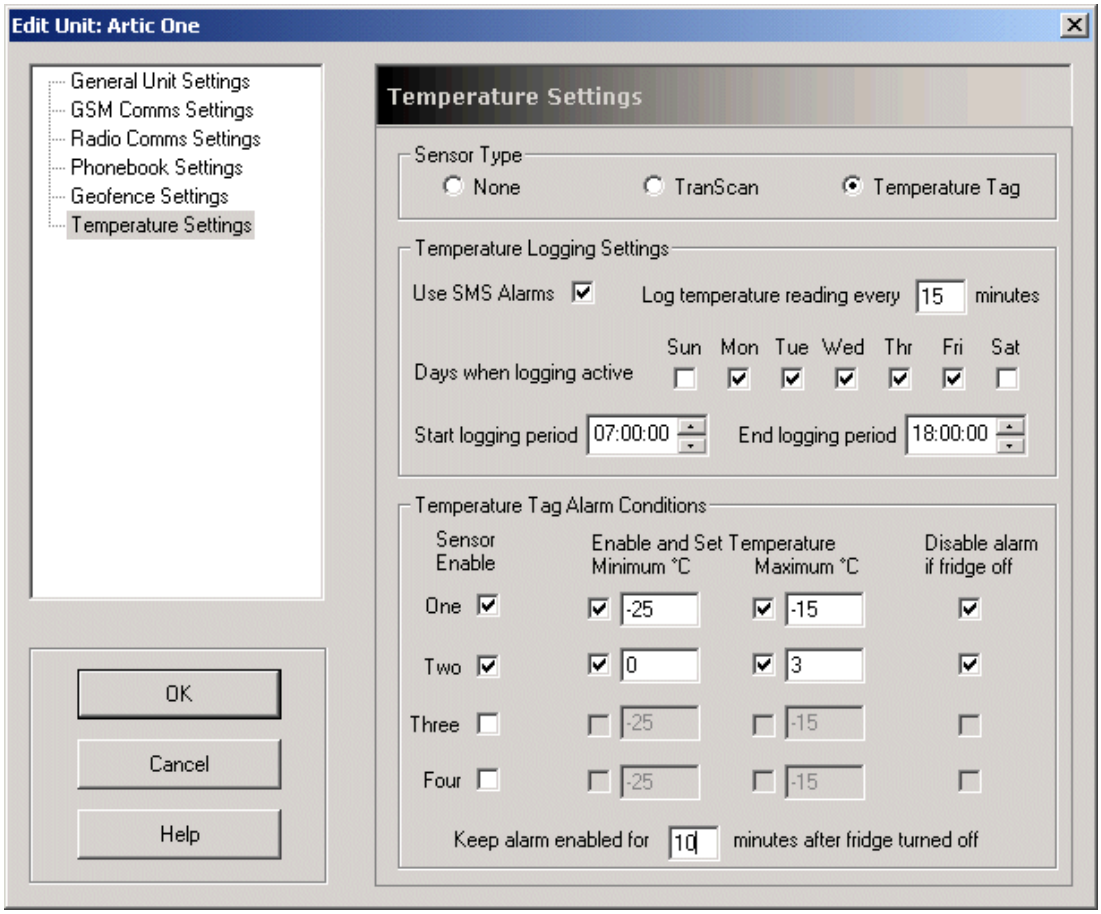


Figure 4-6 Edit Unit Temperature Dialog

Select Sensor type fitted.

If Temperature Tag fitted complete Temperature Logging Settings and Temperature Tag Alarm Conditions.

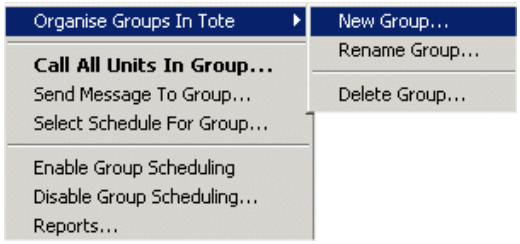
If Transcan Unit fitted complete **Temperature Logging Settings**. Alarm conditions set locally on actual Transcan unit.

4.2.2 Group Structure.

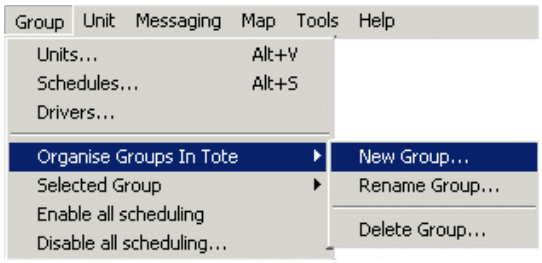
If required the units can be organised into groups on the **Tote Screen**. (E.g. Despatch, Service, and Sales). This function is particularly useful where calls may be requested to groups of units.

To change the group structures, select **Tote View** left click on top line to add new group or on existing **Group** line if new entry to be a Sub-group

Select **Organise Group** from **Group menu.**



Alternatively **Right click** on highlighted line to access sub menu.



Enter new name. Click **New Group** to enter name of group on **Tote Screen**

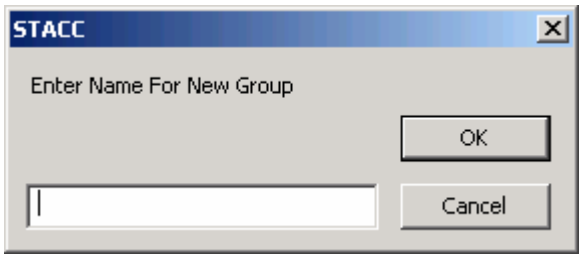


Figure 4-7 Group Name Dialog

New Group name will appear on **Tote Screen**. Units can be moved between Groups by clicking and dragging the unit to new Group.

To rename existing Group, click on Group name, select **Organise Group** sub-menu and click **Rename Group** to enter new name.

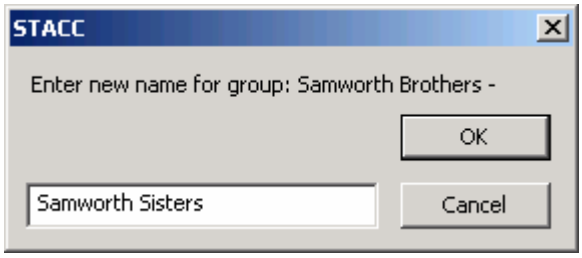
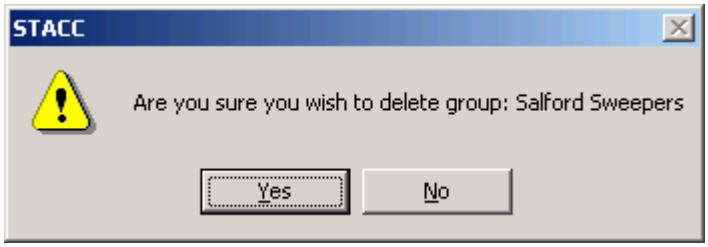


Figure 4-8 Group Rename Dialog

To delete an existing Group name, click on Group name, enable **Organise Group** sub-menu and click **Delete Group**. Confirm deletion.



When a Unit name is deleted all units are placed in the containing Group, Units can be individually deleted or click and dragged to new Group.

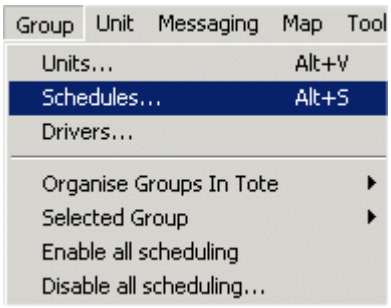
4.3 Communications Management.

4.3.1 To Enter/Edit Call Schedules.

STACC supports multiple **Call Schedules**. A schedule can be applied to individual units a number of units or a Group. The schedules set the call interval times and data logging rate at the unit. When setting up schedules it is important to plan carefully to ensure that calls are kept to the minimum for cost efficient operation. The interval at which data is logged will also effect the maximum time between calls to avoid loss of logged data. See Appendix, which gives recommended calling times and costs against data logging rates.

4.3.1.1 To Enter/Edit Call Schedule from Group menu.

Select the **Group menu** and click on **Schedules** to access **Call Schedules.**



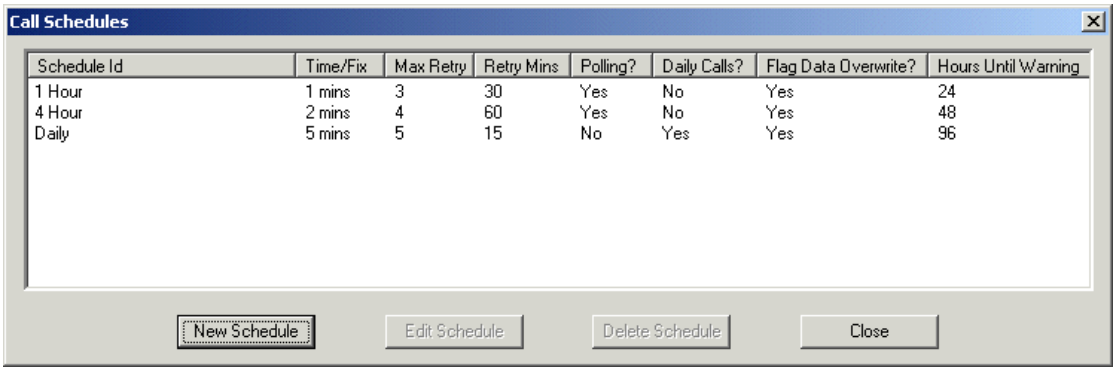


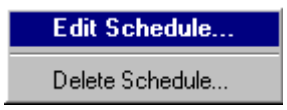
Figure 4-9 Call Schedules Dialog

New Schedule or double click on clear area of **Call Schedule** for new schedule.

Edit Schedule Click on existing schedule. To edit. Or double click on existing schedule.

Delete Schedule To delete click on existing schedule. To delete.

Right click on schedule for contextual menu. To Edit or Delete.

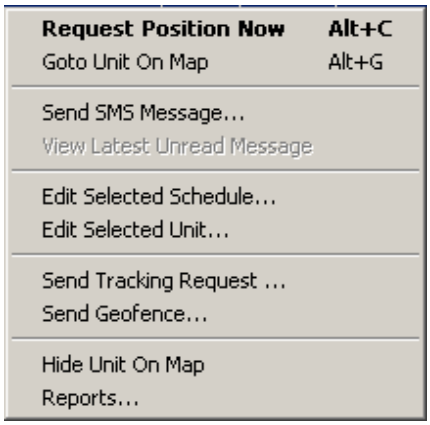


4.3.1.2 To Edit Existing Schedule from Tote or Map Screen.

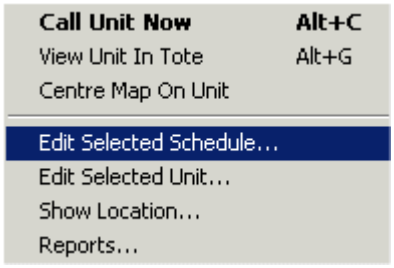
Right Click on existing schedule and select Edit Schedule or Delete Schedule.

To edit existing call schedules the **Edit Call Schedule** window can be enabled directly from the **Tote Screen** and **Map Screen**.

Right click on unit in **Tote Screen** to enable sub-menu.



Click to select unit on **Map Screen** then **Right click** to access contextual menu.



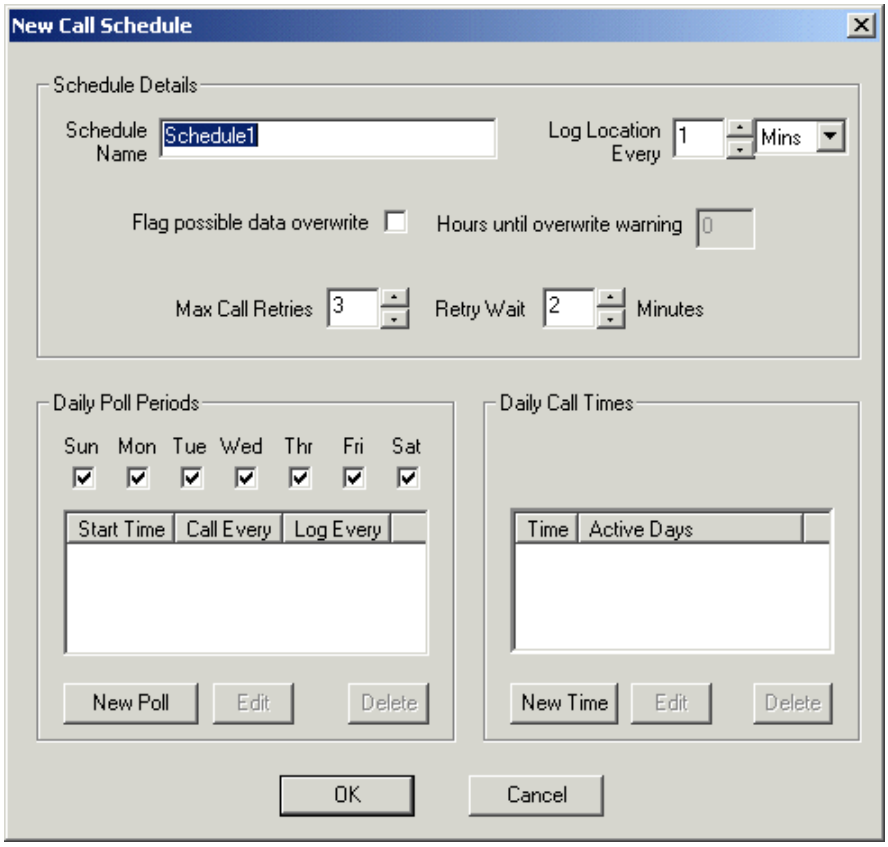


Figure 4-10 New Call Schedule Dialog

There are three groups of controls, Schedule Details, Daily Poll Periods, and Daily Call times.

4.3.1.3 Enter/Edit Schedule Details

Each schedule must have a unique **Schedule Name**.

Log Location Every determines how often data is logged on the unit's STACC unit.

If **Flag possible data overwrite** enabled a warning will be shown on the **Tote Screen** indicating that data may be overwritten in the remote unit. This is usually caused by being unable to contact the unit for a long period of time due to GSM failure etc.

To overcome the limitations inherent in mobile data communications, the user sets the number of times a unit is to be re-called in the event of call loss, **Max Call Retries**. The time interval between each retry is also specified, **Retry Wait**.

4.3.1.4 Enter/Delete Schedule Poll Period.

Daily Poll Periods are used to define how calls are periodically made throughout the week. Different call rates may be defined for different times of the day. The user may define the daily polling schedule over a 24-hour period, starting from 00:00. This is then applied to selected days of the week.

By default a new **Call Schedule** is set to make no periodic calls. **Poll Periods** may be created, edited and deleted using the appropriate buttons.

Before creating your first **Poll Period**, ☐ box to determine the days of the week when all **Poll Periods** will be active.

New Poll To enter new Poll periods.

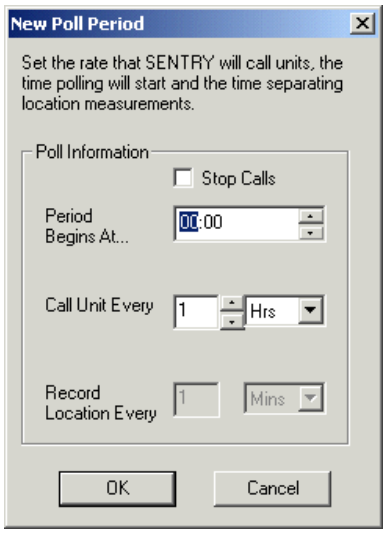


Figure 4-11 Poll Period Dialog

Click on existing Poll to edit existing periods.

Edit To edit.

Enter the time **Period Begins At**. Calls will be made after this time.

Note: if you do not define a **Poll Period** starting at 00:00, no calls will be made from 00:00 to the start time of the first **Poll Period** you define. If you wish to stop calls from a particular time: create a new **Poll Period**, specify the start time and place a check next to **Stop Calls**. No calls will then be until either: -

The start of the following **Poll Period** that day (if there is one).

Or the start of the first **Poll Period**, for the next scheduled poll day.

Delete To delete **Poll Period** click on existing Poll.

4.3.1.5 Enter/Edit Daily Call Times.

Daily Call Times are used to define specific times and days of the week to make calls. By default a new **Call Schedule** is set to make no calls at specific times. **Daily Call Times** may be created, and edited.

New Time To enter new call time.deleted using the appropriate buttons.

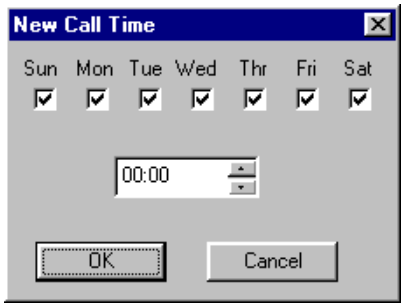


Figure 4-12 Call Time Dialog

☐ box to determine the days of the week when **Call Time** will be active and set **Time**.

To edit existing time. Select existing time. To enter **Call Time**

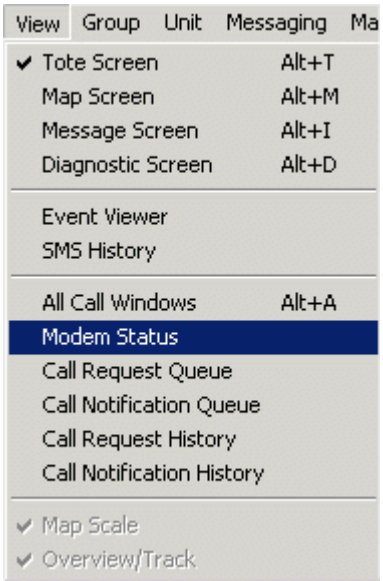
To delete existing time. Select existing time. To delete

4.3.2 Modem Set-up/Warnings.

STACC Base Station can be operated with one or more modems. The number of modems required will depend on the total number of units being monitored and the quantity and number of calls made to each unit. If STACC is configured for Emergency calls it is recommended that a dedicated modem be used for incoming Emergency calls. STACC allows only one modem to be set for incoming Emergency calls and only one for incoming low priority calls. One modem can be set to receive both Emergency and low priority calls.

4.3.2.1 Initialise Modems.

STACC must have at least one modem enabled to communicate with the unit group. STACC will enable warnings if modems disabled. The modems are set-up from the **Modem Status** window that is enabled from the **View menu**.



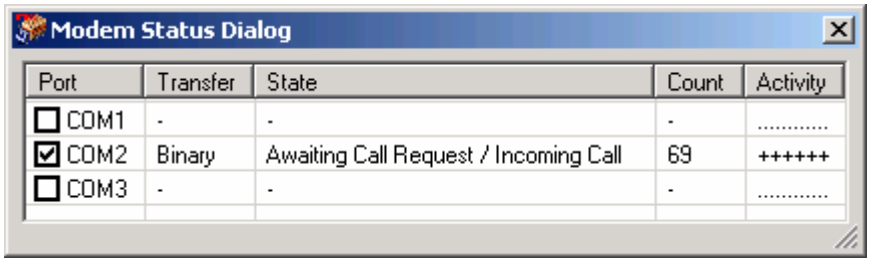


Figure 4-13 Modem Status Dialog

Click ☐ to enable/disable selected Modem.

To set up Modem **Right click** on selected Modem

Port Properties To enter COMx Port Properties.

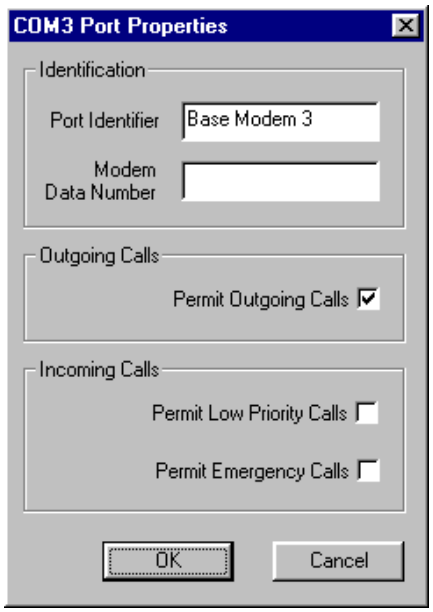


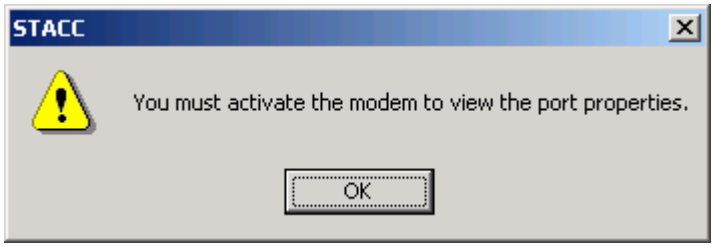
Figure 4-14 COM Port Properties Dialog

Do not enter Modem Data Number unless Incoming calls permitted. For **Emergency Call** support Modem Data Number must be entered.

If incoming calls permitted, enter Modem Data Number to enable Incoming Calls set up.

The Base Station uploads to the unit, the incoming call **Modem Data Number**. Units have to be called at least once before they can initiate an incoming call.

If Modem not activated when **Port Properties** enabled this warning is displayed.



4.3.2.2 Modem State Messages.

"Initialising"	Base station modem is being set-up by STACC.
"Awaiting for call request" "Awaiting Call Request/Incoming Call" "Awaiting Incoming Call"	Modem is ready to make or receive a call, as soon as an incoming call received the call scheduler issues a call request or the user initiates a call-on-demand.
"Finding Modem"	Modem has taken a call request and STACC is verifying that modem has a good connection with the base station PC.
"Dialling xxxxx xxxxxx (<Unit Name>)"	STACC is dialling a unit on the road and the remote unit has not answered the call yet.
"Awaiting Data Connect"	Remote modem located by the GSM provider and STACC is waiting for GSM provider to establish a reliable connection.
"Sending Synchro"	GSM provider claims to have set up a dial-up connection between base and remote modems, STACC is now sending a synchronisation message which the remote unit will attempt to acknowledge. STACC will not initiate the download procedure until this acknowledgement is received. Synchronisation is required because the GSM network does not inform both parties of the CONNECT simultaneously. Synchronisation ensures both parties are ready before transfer of positional data takes place.
"Sending UploadInit Message"	STACC base station software is satisfied that a good link has been established with the remote. The data transfer protocol is being initiated by the base station.

"Sending State Count Msg" "Sending Upload Integer State Msg" "Sending Upload States	STACC is transferring logging rate information to the remote unit.

Complete Msg" "Receiving State Count Msg"	
"Receiving DownloadHdr Message"	Base station is receiving current UTC time (for keeping the PC's internal clock accurate).
"Receiving DownloadMsg"	Base station is receiving positional data from the remote unit.
"Sending Ack"	Base station is acknowledging the receipt of a packet of data from the remote. A packet is set up by default to be 100 messages.
"Sending EndDownload Message Ack"	Base station is acknowledging that the latest positional data has been received.
"Sending EndComm Message"	Base station is informing the remote unit that communication has finished.
"Terminating Data Connection"	Base station is disconnecting the GSM data link with the remote unit.
"Waiting for 'NO CARRIER'"	Base station is waiting for the GSM network to disconnect the phone call.
"Hanging Up"	Base station modem is completing its call shutdown.
"Terminating State Machine"	STACC is deactivating the base station modem
"Modem Thread Shut Down"	Base station modem is deactivated.
"Answering Incoming Call"	Responding incoming call
"Receiving Call Back Init"	Receiving identity of and reason for incoming call.
"Receiving Spot Location"	Receiving spot location download.

4.3.2.3 Modem Warnings.

Warnings are displayed in the event of Modem failures or if the operator closes down a Modem used for Emergency Calls.

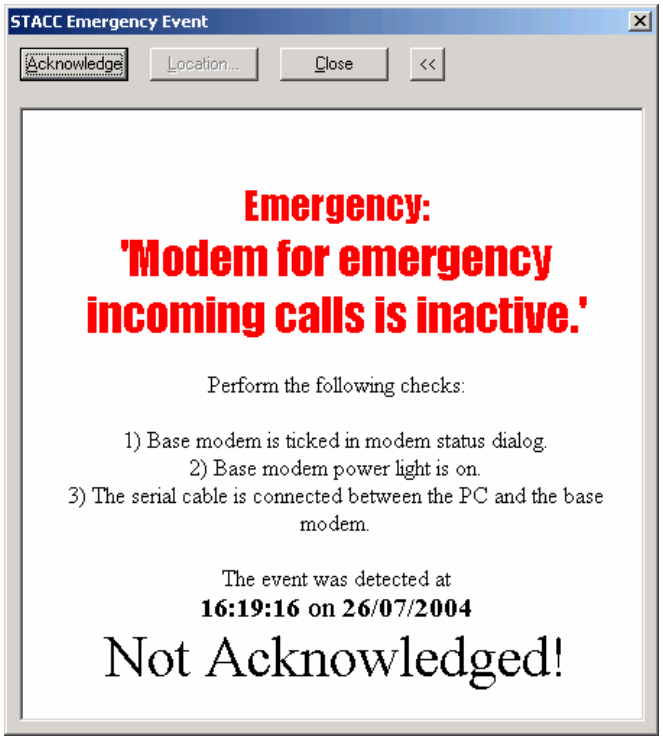


Figure 4-15 Modem Warning Dialog

If you really wish to disable the Emergency Modem to clear warning

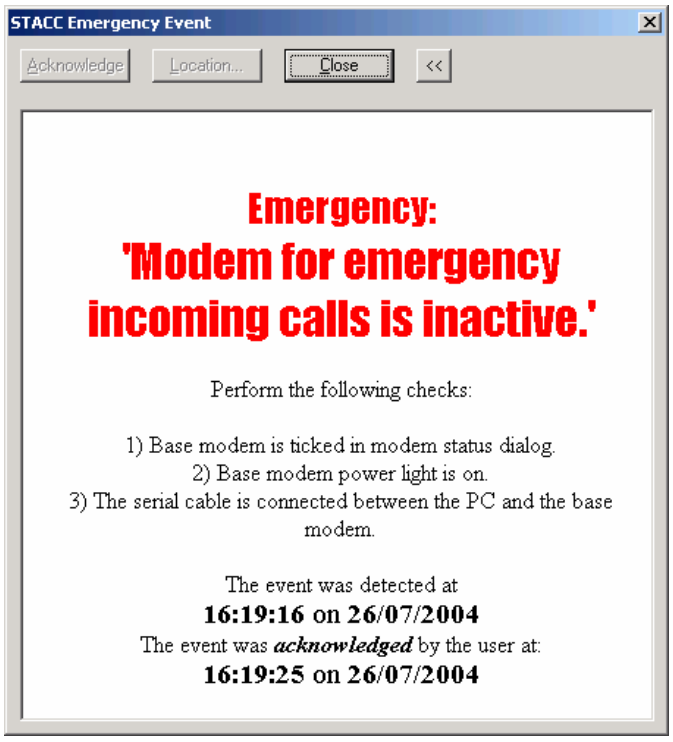
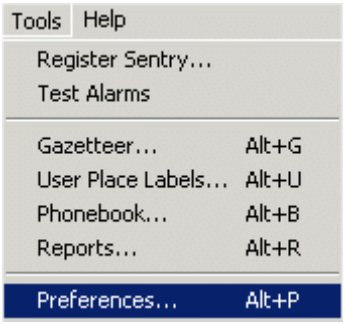


Figure 4-16 Modem Emergency Warning

4.4 Preferences.

The **Preference** window is used to set options for General operation, Unit, Communications, Database and Internet.

Select **Preferences** from **Tools menu.**



4.4.1 General Preferences.

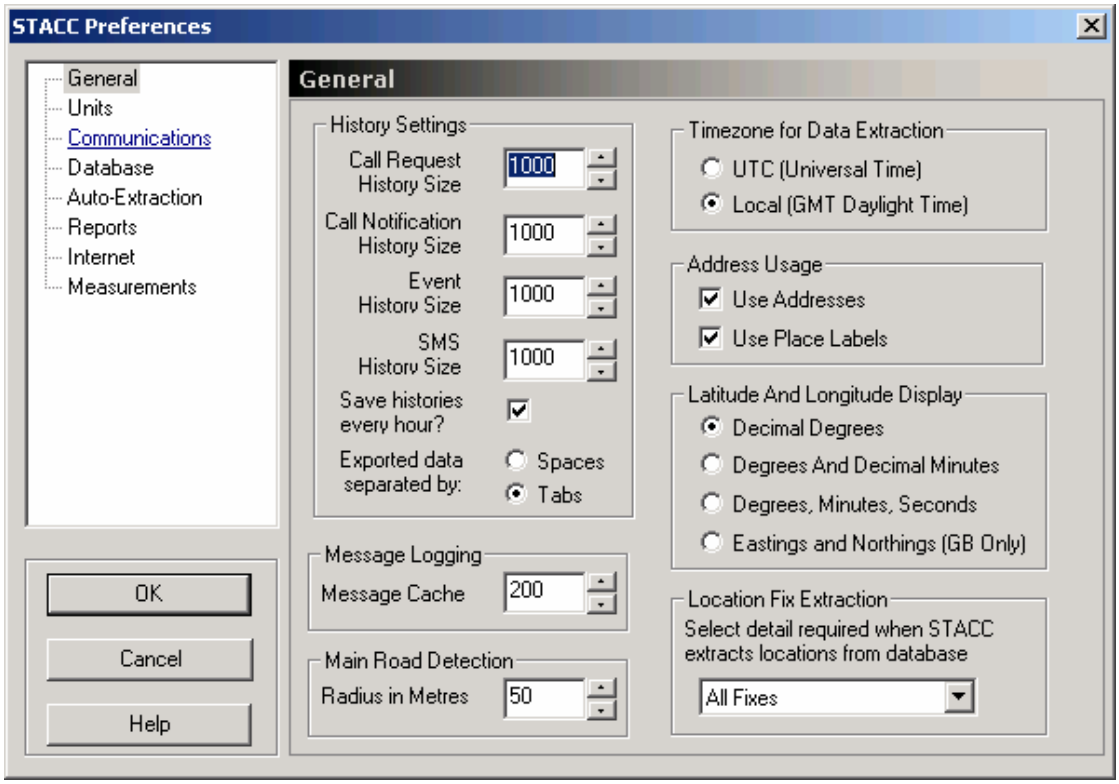


Figure 4-17 General Preferences Dialog

The **General Preferences** window is used to set: -

History Sizes. The number of entries that can be stored in the **Call Request History**, **Call Notification History** and **Event Viewer** (See **4.5.4., 4.5.5., 4.5.1.)**. Default setting **1000**.

Message Logging. Number of incoming data messages stored in message Cache before data saved to disc. Default setting **400**.

Timezone for Data Extraction. Select **GMT** (Universal Time) or **Local Time Zone** when extracting data. **Map Screen** and **Tote Screen** always use **Local Time**.

Auto-Save Histories and Settings. Enable to save all Histories and Settings.

Location Fix Extraction. Select the interval between fixes used when extracting locations from databases. If the interval at which location data is stored on the unit is greater, (See **4.3.1.**) the unit rate will be used.

Latitude and Longitude settings select units used to display position.

4.4.2 Unit Preferences.

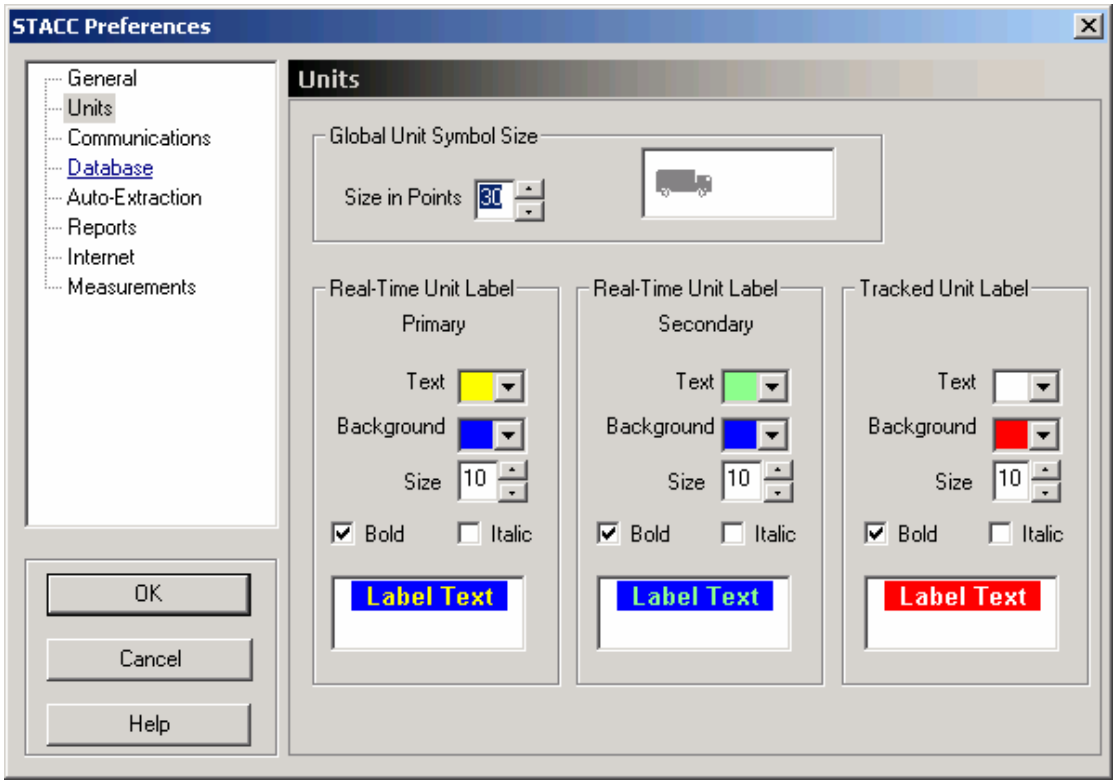


Figure 4-18 Unit Preferences Dialog

The **Unit Preferences** window is used to set the unit symbol size and label details. The default value for **Unit Symbol** size is **30** points and the **Label Type** size **11** points.

4.4.3 Communication Preferences.

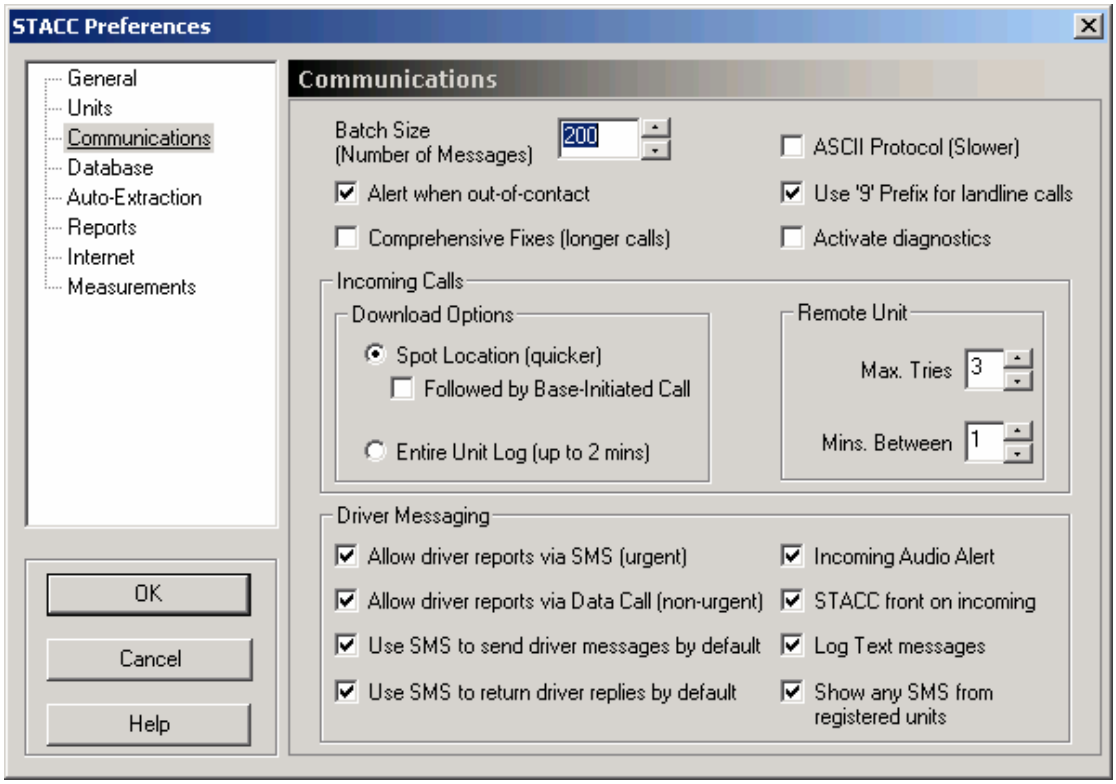


Figure 4-19 Communications Preferences Dialog

The **Communication Preferences** window is used to set parameters relating to both incoming and outgoing calls: -

Packet Size. The number of messages downloaded from the unit in one block before error checking takes place. For efficiency the size of this should be matched with that of the **Message Cache** in the **General Preferences**. Default value **400**.

Comprehensive Fixes. If this is enable the location fixes will include, in addition to normal location data, information on the quality of the Satellite fix, For normal tracking the normal fix information is sufficient, **Comprehensive Fixes** may be required for detailed survey work. Enabling the **Comprehensive Fixes** will increase the download times and therefore the call costs. For a full download this will increase the call time by some 30%.

ASCI Protocol. STACC normally communicates using **binary** data. Operating in **ASCI** will result in longer call times and therefore this function should not normally be enabled. This is primarily for service support.

Use "9" Prefix for outgoing landline calls. Enable if a landline connection, needing a **"9" prefix** is being used by STACC.

Activate Diagnostics. Activates additional messages from the unit STU for service support.

Incoming Calls. If STACC is being used for incoming **Emergency calls**, it is advised that both **Spot Location** and **Followed by Base-Initiated Call** are enabled. This reduces the time that the incoming modem is unavailable for other Emergency calls. **Remote Unit retries** can be set to a maximum of 20.

Driver Messaging. If the STACC messaging system is being used this section controls the SMS and Data communications. In addition it enables the logging of non STACC SMS Text messages.

Selecting **STACC front on incoming** will automatically bring STACC to the front of the display on receipt of a new message if the computer is being used to run other programmes at the time.

4.4.4 Database Preferences.

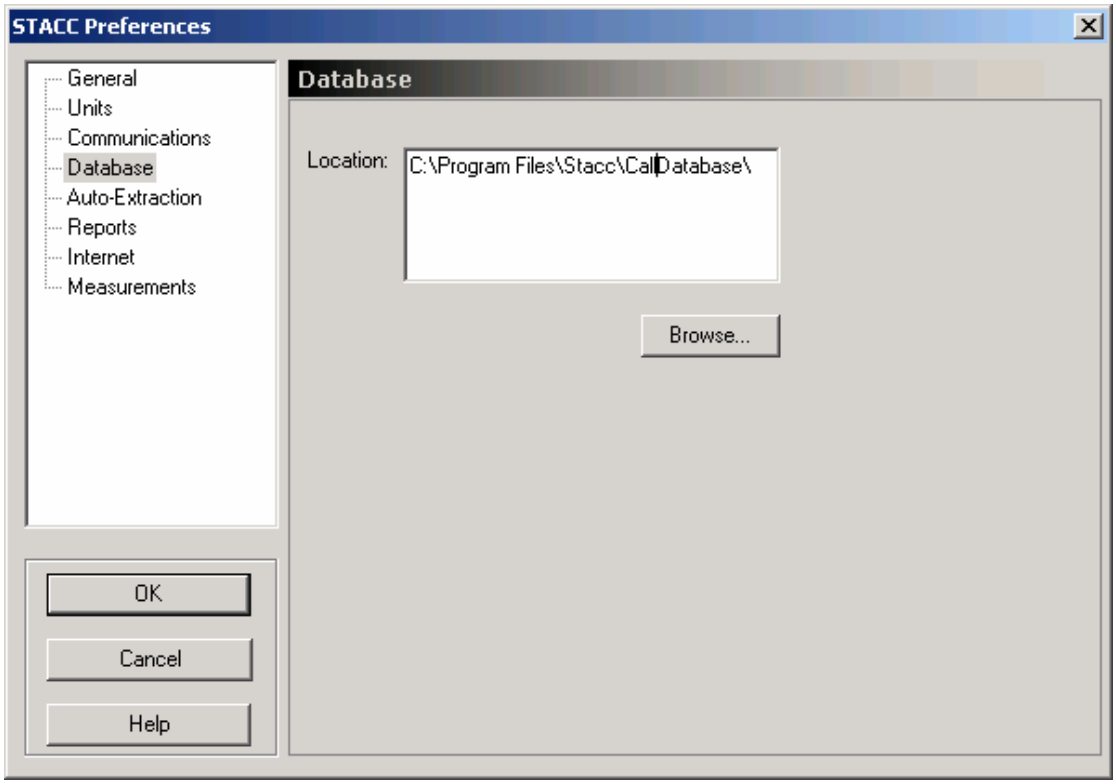
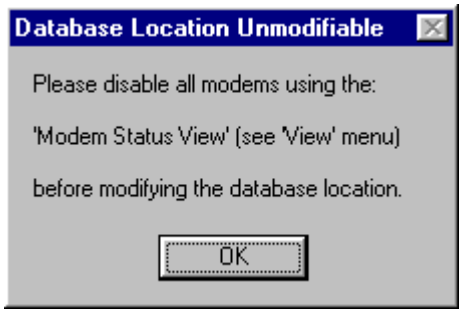


Figure 4-20 Database Preferences

The **Database Preferences** is used to change the location of the STACC database. To change database it is necessary to disable any active modem. A warning will be displayed if STACC modem still active



The following warning is displayed when changing database locations: -

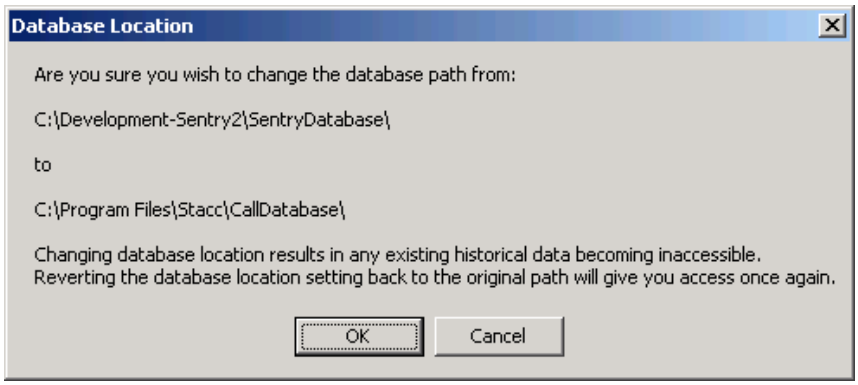


Figure 4-21 Database Location Warning Dialog

4.4.5 Auto Extraction Preferences.

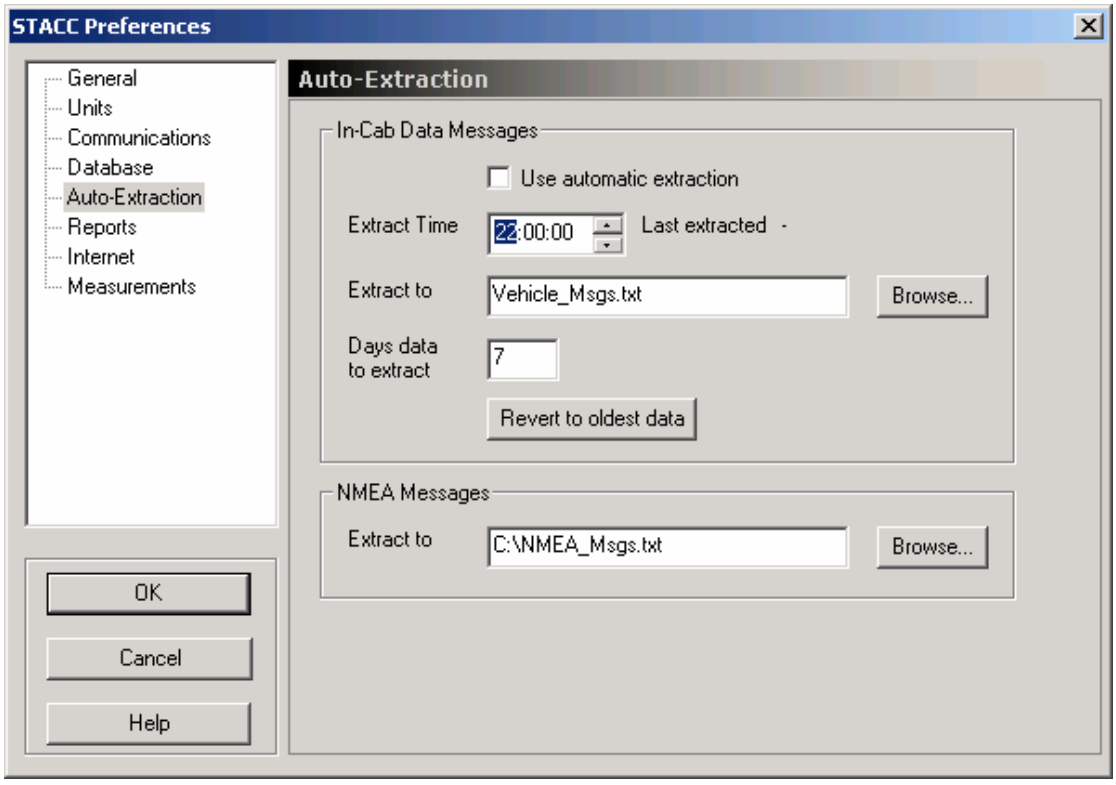


Figure 4-22 Auto Extraction Preferences Dialog

The **Auto-extraction Preferences** are used where data is required to be automatically extracted to a file.

4.4.6 Reports Preferences.

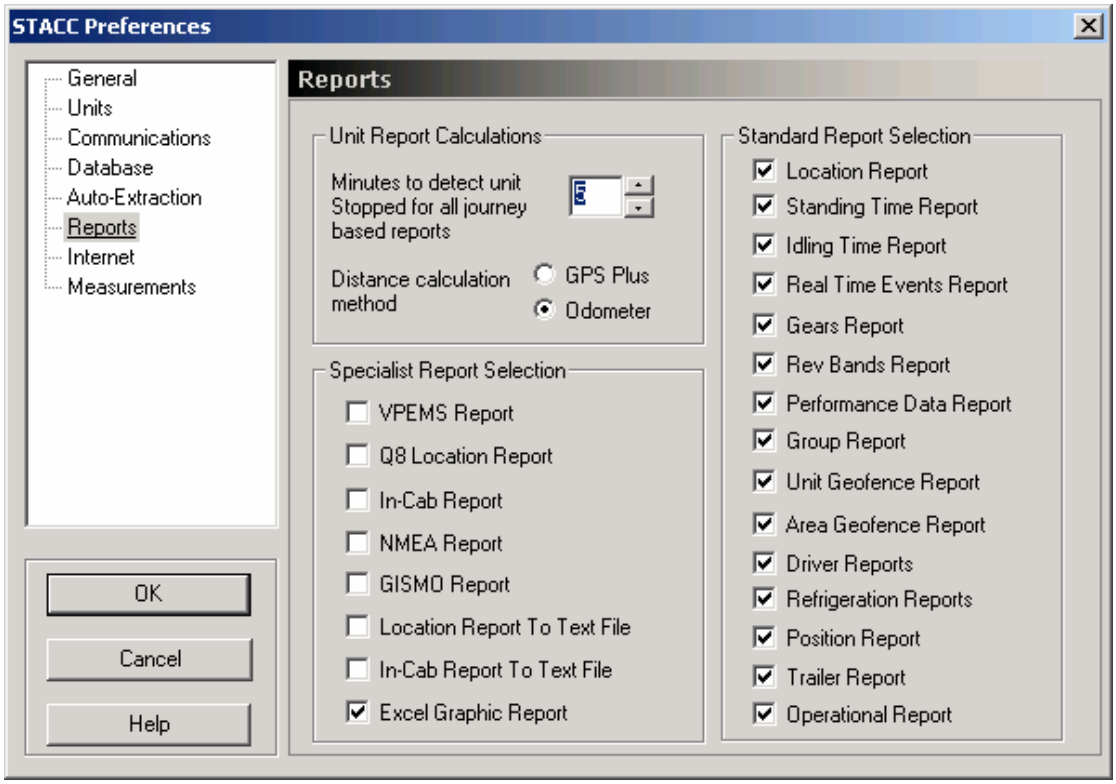


Figure 4-23 Report Preferences Dialog

The **Report Preference** is used to select settings used in the production of reports and to select the report options displayed when running STACC.

Unit Reports set the times used by the reports that display Standing and Idling times.

Report Addresses enable Latitude and Longitude to be translated to an address when used in the reports. Addresses can be replaced by user entered **Place Labels** if required.

If only a few reports are used then the **Report Selections** can be used to reduce the choice of reports when producing reports in STACC.

4.4.7 Internet Preferences.

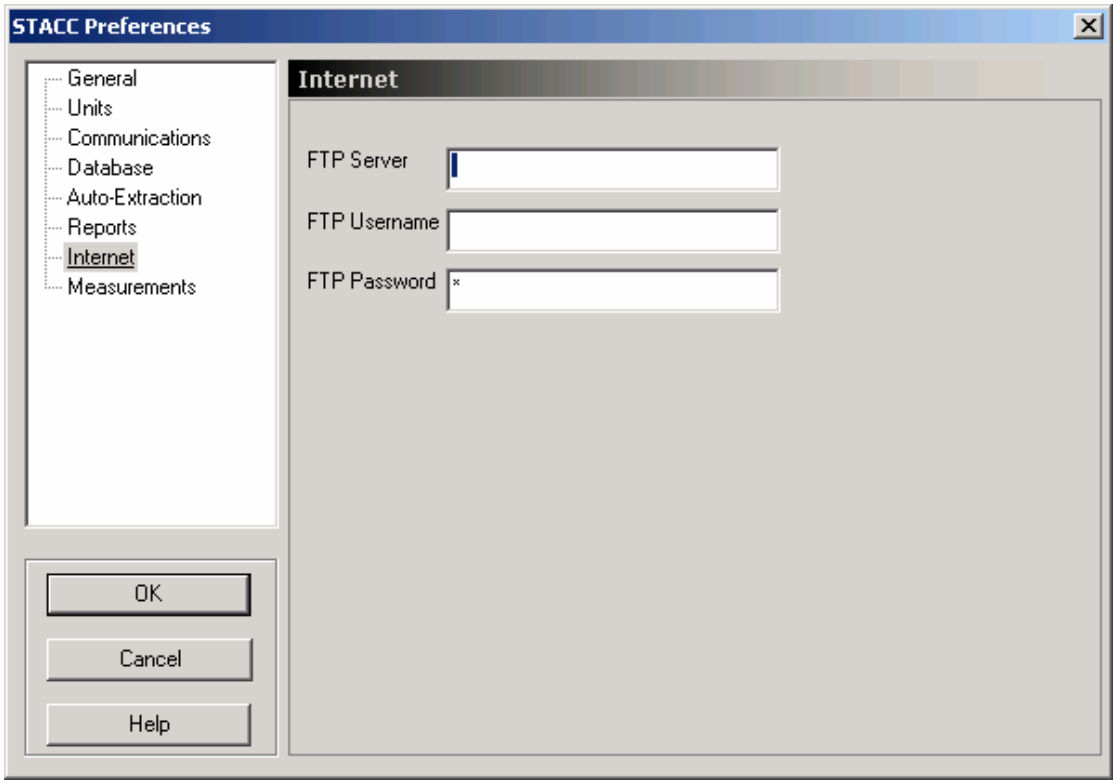


Figure 4-24 Internet Prefences Dialog

The **Internet Preferences** window is used to enable FTP transfers.

4.4.8 Measurement Preferences.

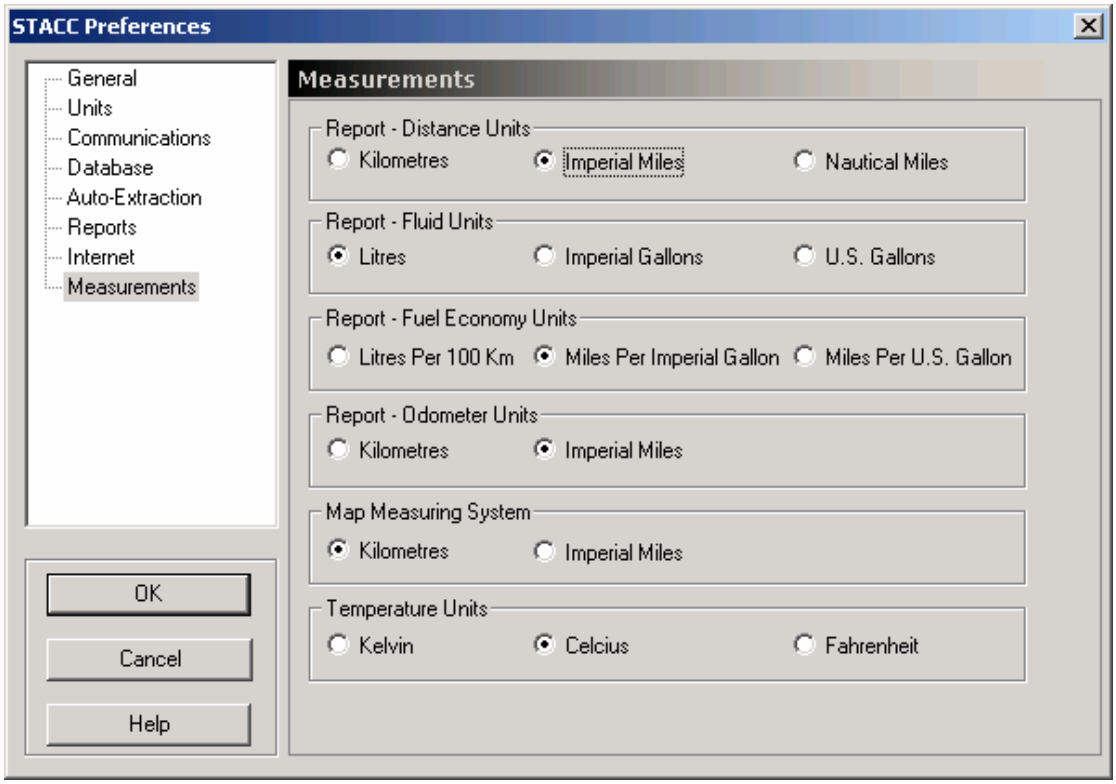


Figure 4-25 Measurement Preferences Dialog

The **Measurement Preferences** window is used to select the units used in reports and on the **Map Screen.** .

4.5 Status reports/history.

Various reports are provided for the management and support of the STACC System. Two of these, the **Event Viewer** and the **Call Request Queue** are sometimes used during day to day operations.

4.5.1 Event Viewer.

The **Event Viewer** records all significant events of STACC's operation.

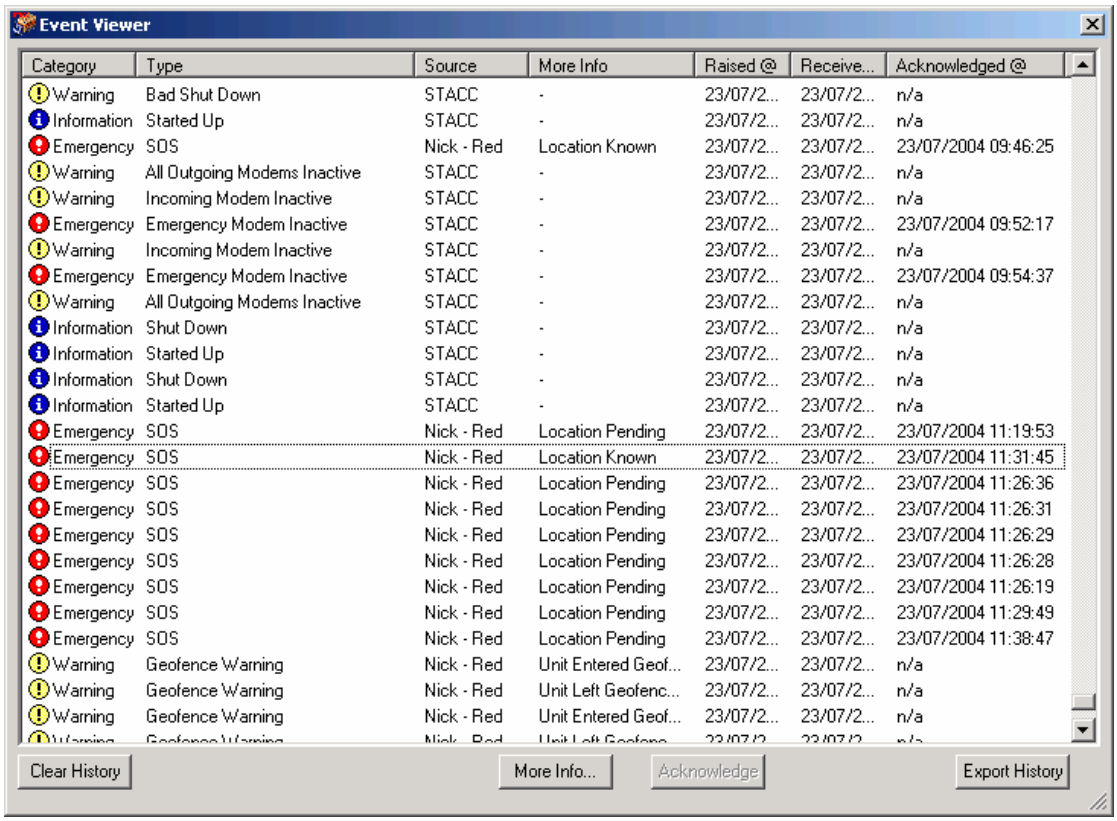


Figure 4-26 Event Viewer Dialog

More information of each event can be obtained by **Right click** on selected event for **More Info**.

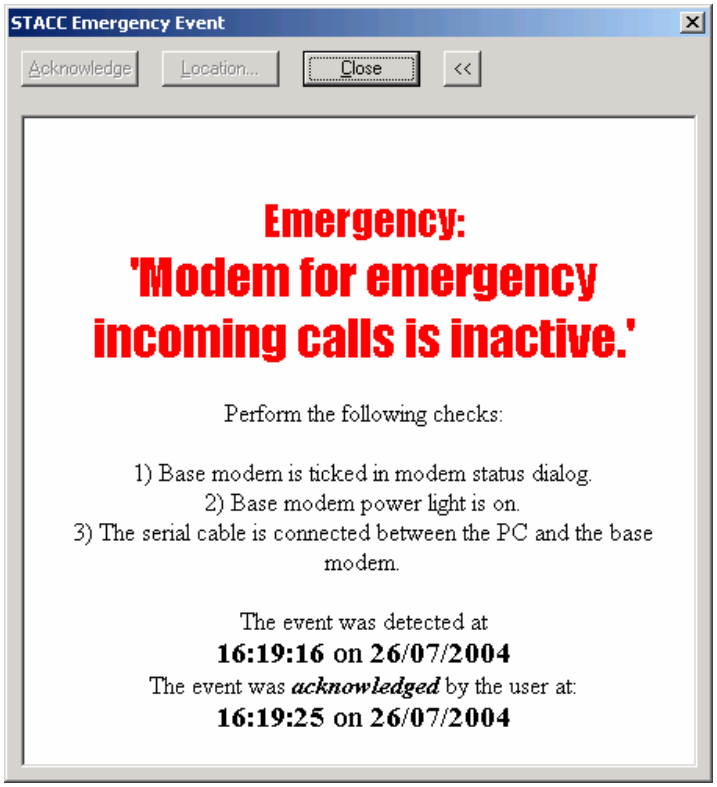


Figure 4-27 Typical More Information Dialog

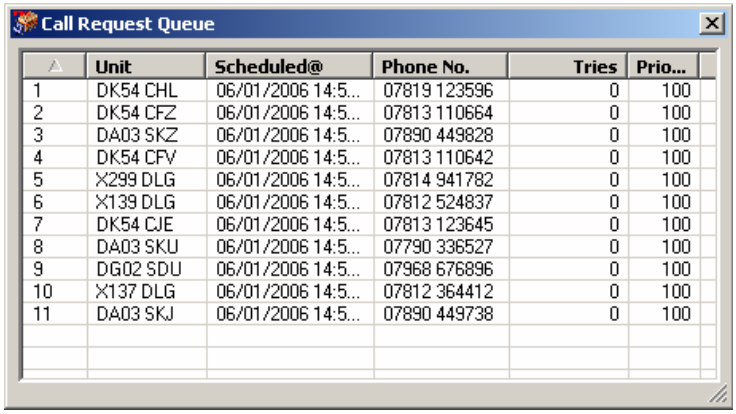
Event Viewer records include: -

Event	Description	Further information
Starting STACC Program.	Time STACC app started	
Shutting down STACC	Time STACC app closed	
Improper Shutdown	STACC previously shut down unexpectedly.	Possible causes:- Power cut at STACC Base Station PC. Forced Quit – user terminated the STACC process. A General Exception fault occurred.
Out Of Contact	Unit unobtainable after maximum call retries	
Emergency:	The panic alarm was triggered	Time the event was raised.

		Time base station received notification. Time the event was acknowledged.
Emergency Modem Inactive	The one and only modem for emergency calls is deactivated.	Time Event occurred/acknowledged **Possible causes**:- Base modem is ticked in modem status dialog. Base modem power light is on. The serial cable is connected between the PC and the base modem.
Base Modem Not Responding	Modem isn't responding to AT commands	As above.
All Outgoing Modems Inactive	Last base modem for outgoing calls is deactivated.	As above.
Incoming Modem Inactive	The one and only modem for incoming calls is deactivated.	As above.

4.5.2 Call Request Queue.

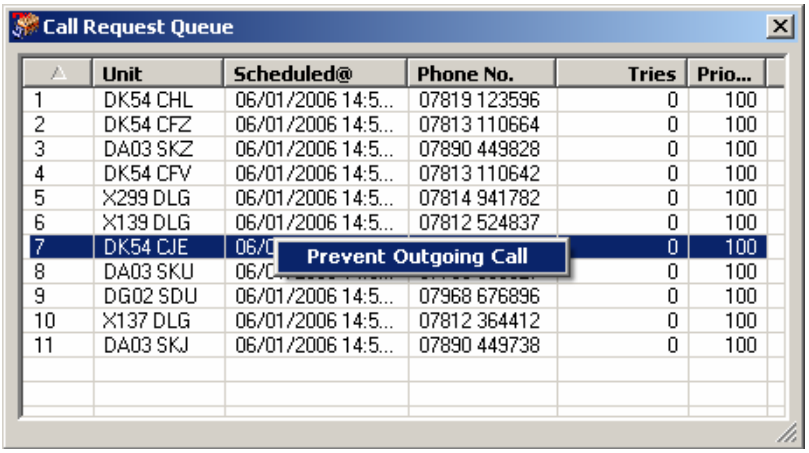
The **Call Request Queue** displays the current status of outstanding calls.



	Unit	Scheduled@	Phone No.	Tries	Prio...
1	DK54 CHL	06/01/2006 14:5...	07819 123596	0	100
2	DK54 CFZ	06/01/2006 14:5...	07813 110664	0	100
3	DA03 SKZ	06/01/2006 14:5...	07890 449828	0	100
4	DK54 CFV	06/01/2006 14:5...	07813 110642	0	100
5	X299 DLG	06/01/2006 14:5...	07814 941782	0	100
6	X139 DLG	06/01/2006 14:5...	07812 524837	0	100
7	DK54 CJE	06/01/2006 14:5...	07813 123645	0	100
8	DA03 SKU	06/01/2006 14:5...	07790 336527	0	100
9	DG02 SDU	06/01/2006 14:5...	07968 676896	0	100
10	X137 DLG	06/01/2006 14:5...	07812 364412	0	100
11	DA03 SKJ	06/01/2006 14:5...	07890 449738	0	100

Figure 4-28 Call Request Queue Dialog

To remove a call from the **Call Request Queue: -**



Right click on call to be removed

To remove call.

Note: Cancelling of scheduled calls may result in the loss of data. Data loss will occur if the unit is not called again before the unit's STACC STU overwrites previously stored data.

4.5.3 Call Notification Queue.

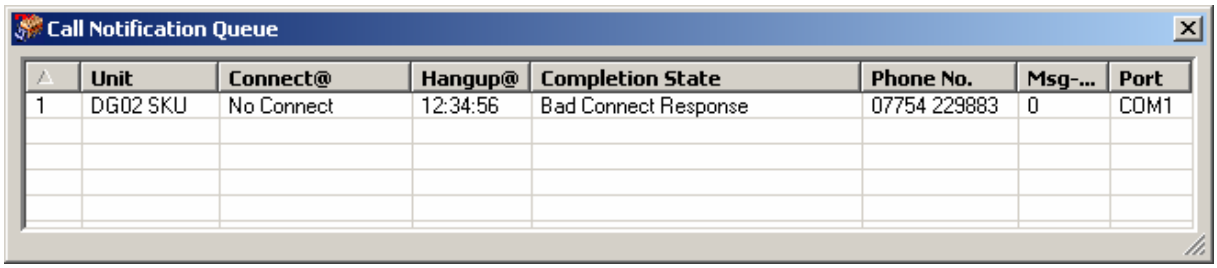


Figure 4-29 Call Notiification Queue Dialog

Finished calls are held in the **Call Notification Queue**. Periodically (approximately every 5 seconds) the Call Scheduler process these calls, rescheduling the incomplete ones and updating the **Call Notification History.** See **3.2.1.2.** for description of **Completion State**.

4.5.4 Call Request History.

The **Call Request History** is a record of all requests for outgoing calls made by the Scheduler, including retries.

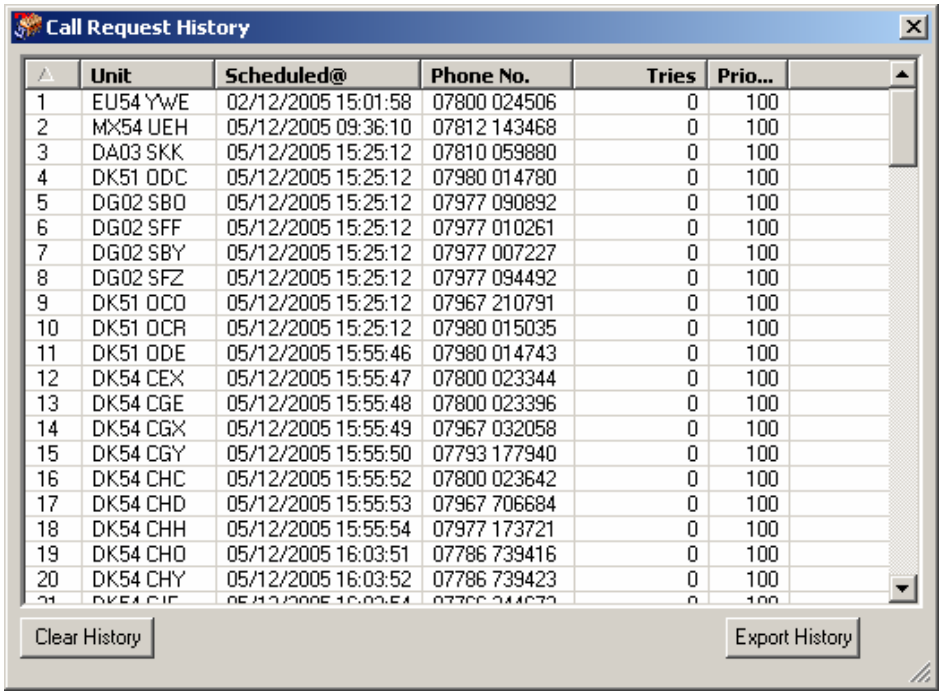


Figure 4-30 Call Request History Dialog

4.5.5 Call Notification History.

The **Call Notification History** is a record of all completed calls. Completed calls are those which successfully download all available data from the unit or do not establish contact after specified number of retries. See **3.2.1.2.** for description of the **Completion State** messages

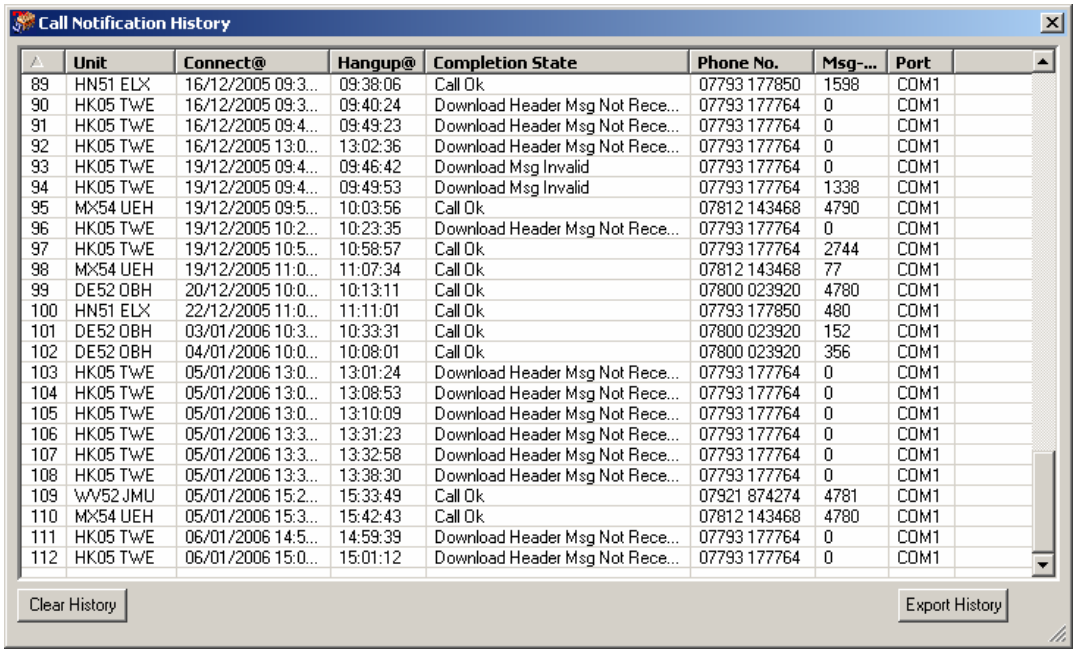


Figure 4-31 Call Notification History Dialog

5 REPORTS AND DATA EXTRACTION

5.1 Reports and Databases

Data gathered by STACC can be processed to produce a range of reports and databases. There are a range of standard reports and databases. In addition custom versions are available. This manual covers the principal operation of the report system and gives some examples of the outputs. Please contact Service for support of other report types.

STACC has a User Interface for generating reports which is referred to as the **Report Centre**.

5.2 To Enter the Report Centre.

The **Report Centre** can now be entered directly from the main menu bar.

Left click on to enter **Report Centre**

The **Report Centre** can also be opened from the **Tote Screen** by **right clicking** on a **Fleet** or individual **Unit** and selecting **Reports** from the displayed context menu. From the **Map Screen** right click on a selected vehicle to display context menu and select **Reports**.

5.3 Report Centre.

The **Report Centre** is used to produce all STACC reports. From this window the type, period and shift time of the report can be set. For unit based reports an individual unit or, where appropriate, group of vehicles, can be selected. Reports can also be produced based on specified geofences or Driver PIN. See **5.** for details of PIN reports.

The reports listed in the **Report Type** box can be selected from the **Report Preferences.** See User Guide section **4.4.6**

5.3.1 Unit Reports

To produce a unit report:-

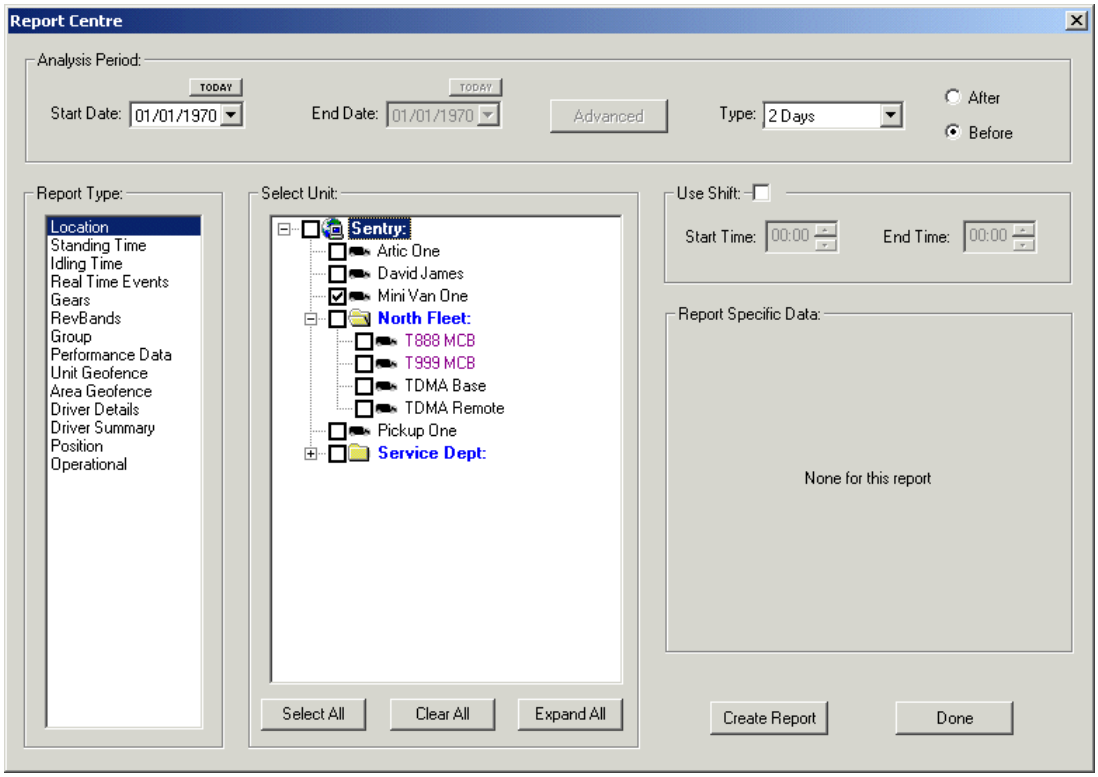


Figure 5-1 Report Centre Dialog For Units

Left click on required report type.

Select **Unit** (or for **Group** and **Position** reports multiple **Units**) by ticking or unticking box in **Select Unit**.

Set Analyses Period and if required Shift Time, then press Create Report

To create Report

5.3.2 Geofence Reports

To produce an **Area Geofence** report:-

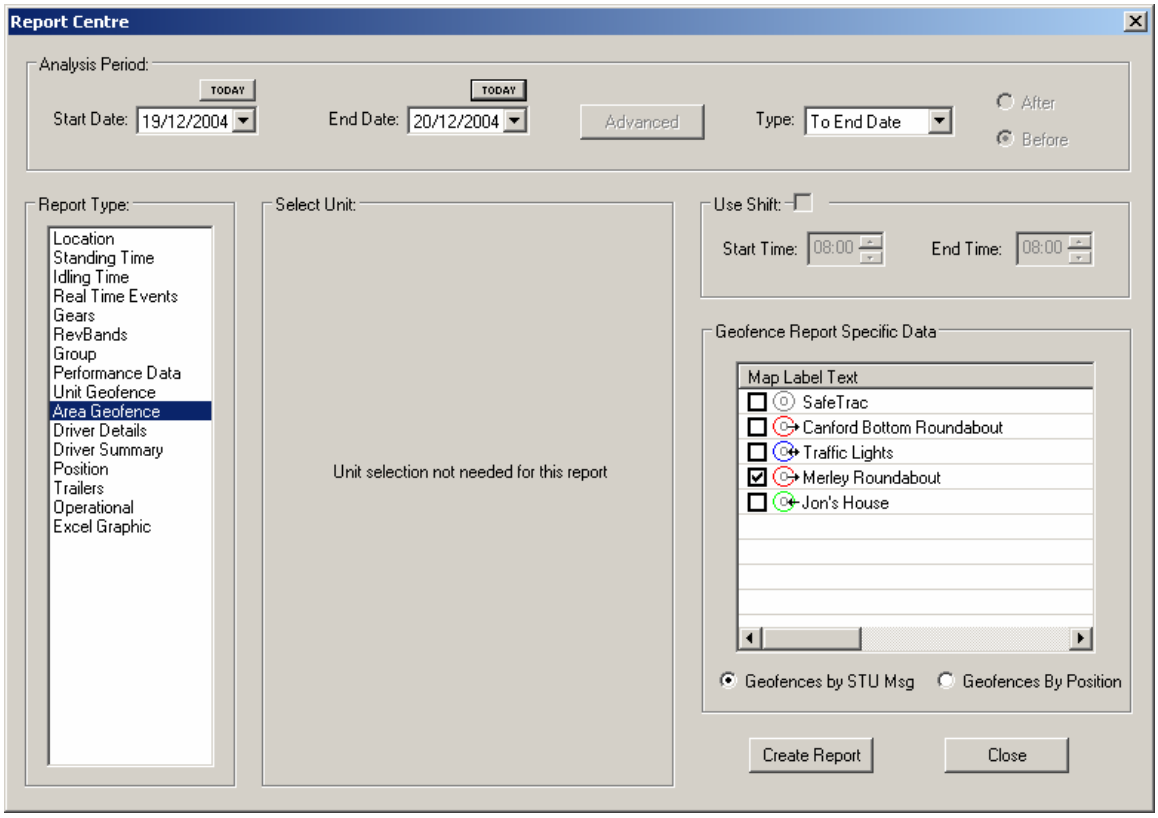


Figure 5-2 Report Centre Dialog For Geofences

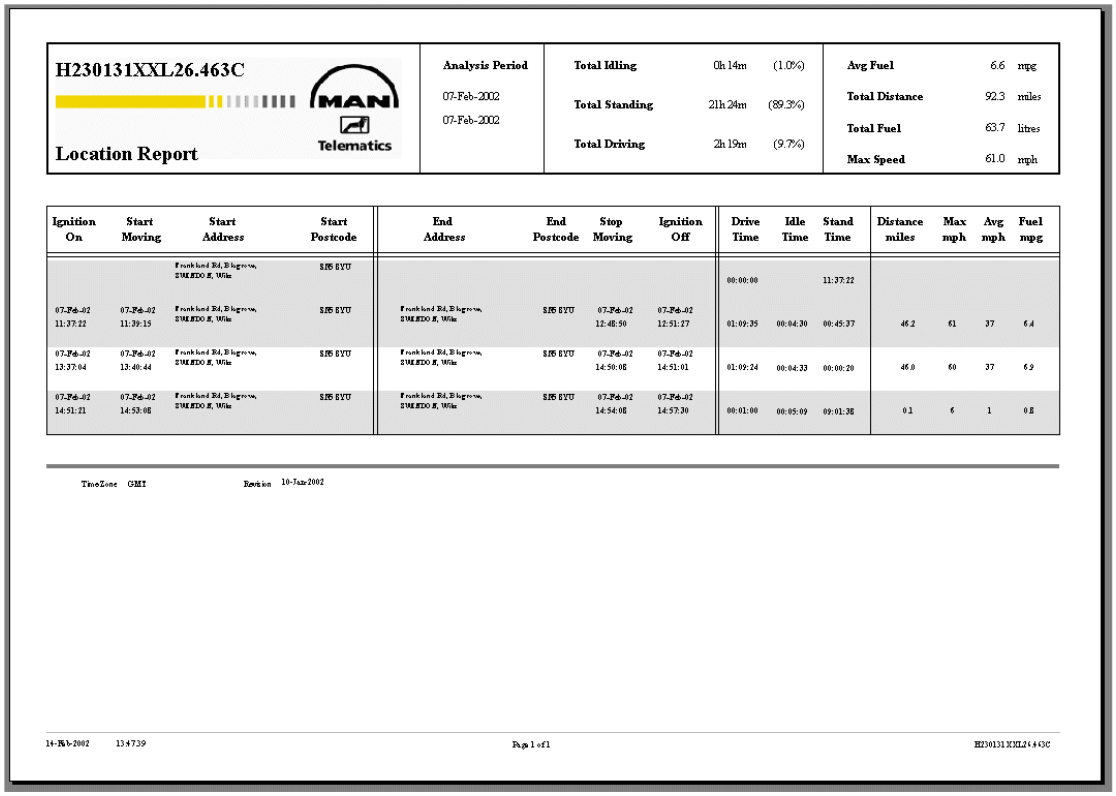
Left click on required report type **Area Geofence**.

Select **Geofence(s)** by ticking or unticking box in **Geofence Specific** Data box. Select either Geofences by STU Msg, for actual Geofences reported by the STU, or Geofences by Position, if no Geofence messages have been received for the location and period.

Set Analyses Period, then press Create Report

5.3.3 Example Reports

5.3.3.1 Location Report



H230131XXL26.463C

Location Report

Telematics

Analysis Period					
07-Feb-2002					
07-Feb-2002					
Total Idling	0h 14m	(1.0%)	**Avg Fuel**	6.6	mpg
Total Standing	21h 24m	(89.3%)	**Total Distance**	92.3	miles
Total Driving	2h 19m	(9.7%)	**Total Fuel**	63.7	litres
			Max Speed	61.0	mph

Ignition On	Start Moving	Start Address	Start Postcode	End Address	End Postcode	Stop Moving	Ignition Off	Drive Time	Idle Time	Stand Time	Distance miles	Max mph	Avg mph	Fuel mpg
		Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU					00:00:00		11:37:22				
07-Feb-02 11:37:22	07-Feb-02 11:39:15	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	07-Feb-02 12:48:50	07-Feb-02 12:51:27	01:09:35	00:04:30	00:45:37	46.2	61	37	6.4
07-Feb-02 13:37:04	07-Feb-02 13:40:44	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	07-Feb-02 14:50:08	07-Feb-02 14:51:01	01:09:24	00:04:33	00:00:20	46.0	60	37	6.9
07-Feb-02 14:51:21	07-Feb-02 14:53:05	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	Frankland Rd, Blagrove, SWINDON, Wilts	SN5 8YU	07-Feb-02 14:54:05	07-Feb-02 14:57:30	00:01:00	00:05:09	09:01:36	0.1	6	1	0.8

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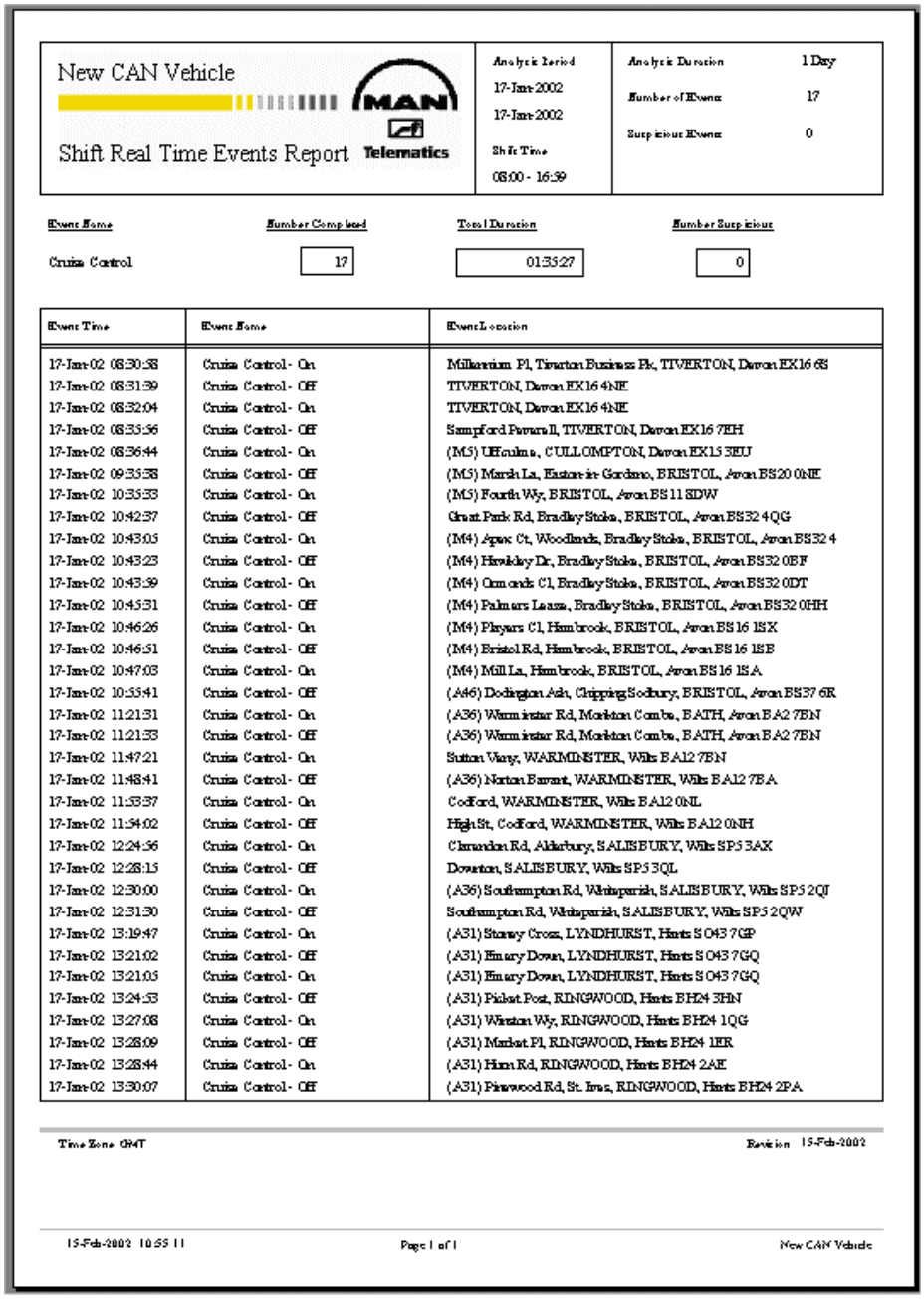
Figure 5-3 Location Report

This report records details of all unit movements and idling times. The location of the unit is shown when it is stationary. The unit is considered to be stationary when the ignition is turned off or no movement is detected by a preset time. This time is set in the **Report Preferences** (see **4.4.6**)

If the fuel flow data is available to the STACC STU, the fuel mpg will be shown for individual trips and for the total period of the report.

5.3.3.2 Real Time Events.



New CAN Vehicle

Shift Real Time Events Report

Telematics

Analysis Period	Analysis Duration	1 Day
17-Jan-2002	Number of Events	17
17-Jan-2002	Suspicious Events	0
Shift Time		
08:00 - 16:59		

Event Name	Number Completed	Total Duration	Number Suspicious
Cruise Control	17	01:35:27	0

Event Time	Event Name	Event Location
17-Jan-02 08:30:58	Cruise Control - On	Millennium Pl, Tiverton Business Pk, TIVERTON, Devon EX16 6S
17-Jan-02 08:31:39	Cruise Control - Off	TIVERTON, Devon EX16 4NE
17-Jan-02 08:32:04	Cruise Control - On	TIVERTON, Devon EX16 4NE
17-Jan-02 08:35:56	Cruise Control - Off	Sampford Peverell, TIVERTON, Devon EX16 7EH
17-Jan-02 08:36:44	Cruise Control - On	(M5) Uffculme, CULLOMPTON, Devon EX15 3EU
17-Jan-02 09:35:58	Cruise Control - Off	(M5) Marsh La, Easter-in-Gordano, BRISTOL, Avon BS20 0NE
17-Jan-02 10:35:53	Cruise Control - On	(M5) Fourth Wy, BRISTOL, Avon BS11 8DW
17-Jan-02 10:42:37	Cruise Control - Off	Great Park Rd, Bradley Stoke, BRISTOL, Avon BS32 4QG
17-Jan-02 10:43:05	Cruise Control - On	(M4) Apex Ct, Woodlands, Bradley Stoke, BRISTOL, Avon BS32 4
17-Jan-02 10:43:23	Cruise Control - Off	(M4) Hewlett Dr, Bradley Stoke, BRISTOL, Avon BS32 0BF
17-Jan-02 10:43:39	Cruise Control - On	(M4) Cromwell Cl, Bradley Stoke, BRISTOL, Avon BS32 0DT
17-Jan-02 10:45:31	Cruise Control - Off	(M4) Palmers Leaze, Bradley Stoke, BRISTOL, Avon BS32 0HH
17-Jan-02 10:46:26	Cruise Control - On	(M4) Players Cl, Hambrook, BRISTOL, Avon BS16 1SX
17-Jan-02 10:46:31	Cruise Control - Off	(M4) Bristol Rd, Hambrook, BRISTOL, Avon BS16 1SB
17-Jan-02 10:47:03	Cruise Control - On	(M4) Mill La, Hambrook, BRISTOL, Avon BS16 1SA
17-Jan-02 10:55:41	Cruise Control - Off	(A46) Dodington Ash, Chipping Sodbury, BRISTOL, Avon BS37 6R
17-Jan-02 11:21:31	Cruise Control - On	(A36) Warminster Rd, Monkton Combe, BATH, Avon BA2 7BN
17-Jan-02 11:21:33	Cruise Control - Off	(A36) Warminster Rd, Monkton Combe, BATH, Avon BA2 7BN
17-Jan-02 11:47:21	Cruise Control - On	Sutton Veny, WARMINSTER, Wilts BA12 7BN
17-Jan-02 11:48:41	Cruise Control - Off	(A36) Norton Bavant, WARMINSTER, Wilts BA12 7BA
17-Jan-02 11:53:37	Cruise Control - On	Codford, WARMINSTER, Wilts BA12 0NL
17-Jan-02 11:54:02	Cruise Control - Off	High St, Codford, WARMINSTER, Wilts BA12 0NH
17-Jan-02 12:24:36	Cruise Control - On	Clarendon Rd, Alderbury, SALISBURY, Wilts SP5 3AX
17-Jan-02 12:28:15	Cruise Control - Off	Downton, SALISBURY, Wilts SP5 3QL
17-Jan-02 12:30:00	Cruise Control - On	(A36) Southampton Rd, Whiteparish, SALISBURY, Wilts SP5 2QJ
17-Jan-02 12:31:30	Cruise Control - Off	Southampton Rd, Whiteparish, SALISBURY, Wilts SP5 2QW
17-Jan-02 13:19:47	Cruise Control - On	(A31) Stoney Cross, LYNDHURST, Hants SO43 7GP
17-Jan-02 13:21:02	Cruise Control - Off	(A31) Emery Down, LYNDHURST, Hants SO43 7GQ
17-Jan-02 13:21:05	Cruise Control - On	(A31) Emery Down, LYNDHURST, Hants SO43 7GQ
17-Jan-02 13:24:33	Cruise Control - Off	(A31) Picket Post, RINGWOOD, Hants BH24 3HN
17-Jan-02 13:27:08	Cruise Control - On	(A31) Winston Wy, RINGWOOD, Hants BH24 1QG
17-Jan-02 13:28:09	Cruise Control - Off	(A31) Market Pl, RINGWOOD, Hants BH24 1ER
17-Jan-02 13:28:44	Cruise Control - On	(A31) Hinx Rd, RINGWOOD, Hants BH24 2AE
17-Jan-02 13:30:07	Cruise Control - Off	(A31) Pinewood Rd, St. Ives, RINGWOOD, Hants BH24 2PA

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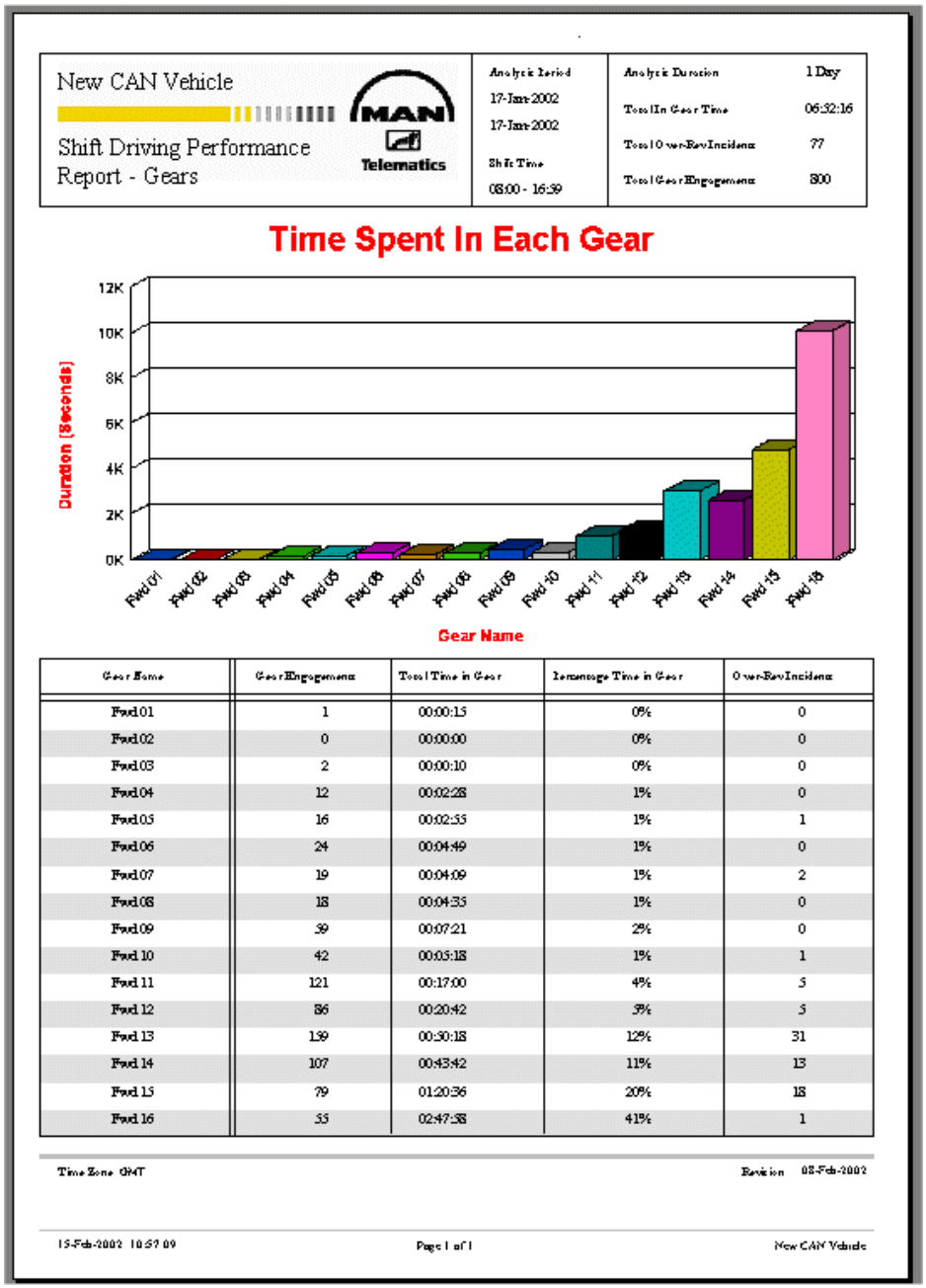
Figure 5-4 Real-Time Event Report

The Real Time report displays the time and location at which an event took place. An event can be for example, as above, cruise control engage, disengage. STACC can be configured to give a number of different event reports depending on individual requirements.

5.3.3.3 Performance Reports

If J1939 CAN data is available on the unit it is possible to produce a series of reports covering driver performance. The actual reports that can be produced will depend on the actual CAN messages available. Typically we can produce reports on gear use, revband usage, harsh breaking, clutch pedal usage etc. The report below is a typical example.


New CAN Vehicle

Shift Driving Performance Report - Gears

MAN Telematics

Analysis Period	17-Jan-2002 17-Jan-2002
Shift Time	08:00 - 16:59
Analysis Duration	1 Day
Total In Gear Time	06:32:16
Total Over-Rev Incidents	77
Total Gear Engagements	800

Time Spent In Each Gear

Duration [Seconds]

12K 10K 8K 6K 4K 2K 0K

Fwd 01 Fwd 02 Fwd 03 Fwd 04 Fwd 05 Fwd 06 Fwd 07 Fwd 08 Fwd 09 Fwd 10 Fwd 11 Fwd 12 Fwd 13 Fwd 14 Fwd 15 Fwd 16

Gear Name

Gear Name	Gear Engagements	Total Time in Gear	Percentage Time in Gear	Over-Rev Incidents
Fwd 01	1	00:00:15	0%	0
Fwd 02	0	00:00:00	0%	0
Fwd 03	2	00:00:10	0%	0
Fwd 04	12	00:02:28	1%	0
Fwd 05	16	00:02:55	1%	1
Fwd 06	24	00:04:49	1%	0
Fwd 07	19	00:04:09	1%	2
Fwd 08	18	00:04:35	1%	0
Fwd 09	39	00:07:21	2%	0
Fwd 10	42	00:03:18	1%	1
Fwd 11	121	00:17:00	4%	5
Fwd 12	86	00:20:42	5%	5
Fwd 13	139	00:50:18	12%	31
Fwd 14	107	00:43:42	11%	13
Fwd 15	79	01:20:36	20%	18
Fwd 16	55	02:47:38	41%	1

Time Zone GMT Revision 03-Feb-2002

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Figure 5-5 Gear Report

5.3.3.4 Idling Report for Vehicles with PTO

The simple Idling report records all the times that the vehicle is stationary with the engine running for a period greater than a time set in the **Report Preferences**. See **4.4.6.**

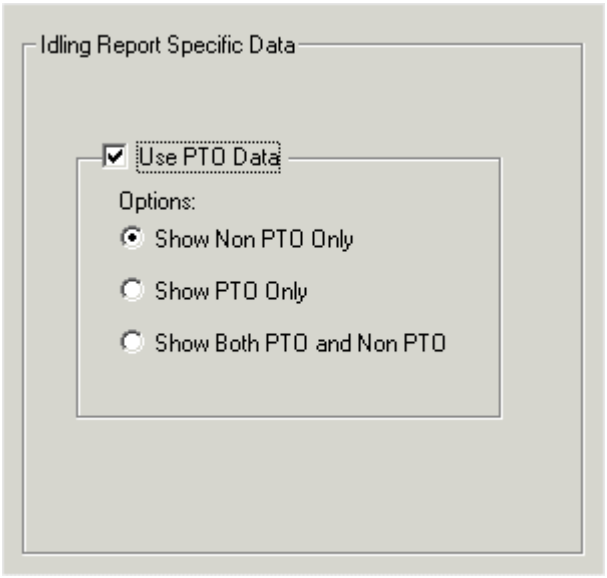
If a vehicle is fitted with PTO, then if the PTO is engaged during the time defined above, the actual idling time should not include the time when the PTO is active.

The idling report now gives the option to produce reports which take account of the PTO time during idling time. The report supports all existing vehicles that are detecting PTO using CAN.

Vehicles that are using non Can detection may need an upgrade in the STU firmware to use this function. Contact your STACC Technical support if you require assistance with this.

This report only deals with PTO during idling periods. If you require PTO reports including PTO during vehicle movement, this can be seen in the **Real Time Events report.**

When selecting **Idling Report** the following options will be displayed: -



Put √ in the ☐ to enable Use of PTO Data.

Remove √ from ☐ to disable Use of PTO Data.

Show Non PTO Data will show only the time when the vehicle is stationary with the engine running and the PTO not engaged.

Show PTO Only will show the time that the PTO was engaged whilst the vehicle was stationary.

Show Both PTO and Non PTO will show the total time the engine was running with the vehicle stationary, the time when the PTO was engaged and the time when the PTO was disengaged.

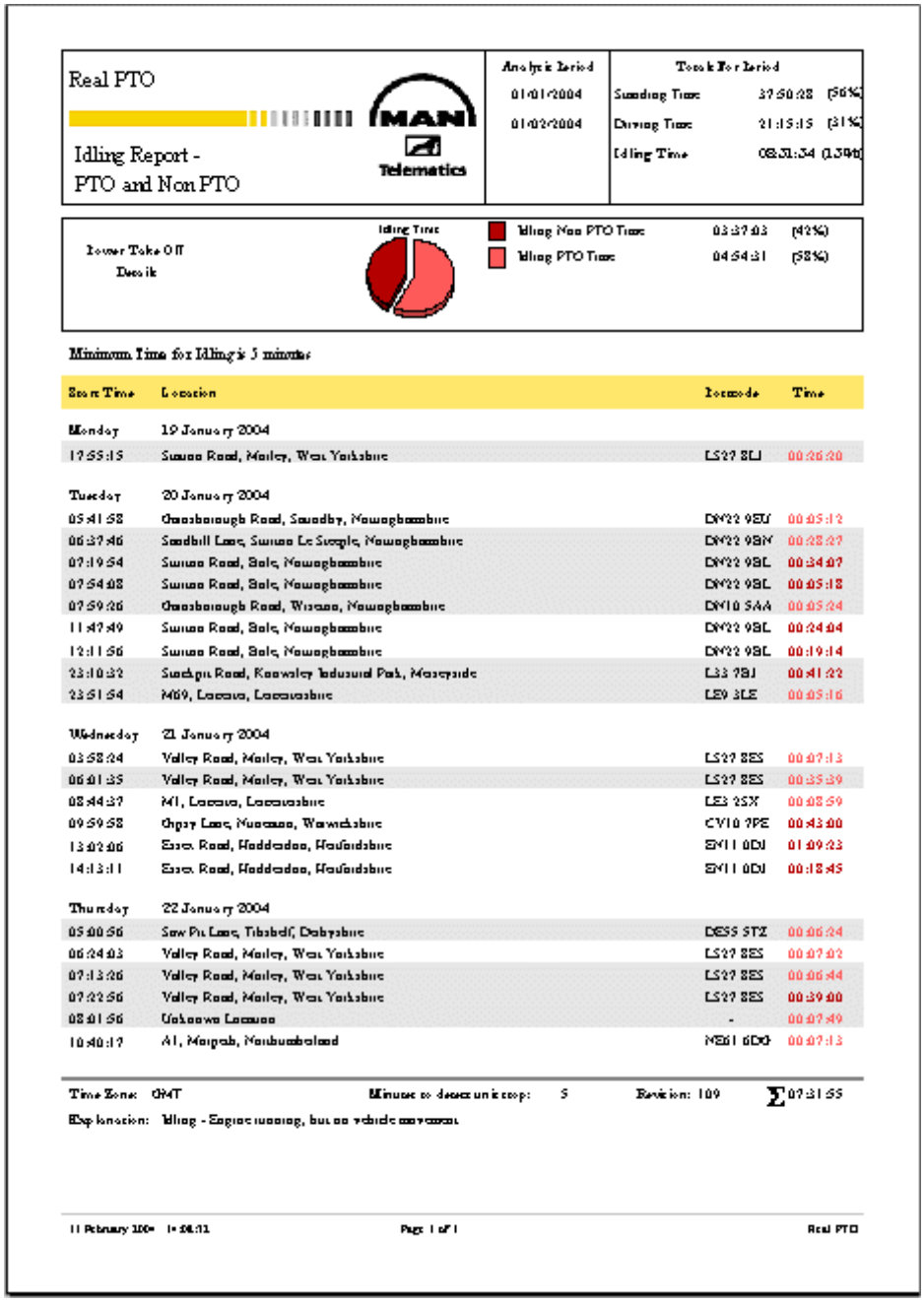


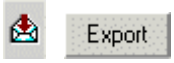
Figure 5-6 Idling Report

5.3.4 Viewing/Printing/Exporting Reports

Use the tool bar controls to page through multi-page reports and change the report view.

Figure 5-7 Report Dialog Toolbar

 To print report



To export report

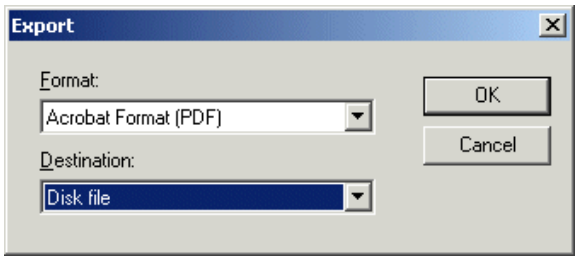


Figure 5-8 Report Export Dialog

Select Export format and file destination.

To toggle Group Tree giving easier acess to multii page reports

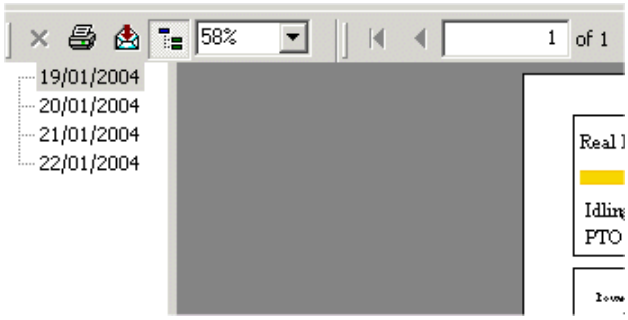


Figure 5-9 Report Group Tree

6 DRIVER PINS.

6.1 Introduction.

Reports based on **Driver Personal Identification numbers** (PIN) can be produced. In order for STACC to support this function mobile units must be fitted with an **In Cab Display** and the PIN enabled firmware installed. **Units installed before August 2003 will almost certainly need the firmware to be updated.** Contact **Technical Support** for further details.

6.2 Set up for Driver PIN.

From **Menu** select **Group** then select **Drivers**. This will open a text file in which the Driver PIN and name can be entered using the format below..

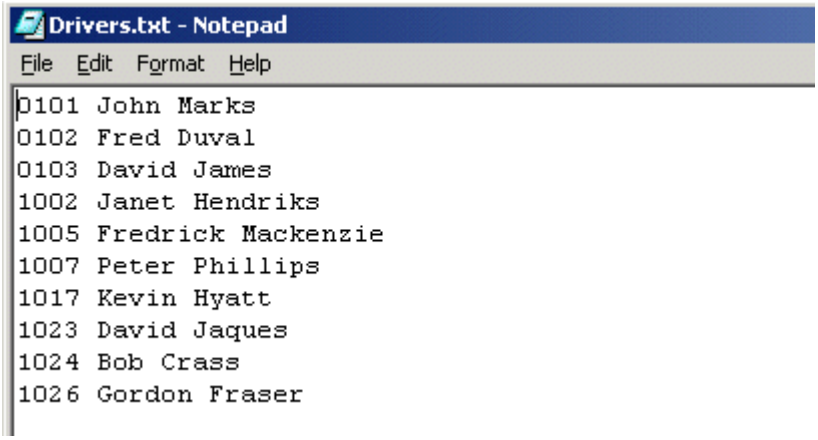


Figure 6-1 Notepad Showing Drivers File

Note: If you do not wish to show the Driver names on the report simply list the PINs.

6.3 Creating Driver Reports.

The Drivers should enter their PIN at the start of work and Log Off at the end of their shift. The reports will not use any data collected outside any logged on work period.

There are two Driver based reports which can be produced the first includes details of all logged periods for the analyses period. The second shows a summary for all logged on periods during the analyses period. Single reports can be produced to include a number of Drivers

To produce a **Driver PIN** report:-

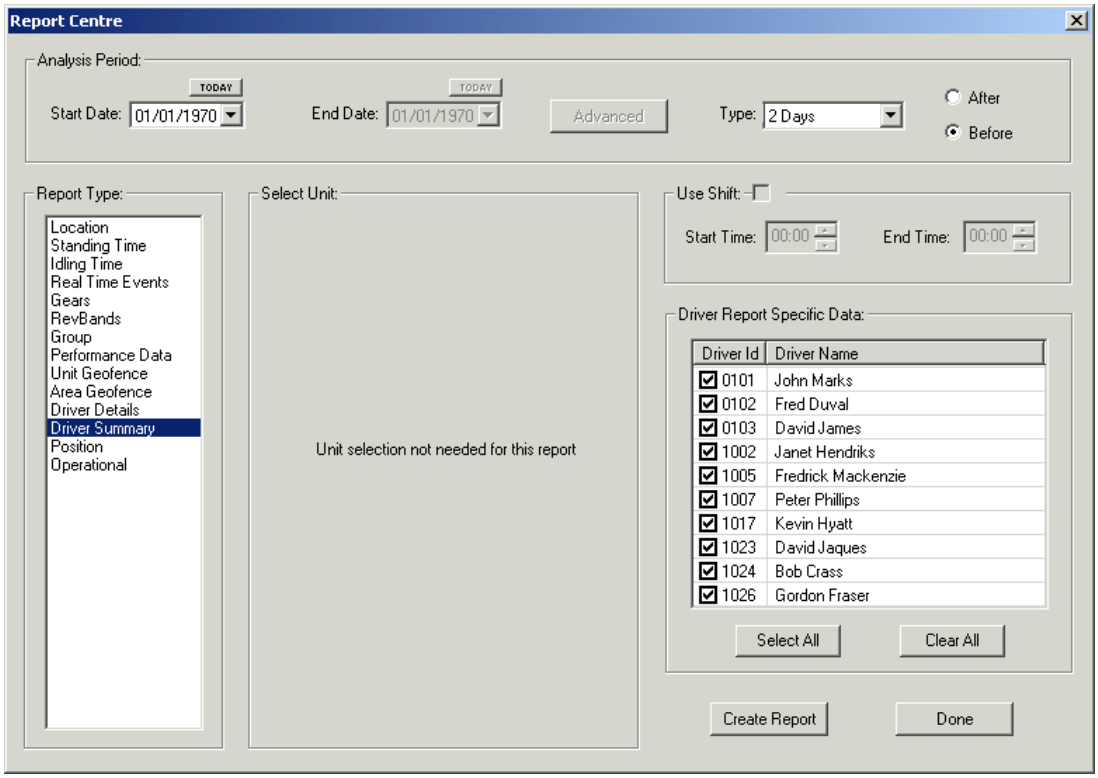


Figure 6-2 Report Centre For Drivers

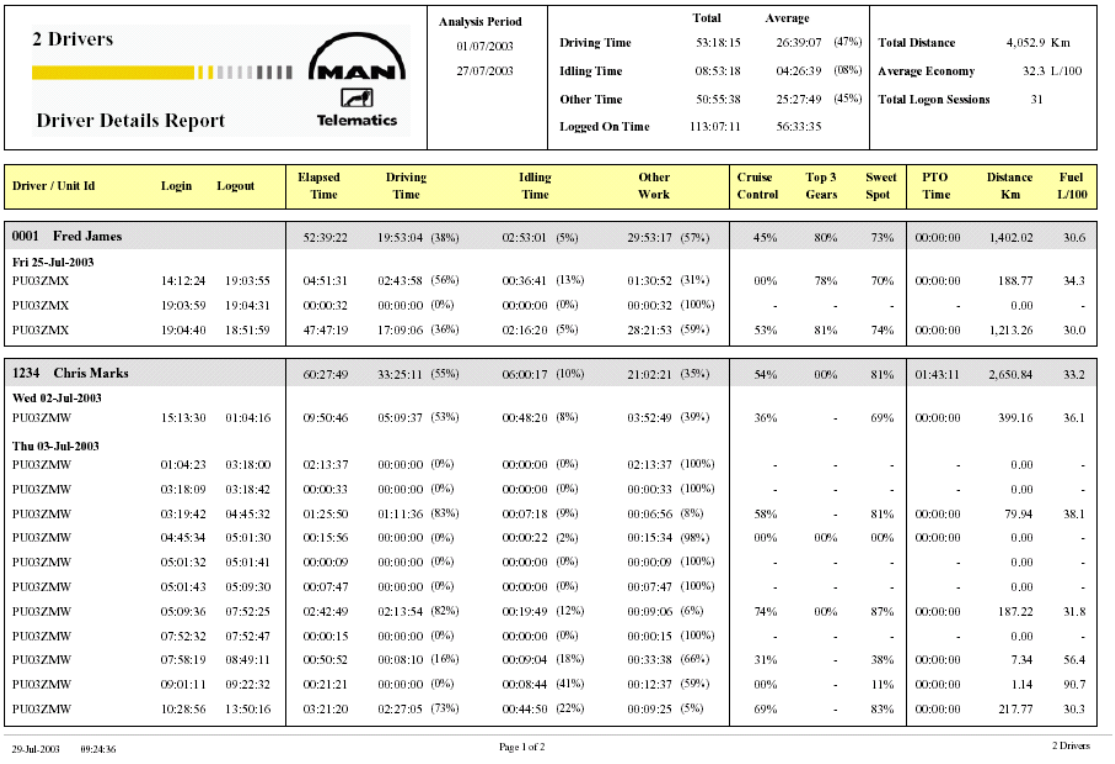
Right click on required report type Driver Details or Driver Summary.

Select **Drivers** by ticking or unticking box in **Driver Report Specific** Data box.

Set Analyses Period.

Create Report To create Report

6.4 Driver Details Report.



2 Drivers

Driver Details Report

MAN Telematics

Analysis Period	
01/07/2003	
27/07/2003	

	Total	Average	
Driving Time	53:18:15	26:39:07	(47%)
Idling Time	08:53:18	04:26:39	(08%)
Other Time	50:55:38	25:27:49	(45%)
Logged On Time	113:07:11	56:33:35	

Total Distance	4,052.9 Km
Average Economy	32.3 L/100
Total Logon Sessions	31

Driver / Unit Id	Login	Logout	Elapsed Time	Driving Time	Idling Time	Other Work	Cruise Control	Top 3 Gears	Sweet Spot	PTO Time	Distance Km	Fuel L/100
0001 Fred James			52:39:22	19:53:04 (38%)	02:53:01 (5%)	29:53:17 (57%)	45%	80%	73%	00:00:00	1,402.02	30.6
Fri 25-Jul-2003												
PU03ZMX	14:12:24	19:03:55	04:51:31	02:43:58 (56%)	00:36:41 (13%)	01:30:52 (31%)	00%	78%	70%	00:00:00	188.77	34.3
PU03ZMX	19:03:59	19:04:31	00:00:32	00:00:00 (0%)	00:00:00 (0%)	00:00:32 (100%)	-	-	-	-	0.00	-
PU03ZMX	19:04:40	18:51:59	47:47:19	17:09:06 (36%)	02:16:20 (5%)	28:21:53 (59%)	53%	81%	74%	00:00:00	1,213.26	30.0
1234 Chris Marks			60:27:49	33:25:11 (55%)	06:00:17 (10%)	21:02:21 (35%)	54%	00%	81%	01:43:11	2,650.84	33.2
Wed 02-Jul-2003												
PU03ZMW	15:13:30	01:04:16	09:50:46	05:09:37 (53%)	00:48:20 (8%)	03:52:49 (39%)	36%	-	69%	00:00:00	399.16	36.1
Thu 03-Jul-2003												
PU03ZMW	01:04:23	03:18:00	02:13:37	00:00:00 (0%)	00:00:00 (0%)	02:13:37 (100%)	-	-	-	-	0.00	-
PU03ZMW	03:18:09	03:18:42	00:00:33	00:00:00 (0%)	00:00:00 (0%)	00:00:33 (100%)	-	-	-	-	0.00	-
PU03ZMW	03:19:42	04:45:32	01:25:50	01:11:36 (83%)	00:07:18 (9%)	00:06:56 (8%)	58%	-	81%	00:00:00	79.94	38.1
PU03ZMW	04:45:34	05:01:30	00:15:56	00:00:00 (0%)	00:00:22 (2%)	00:15:34 (98%)	00%	00%	00%	00:00:00	0.00	-
PU03ZMW	05:01:32	05:01:41	00:00:09	00:00:00 (0%)	00:00:00 (0%)	00:00:09 (100%)	-	-	-	-	0.00	-
PU03ZMW	05:01:43	05:09:30	00:07:47	00:00:00 (0%)	00:00:00 (0%)	00:07:47 (100%)	-	-	-	-	0.00	-
PU03ZMW	05:09:36	07:52:25	02:42:49	02:13:54 (82%)	00:19:49 (12%)	00:09:06 (6%)	74%	00%	87%	00:00:00	187.22	31.8
PU03ZMW	07:52:32	07:52:47	00:00:15	00:00:00 (0%)	00:00:00 (0%)	00:00:15 (100%)	-	-	-	-	0.00	-
PU03ZMW	07:58:19	08:49:11	00:50:52	00:08:10 (16%)	00:09:04 (18%)	00:33:38 (66%)	31%	-	38%	00:00:00	7.34	56.4
PU03ZMW	09:01:11	09:22:32	00:21:21	00:00:00 (0%)	00:08:44 (41%)	00:12:37 (59%)	00%	-	11%	00:00:00	1.14	90.7
PU03ZMW	10:28:56	13:50:16	03:21:20	02:27:05 (73%)	00:44:50 (22%)	00:09:25 (5%)	69%	-	83%	00:00:00	217.77	30.3

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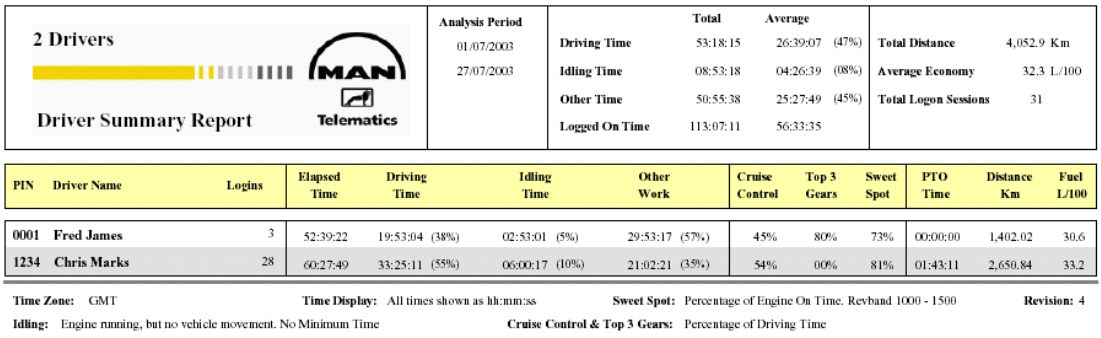
Figure 6-3 Example Driver Details Report

6.5 Driver Summary Report.



2 Drivers

Driver Summary Report

MAN Telematics

Analysis Period	
01/07/2003	
27/07/2003	

	Total	Average	
Driving Time	53:18:15	26:39:07	(47%)
Idling Time	08:53:18	04:26:39	(08%)
Other Time	50:55:38	25:27:49	(45%)
Logged On Time	113:07:11	56:33:35	

Total Distance	4,052.9 Km
Average Economy	32.3 L/100
Total Logon Sessions	31

PIN	Driver Name	Logins	Elapsed Time	Driving Time	Idling Time	Other Work	Cruise Control	Top 3 Gears	Sweet Spot	PTO Time	Distance Km	Fuel L/100
0001	Fred James	3	52:39:22	19:53:04 (38%)	02:53:01 (5%)	29:53:17 (57%)	45%	80%	73%	00:00:00	1,402.02	30.6
1234	Chris Marks	28	60:27:49	33:25:11 (55%)	06:00:17 (10%)	21:02:21 (35%)	54%	00%	81%	01:43:11	2,650.84	33.2

Time Zone: GMT **Time Display:** All times shown as hh:mm:ss **Sweet Spot:** Percentage of Engine On Time. Revband 1000 - 1500 **Revision:** 4

Idling: Engine running, but no vehicle movement. No Minimum Time **Cruise Control & Top 3 Gears:** Percentage of Driving Time

Figure 6-4 Example Driver Summary Report

7 APPENDIX.

7.1 Call intervals and rates.

When setting unit Logging rates and Intervals between calls to units there are a number of areas to be considered.

The shorter the logging rate, the more often the unit will have to be called to avoid overwriting stored data that has not been downloaded to the Base Station. Fig (6.1) and Fig (6.2) show the safety margins, the time left, in which to recall the unit before data will be overwritten for various call intervals and logging rates.

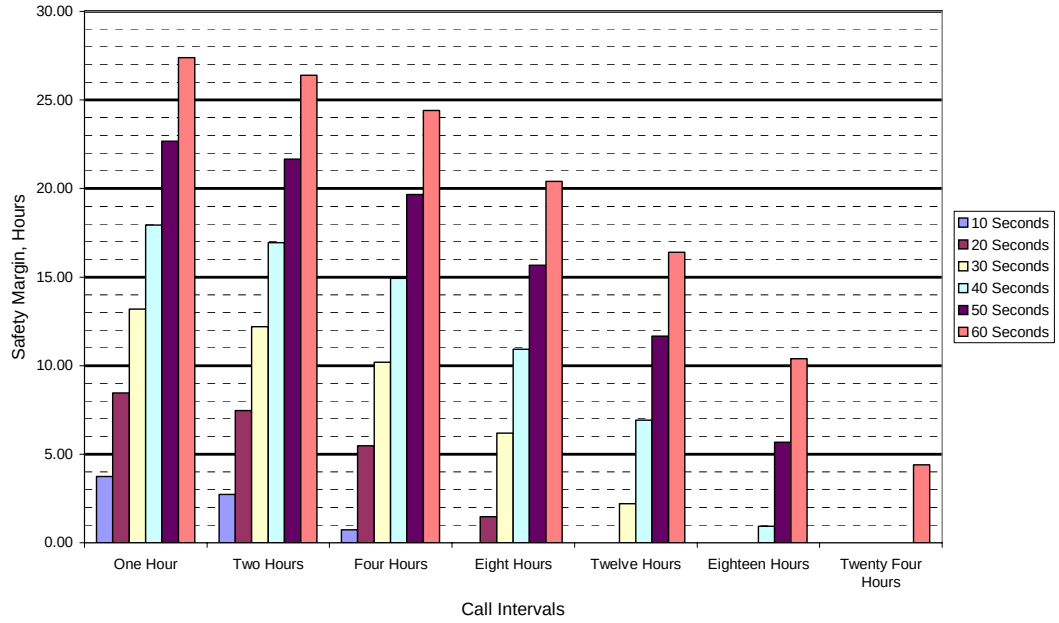


Figure 7-1 Call Intervals Graph

Call Safety Margin for Unit Logging rates 10 to 60 Seconds.

There is no limit to the number of units that STACC can monitor, however there is a limit to the rate that calls that can be made from a single modem. STACC can use more than one modem for outgoing calls if required by the system. The unit logging rate and the call interval also affect the number of calls that can be made in any period. See Fig (6.3) and Fig (6.4). However, although shorter calling intervals for any given logging rate allow more calls to be made in any given time, longer call intervals are more cost effective.

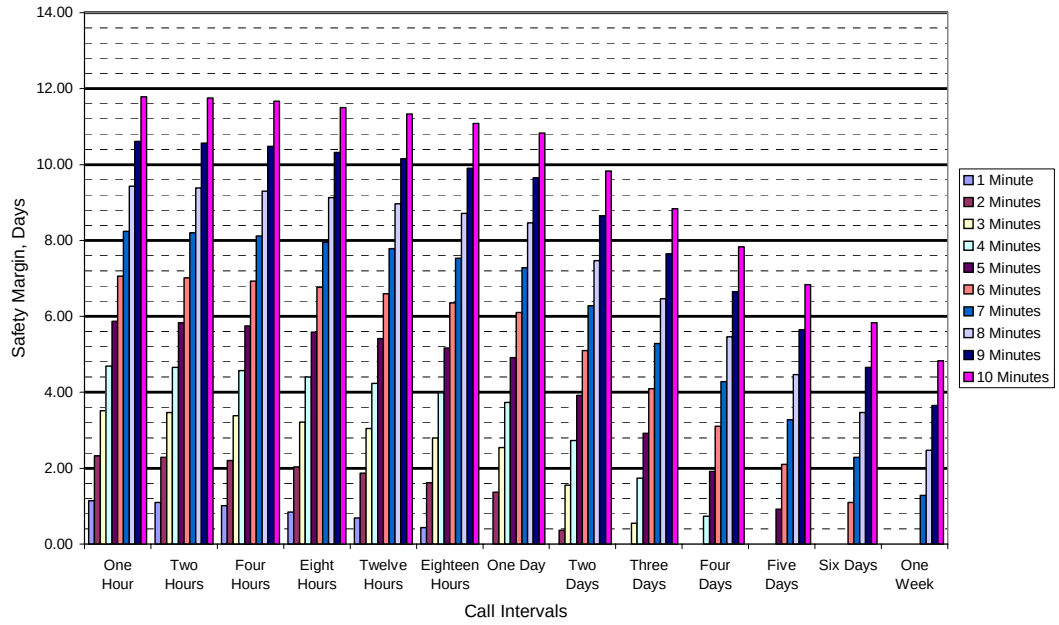


Figure 7-2 Safety Margin Graph

If STACC is used mainly to acquire data for later analysis then it makes economic sense to select a calling interval and logging rate to give the longest calling interval acceptable. If it is necessary to have the base Station updated with the unit's position at fairly short intervals, then longer logging intervals will keep the call costs lower.

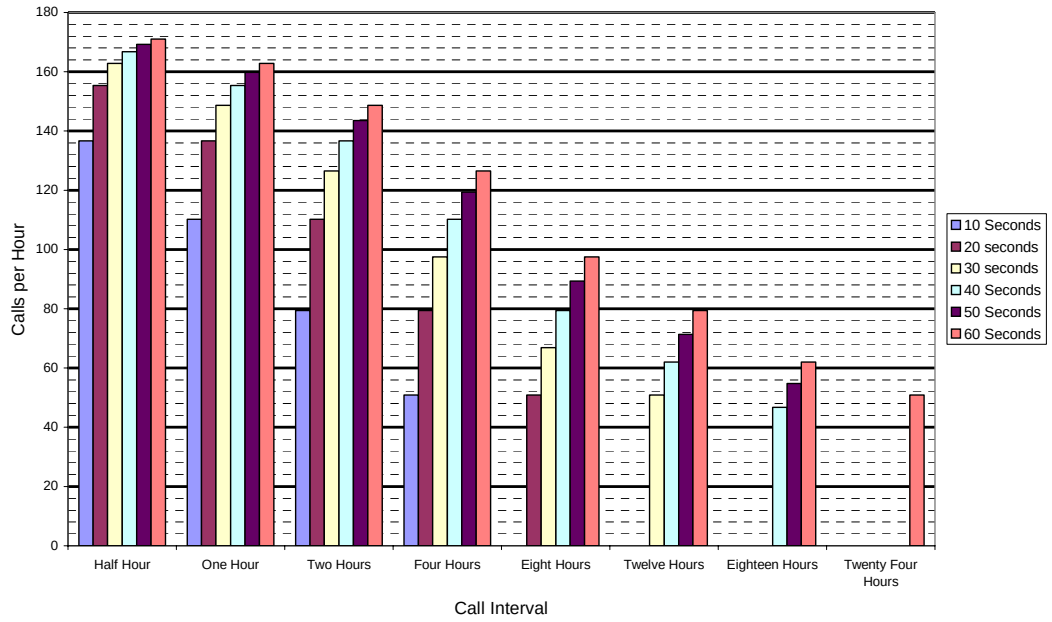


Figure 7-3 Maximum Calls Per Hour Graph

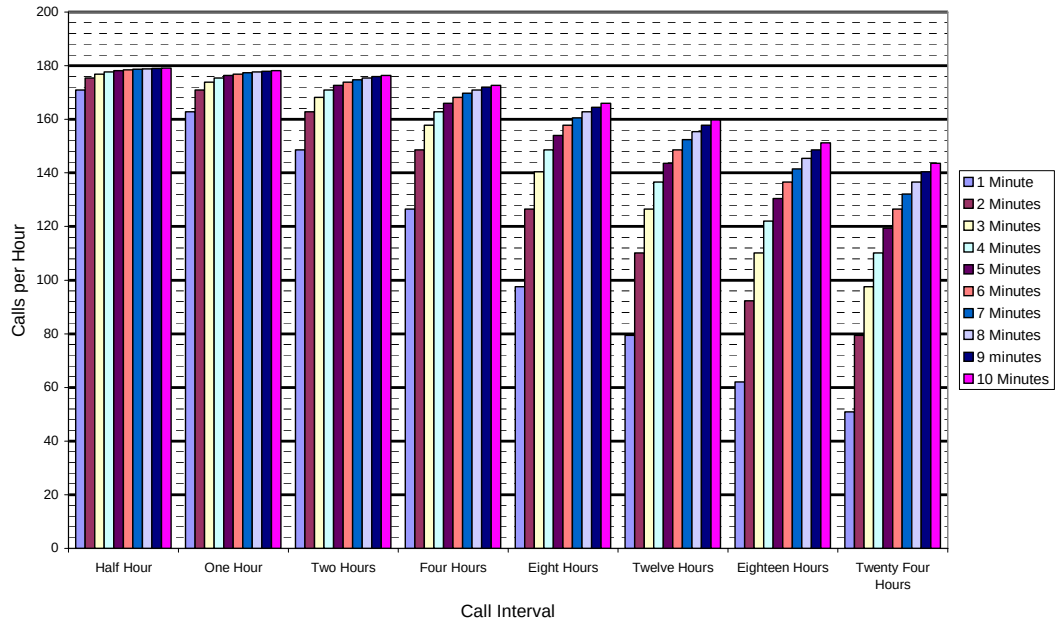


Figure 7-4 Maximum Calls Per Hour For Unit Logging Rate 1 to 10 mins

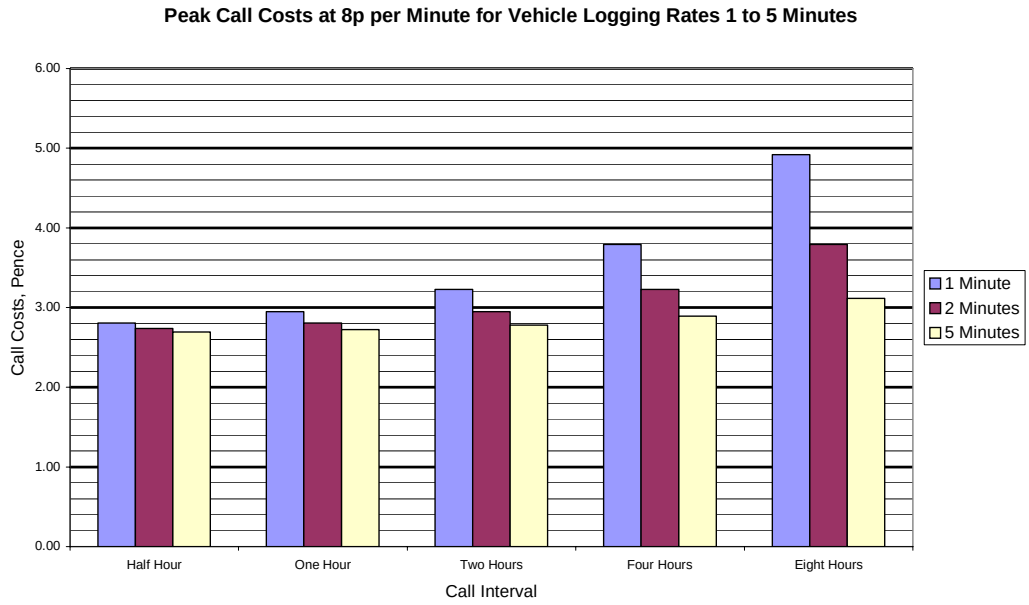


Figure 7-5 Costs Graph

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