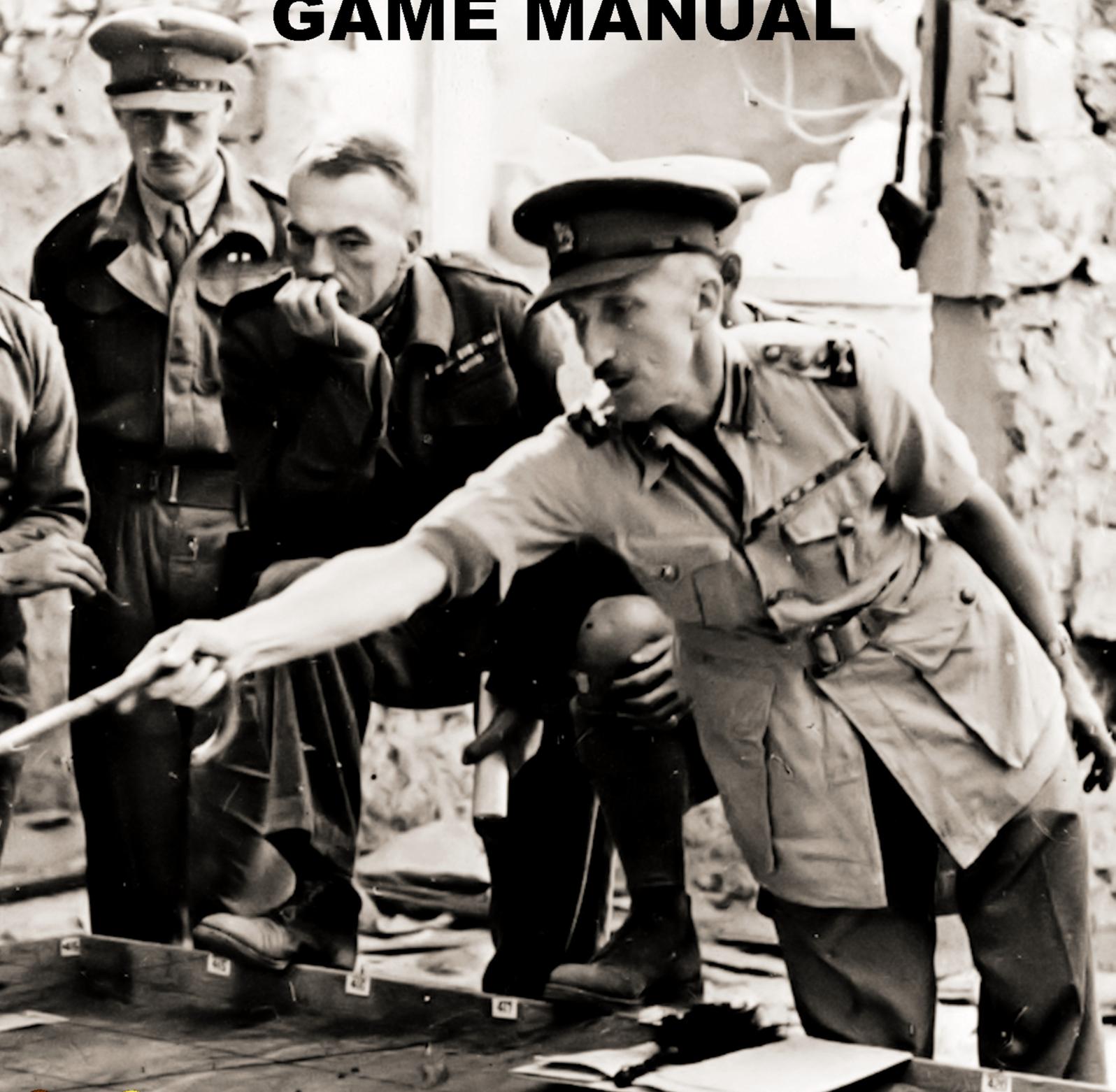


# COMMAND OPS 2

## GAME MANUAL





# **Game Manual**

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**Version 1.1**

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## COMMAND OPS 2

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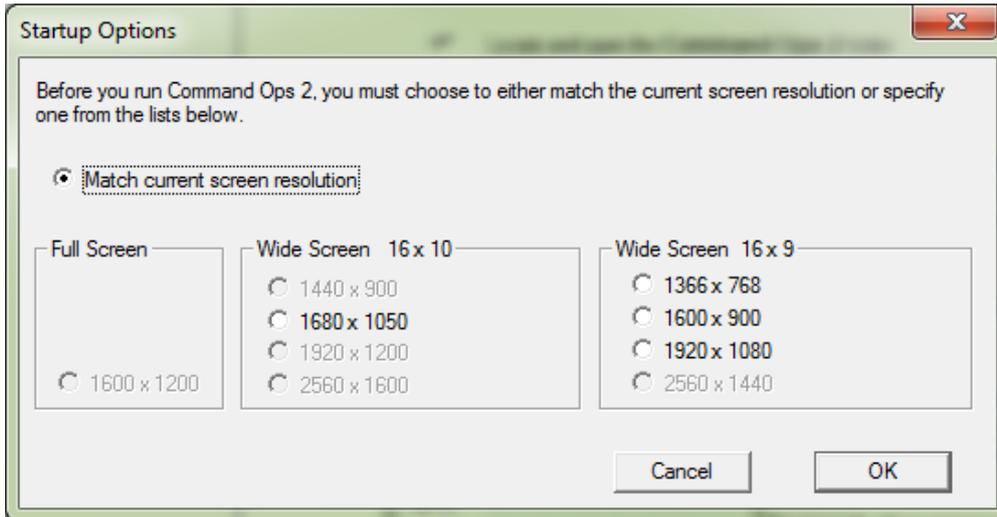
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## Basics

### Start the Game

- ☞ Select the game from the Start menu and select your preferred resolution from the Startup Options dialog or simply choose the default “Match Current Screen Resolution” option.



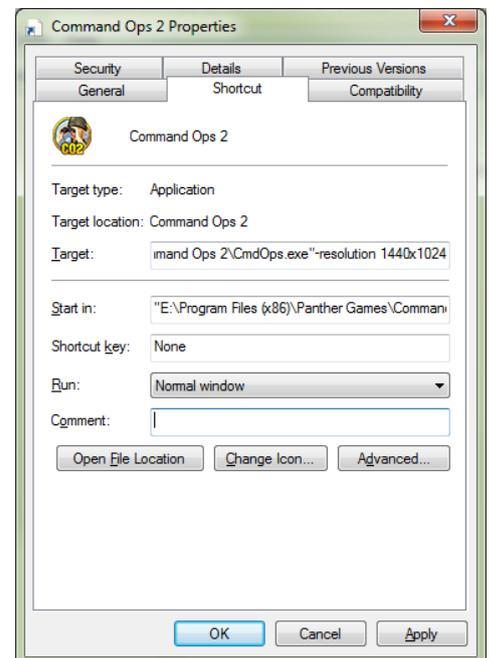
### Run in a Specific Screen Resolution

Command Ops 2™(CO2) is designed to run at one of the 9 preset resolutions or to match the current screen resolution . However, you can run the game at any resolution from 1366×768 to 3200×1990. To do this you must change the shortcut used when the game is launched:

- ☞ Right click on the **Start** button on the task bar and select Explore
- ☞ Locate and open the **Command Ops 2** folder

Note this may vary depending on where you have installed it.

- ☞ Duplicate the **Command Ops 2 Quick Start** shortcut by right-clicking on it, selecting **Copy**, then right-clicking on an empty space in the same area and selecting **Paste**.
- ☞ Right-click on the new shortcut and select **Properties**



- ☞ In the **Target:** field, scroll to the end of the line, add a space, then add the text **-resolution 1440x1024** (replace the numbers with the width and height of your desired resolution)

For example, if you want to run the game with the screen set to 1440 pixels wide and 1024 pixels high, you would add the text **-resolution 1440x1024**. If you have a default install, the complete contents of the **Target:** field would read:

⊕ "C:\Panther Games\Command Ops 2\CmdOps.exe" -resolution 1440x1024

- ☞ Click OK

- ☞ Launch the new shortcut and CO: BFTB will run in the resolution you have selected.

You might want to rename the shortcut afterwards to match the resolution you have selected.

## Start a New Single-Player Game

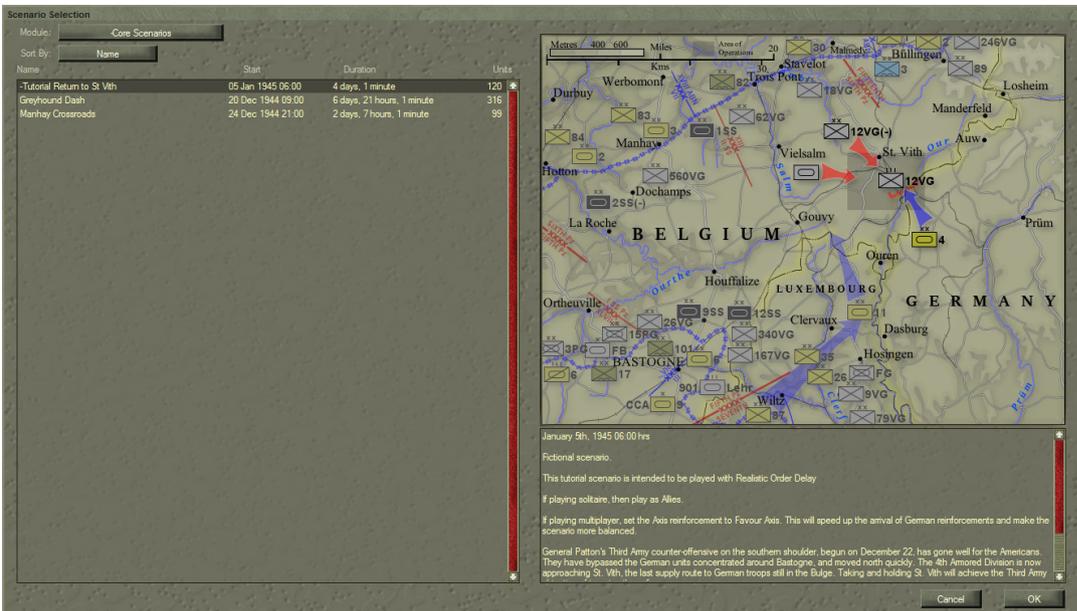
### Select Scenario

- ☞ On the Startup Screen, select New Game to open the Scenario Selection screen

Left and right click the Module button to navigate to the different data modules (scenario packs). Doing so will refresh the list of scenarios. These are sorted by name by default. Click on the Sort button to sort by Start, Duration or Active Unit Count. If you click on an entry in the list, a Situation Awareness Map (SAM) appears at the top right



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and a description appears at the bottom right.

The SAM provides operational context for the scenario, showing where the battle takes place in the bigger picture. It also provides a bit of information about where the front lines are and what forces are in play. It is designed to be viewed from a neutral perspective and should not include information that only one side would know.

If there is no SAM for the scenario then the default SAM image will appear.

☞ Select the desired scenario from the list and either click OK or double-click the scenario name open the New Scenario Options window.



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## Set Scenario Options

From the **New Scenario Options** window:

## Select a Side

- Click the Play As button

## Set the Orders Delay

- Move the Orders Delay slider to the desired level of orders delay

See [Work with Orders Delay](#) and [Orders Delay](#) for more information.

## Select the Weather Schedule

- Click on one of the four Weather buttons

See [Weather Options](#) for more information.

## Select the Reinforcement Schedules

- Click on the Axis Reinforcement Schedule button until the desired schedule appears
- Repeat for the Allies

See [Reinforcement Options](#) for details.

## Select the Supply Schedules

- Click on the Axis Supply Schedule button until the desired schedule appears
- Repeat for the Allies

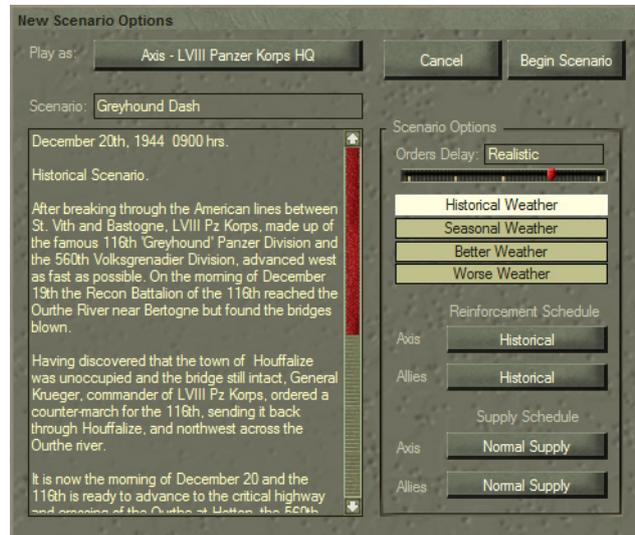
See [Supply Options](#) for details.

## Start the Game

- Select Begin Scenario

A progress window will appear while the scenario is loaded.

## Load a Single-Player Saved Game



## COMMAND OPS 2

- ☞ On the Startup Screen, select Load Game to open the Choose a Saved Game to Play dialog,
- ☞ While playing a game, select the Menu button on the Display toolbar



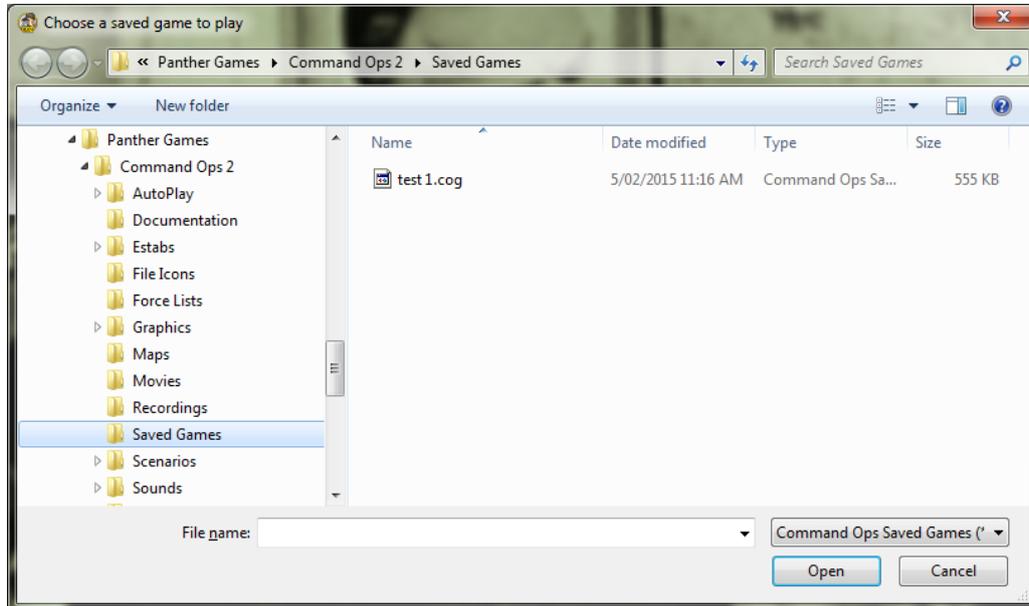
- ☞ From the Game Menu dialog click the Load Game button

Then from the **Choose a saved game to play** dialog:

- ☞ Select the desired saved game from the list and click Open, or
- ☞ Double-click the desired saved game



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As you are starting a previously saved game, there are no options you can alter. A progress window will appear briefly while the saved game is loaded. For single-player games, you will not be able to select which side to play – only the side you played when saving the game will be available.

## Save a Game

While playing the game:

☞ Press Ctrl + S keys  +  or

☞ Select Menu from the Display Toolbar and

☞ Select Save Game from the Game Menu

This will open the Save Game As window.

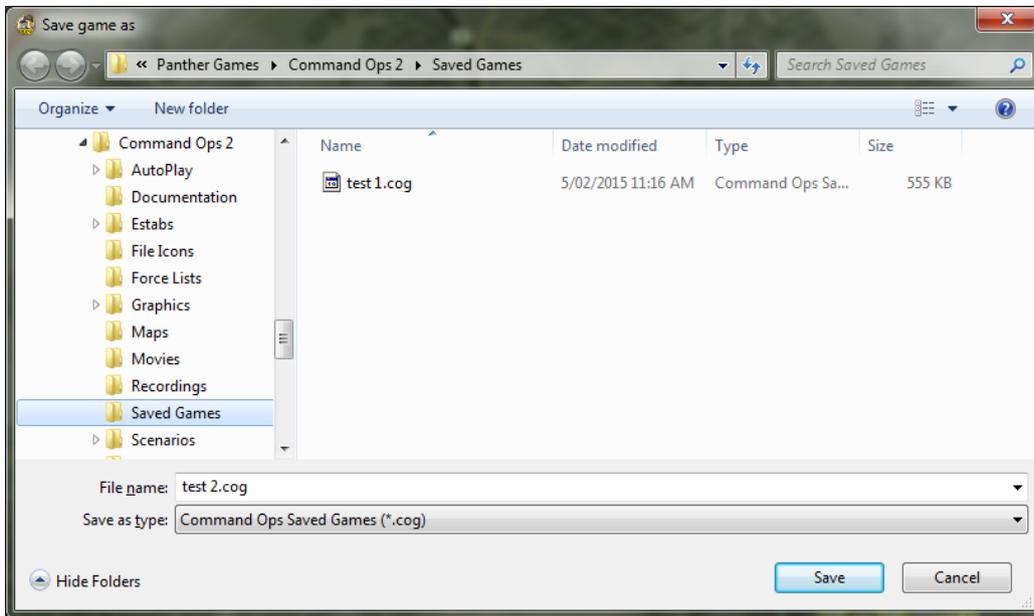
☞ Type in the desired file name, or

☞ Select a previously saved game from the list to save over the top of it

☞ Select Save

Your game will be saved and the game screen will be displayed again.

# COMMAND OPS 2

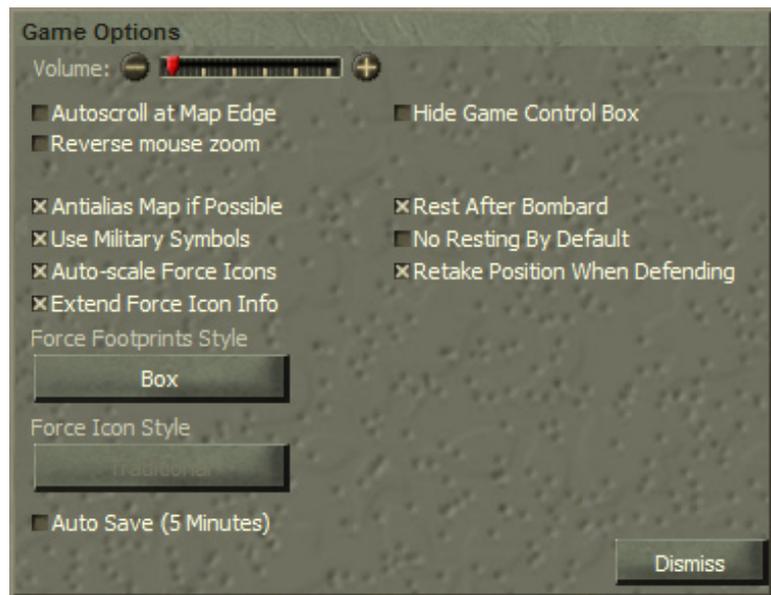


## Auto Save

To automatically save the game every 5 minutes of real time:

- ☞ Select Menu from the Display Toolbar and
- ☞ Select Options from the Game Menu
- ☞ Check the Auto Save box on the Options dialog

Note that this works in both single and multi-player games. The game will save even if it is paused or minimized. The game will be saved as **AutoSave.cog** and will be overwritten by the next auto save.



## Play a Multi-Player Game

### What You Will Need

To play CO: BFTB against another human, you'll need the following:

- ⊕ An Internet or Local Area Network (LAN) connection to an opponent with the same version of the game
- ⊕ The Internet Protocol (IP) address of the player who will Host the game

An IP address is a number (in the format `www.xxx.yyy.zzz`) that uniquely identifies your computer on the Internet or a LAN. For internet connections this is usually assigned by your Internet Service Provider (ISP). CO: BFTB provides an easy way to find out your IP address (see [Get Connected](#)) for most setups; if you run into trouble, contact your ISP for assistance.

Please note that there is a difference between your local IP address ( as used within your LAN ) and your public IP address ( the one you use for connecting to the internet ). Often the IP address displayed on your machine is your local address – eg 192.168.0.2. Use a website like [www.whatismyip.com](http://www.whatismyip.com) to determine your public IP address.

### Find an Opponent

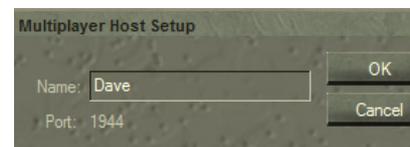
You can find someone to play against any way you like (common methods include e-mail, IRC, and Instant Messaging). There are various websites that maintain a register of potential opponents, including The Wargamer (<http://www.wargamer.com>). You can also use the included BattleHQ software to locate an opponent and set up a game. In choosing which player should host the game, remember that it's better to have the more powerful machine hosting.

### Get Connected

#### Host a Game

So you've lined up an opponent and arranged to be the host.

- ☞ Select Host from the Startup Screen
- ☞ Enter your name into the Multi-Player Host Setup dialog and click OK



The **Network Game Setup** dialog will now appear. Status information about your connection is shown below the **Choose Saved Game** button.

As the host, you need to tell your opponent your IP address. This is displayed at the bottom right of the Network Game Setup window. If you're playing over the internet:

## COMMAND OPS 2



- ☞ Click the Copy To Clipboard button to copy the IP address
- ☞ Paste it into an email or instant message and send it to your opponent
- ☞ Wait for your opponent to log in

When your opponent has logged in, a message will appear in the chat log. While you are waiting for your opponent, you can select a scenario or saved game to play.

### Join a Game

The other player has a simpler job - tell your host that you're interested, and then start the game, click join, enter the host's IP address.

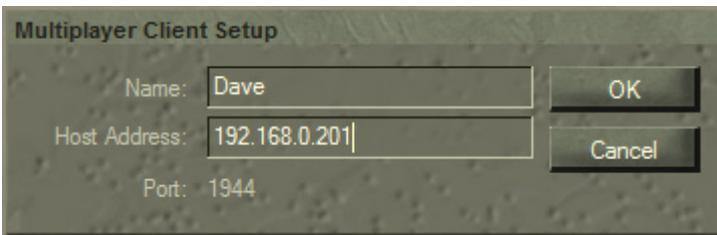
## GAME MANUAL

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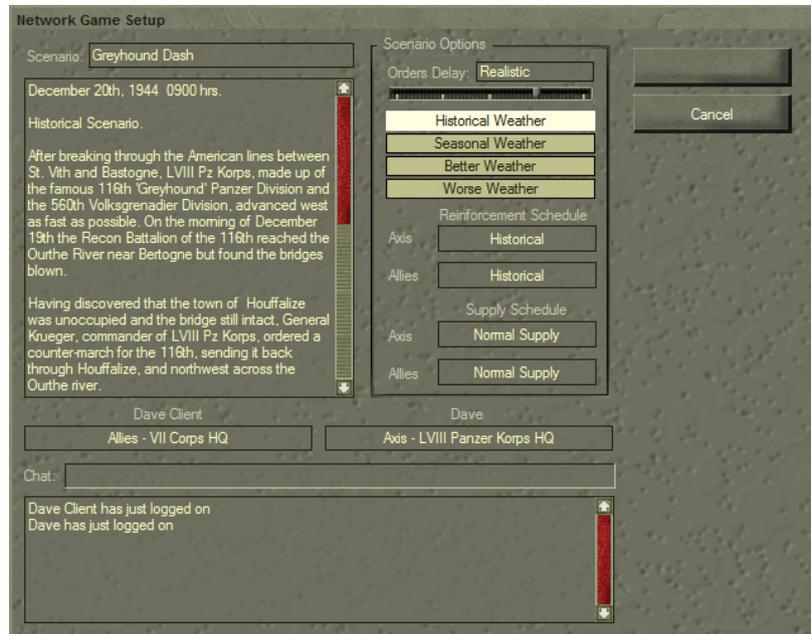
If you are loading a saved game, both players will need a copy of the saved game file to play. One player will need to email this to the other – it doesn't matter which player. Saved games can be quite large, so it's a good idea to use WinZip®, WinRAR® or a similar compression program to reduce the file size before emailing the saved game. When resuming a saved game, you may be prompted to enter a password; this helps to prevent cheating and also guards against accidentally picking the wrong sides when setting up to play.

So you've arranged for your opponent to be the host, and you have your Host's IP address.

- ☞ Select Join from the Startup Screen
- ☞ Enter your name and the IP address of the Host into the Multi-Player Client Setup dialog and click OK.

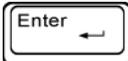


The **Network Game Setup** dialog will now appear. You cannot change any of the settings. The Host does this.



### Exchange Chat

You can exchange messages with your opponent. These messages will appear in the Chat log. To send a message:

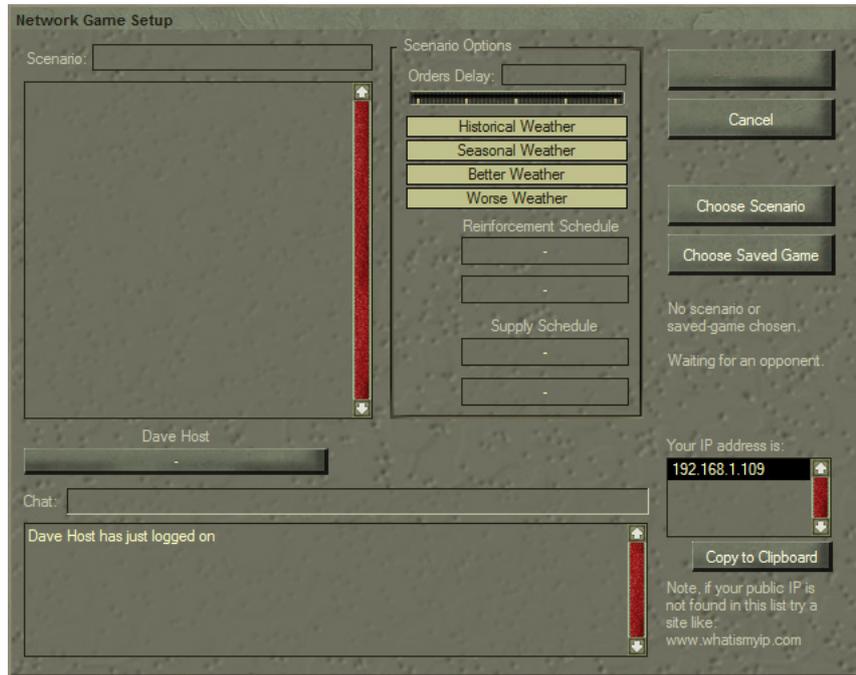
- ☞ Enter your message in the Chat box and press the Enter key 

# COMMAND OPS 2

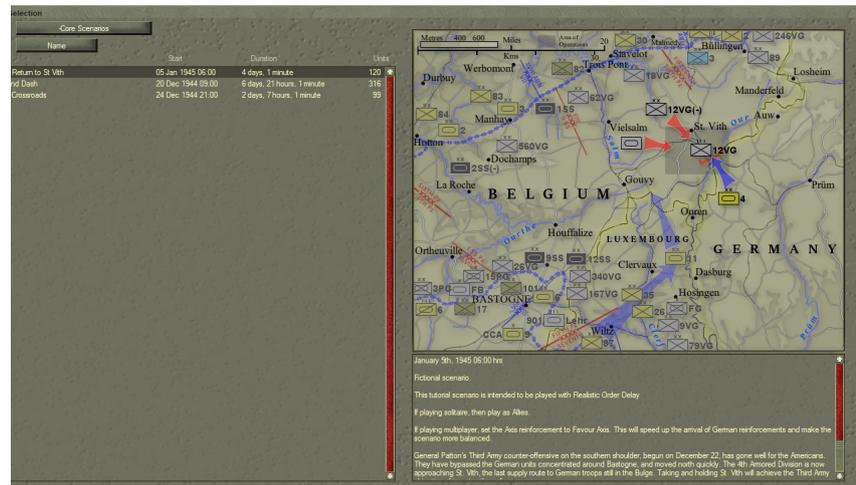
## Setup Multiplayer Game

### Choose New Multiplayer Scenario

For the hosting player, setting up a new multi-player scenario is just the same as starting a single-player scenario ( see [Starting a New Single-Player Game](#) ). You will be presented with the Scenario Game Setup screen. Note that on the right, below the Choose Saved Game button you can see that no scenario or saved game has been chosen yet and you are waiting for an opponent. You don't need to wait for an opponent to setup the scenario or saved game.

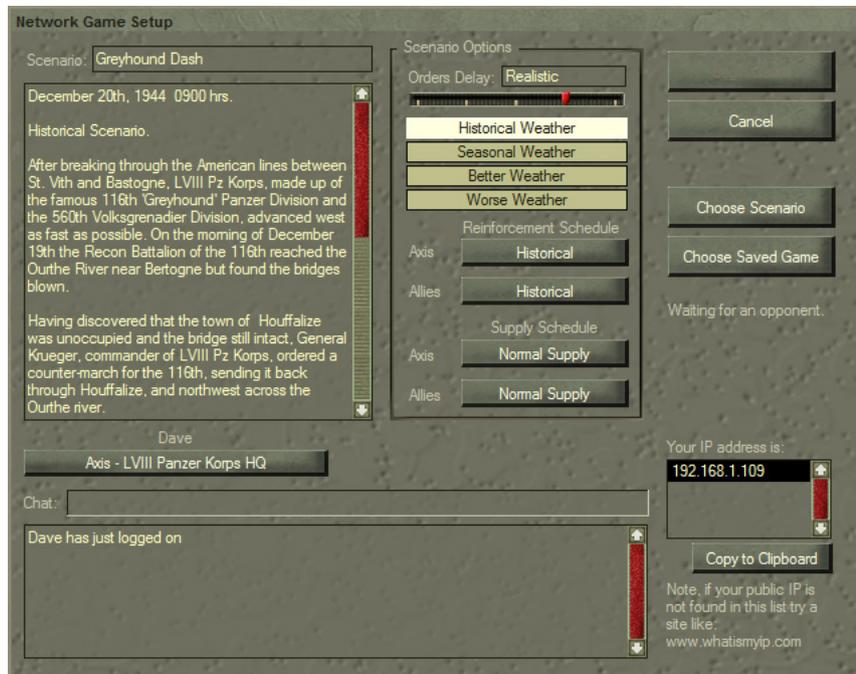


- ☞ Click Choose Scenario
- ☞ From the Scenario Selection screen, select the desired scenario from the list
- ☞ Hit OK



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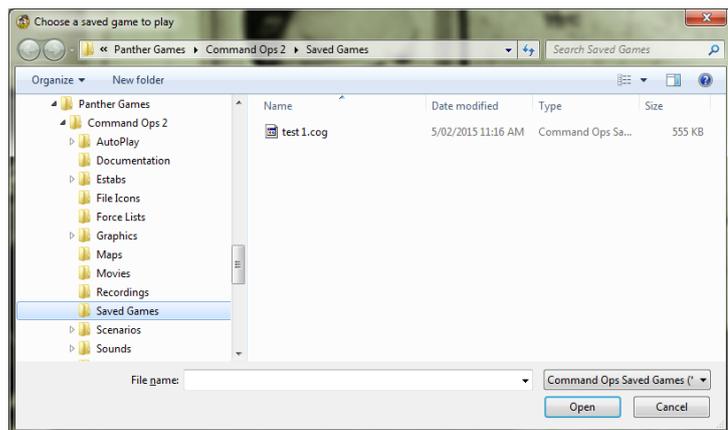
This will take you back to the Network Game Setup Screen, which will now be seeded with the scenario data.



### Choose Multiplayer Saved Game

As an alternative to starting a new multiplayer scenario you can restart a saved game. The saved game must be a multiplayer save not a single player save.

- ☞ Click Choose Saved Game
- ☞ From the Choose a saved Game to Play screen, select the desired saved game from the list
- ☞ Hit Open



Note both players must choose the exact same saved game. It is recommended that the host email the client their saved game and that the client places this in their Saved Games sub directory.

### Choose Side

Once your client joins you will see two Side buttons with the host assigned to one and the client to the other.

- ☞ Click either Side Selection button to swap sides

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## Multiplayer Scenario Options

- ☞ Set scenario options just as you would for a single-player game

The joining player cannot select a scenario or set the scenario options.

## Begin the Game

Once your opponent has been logged in and a scenario or saved game chosen, you are ready to start. This will be shown in the connection status information under the **Choose Saved Game** button. To start playing,

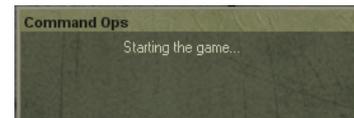
- ☞ Select Begin Game

Both players will be prompted to enter a password for the game. If you save the game, this password will be required to start playing the saved game, so make sure you write it down!

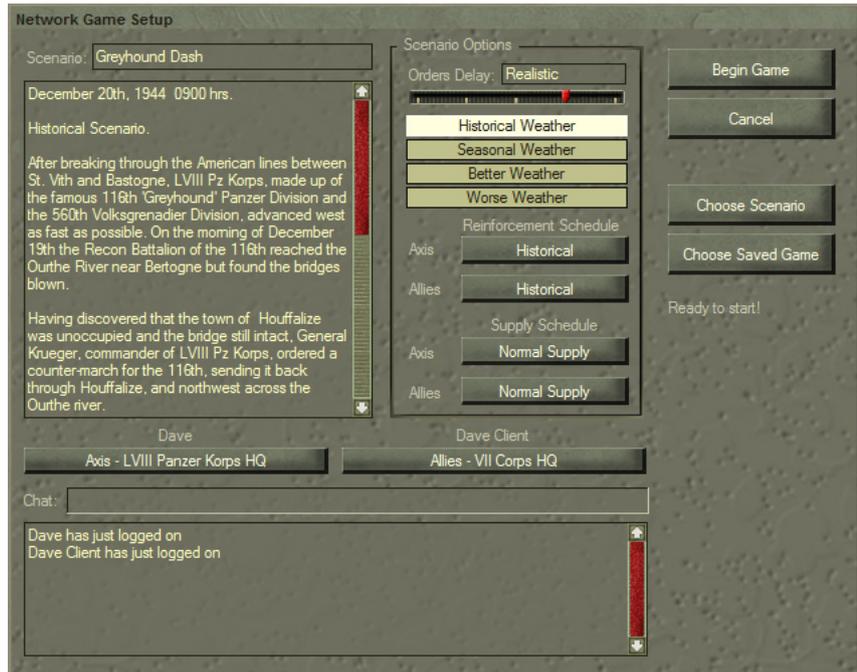
- ☞ Enter a password (it is case-sensitive)
- ☞ Confirm password
- ☞ Click OK



Depending on the size of the scenario and the speed of your machine it may take some time for the scenario to load. The following message will appear. Please be patient.

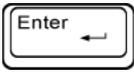


Also note that while in solitaire play game events are processed immediately, in multiplayer they are of necessity stored and transmitted to the other machine for processing. Hence there may sometimes be a short lag, depending on your network speed. Moreover, when the game is paused, things like the Air Strike counter won't be updated until the game is started running again.

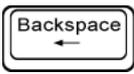


### Exchange Messages During Multi-Player Games

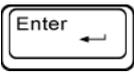
To send a message:

☞ Hit the Enter key 

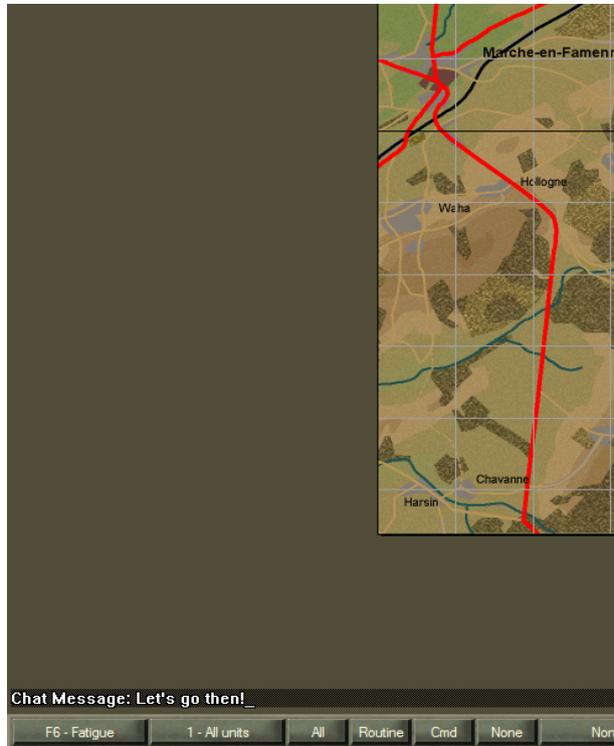
☞ Type your message

☞ Use Backspace  to erase the last character

As you type your message, it will be displayed at the bottom left of the Battlemap.

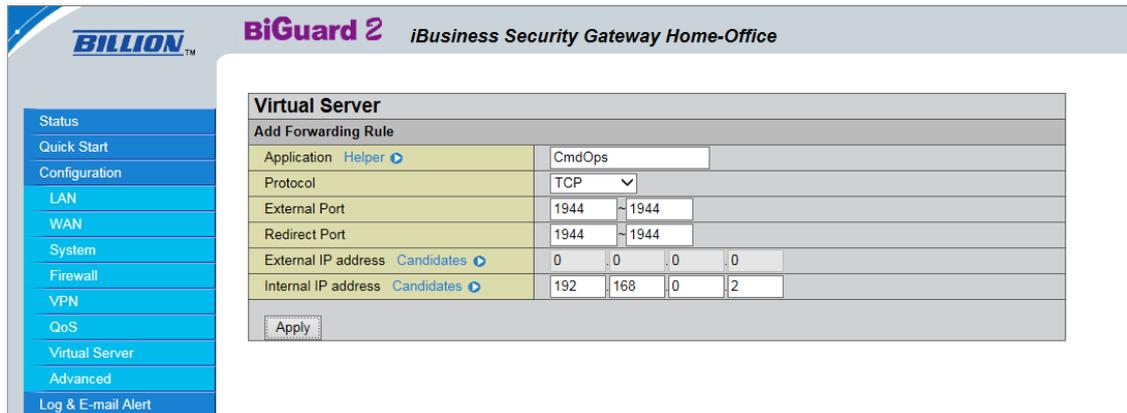
☞ Hit Enter  again to send the message to your opponent.

The chat messages then appears in the message list at the top left of the Battlemap.



### Firewalls, Internet Connection Sharing & Port Forwarding

You will need to configure your router to ensure that access to port 1944 is permitted. You do this by configuring Port Forwarding using the software that comes with your router or firewall. By way of example, here is a setup for a machine with an IP address of 192.168.0.2 connecting via a Billion router.



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Some firewalls may not allow you to open or close a particular port but will allow you to grant access to certain programs – if you have one of these firewalls, you should give Command Ops 2 both Access and Server permissions for the Internet Zone. Depending on your firewall, you may not be able to host multi-player games even if you have given Command Ops 2 these permissions, but you should be able to join without problems.

### Reconnect

If for any reason connection between the host and the client is lost then:

- ☞ Reconnect - see [Get Connected](#)
- ☞ Load the last saved game you had - see [Choose Multiplayer Saved Game](#)

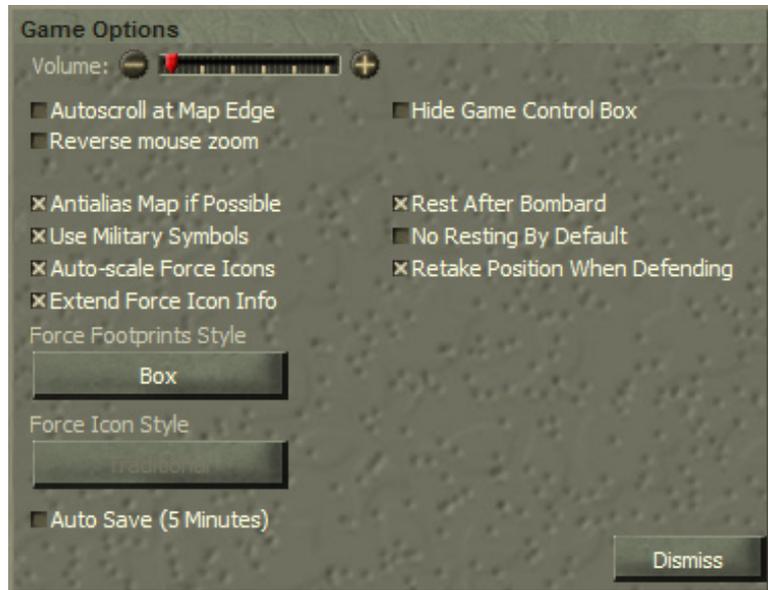
When playing multi-player:

- ⊕ Save early, save often or
- ⊕ Turn on Auto-Save - see [Auto-Save](#).

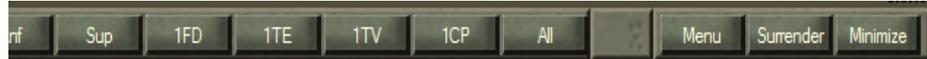
### Set Sound Volume

To increase or decrease the volume of game sounds:

- ☞ Select Menu from the Display Toolbar and
- ☞ Select Options from the Game Menu
- ☞ Drag the red marker to the desired level in the Volume Controller of the Options dialog, or
- ☞ Click one or more times on the Plus or Minus buttons, or
- ☞ Click on the Volume Controller notch that represents your desired sound level



## Minimise



- ☞ Select Minimise from the Display toolbar

The application will then be minimised and a button appear in the Windows Taskbar.

To maximise / expand the application:

- ☞ Select the Command Ops button in the Windows task bar

## End a Scenario

To exit a scenario:

- ☞ Select Menu from the Display Toolbar

This will display the Game menu in the middle of the screen.

To end the scenario and go back to the **Startup Screen**:

- ☞ Select Leave Game

To end the scenario and go back to the Windows® desktop:

- ☞ Select Quit Command Ops

To go back to playing the scenario:

- ☞ Select Return to Game



## Quit the Game

To quit Command Ops:

- ☞ Select Quit Command Ops from the Game menu

See [End a Scenario](#) for information on how to quit during a game.

---

## How to Play the Game

### Introduction

Command Ops 2 is the fifth in the Command Ops (formerly Airborne Assault) series of event driven, pausable continuous time wargames. Since its inception the series has been breaking new ground. While there are many innovative features we have endeavoured to provide a very intuitive interface. If it looks like it should work this way then it probably does. Try it and see.

We have also endeavoured to keep things simple, with the complexity “under the hood” ( ie managed by the AI ). You can play the game very simply as well. In fact in some of the simpler scenarios all you need do is give a few simple orders and hit the Run button. However, the real joy in playing comes when you get more involved.

As the player you are cast in the role of the senior on-map commander - ie the commander of the senior on-map unit, otherwise referred to as the “on-map boss”. The on-map boss may change during the course of play as reinforcements arrive or in the tragic event of the on-map boss being destroyed when the next senior unit takes charge. Regardless you are always the senior commander.

We encourage you to adopt the perspective of the senior commander. In real life the senior commander would usually command one or two levels down. So if the senior commander is a Divisional commander, he would issue orders down to his brigades and battalions. In a few special cases he may give direct orders to companies, but by and large he leaves their management to his subordinate commanders.

You can **trust your AI controlled subordinate commanders** to do a reasonable job of implementing your orders and managing their subordinates. That is the hallmark of the Command Ops game engine.

### Read the Game Screen

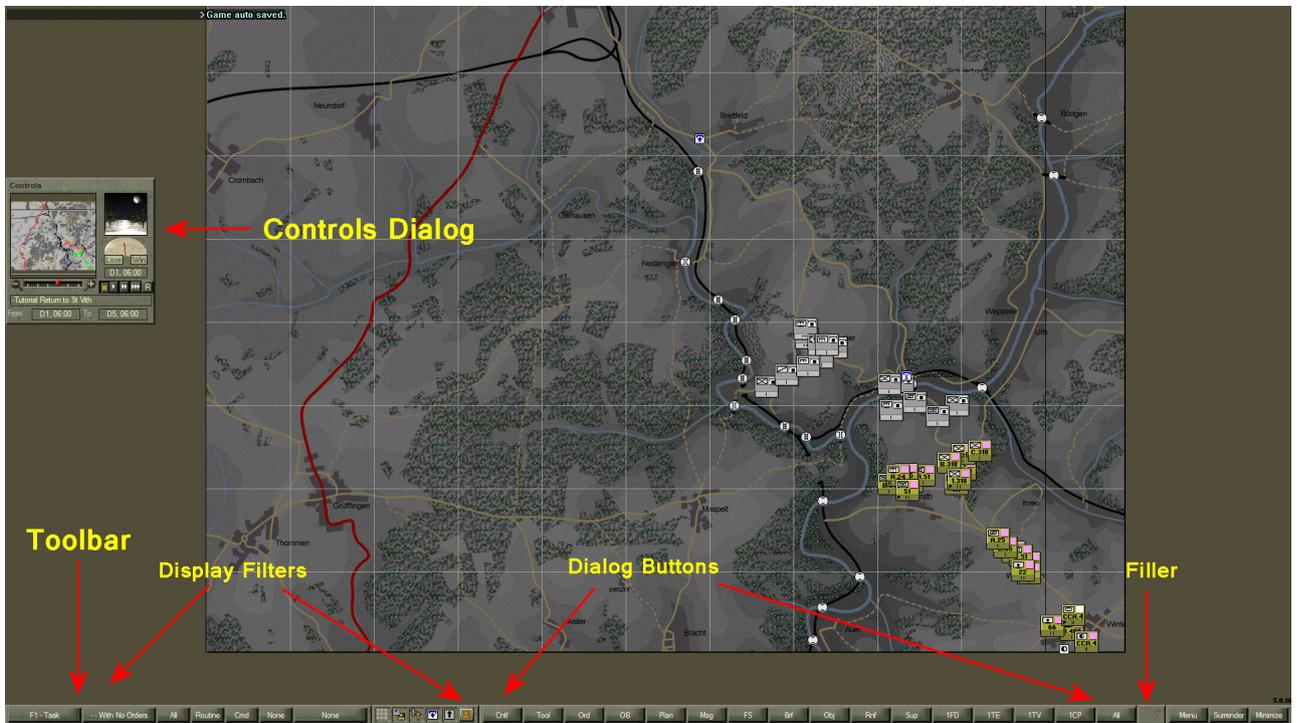
When the game starts, you will see the game screen on your main monitor. The main area of the screen is taken up with the Battlemap (see [Battlemap](#)). Along the left edge of the Battlemap, you will see the Controls dialogs. At the bottom of the Battlemap you will see the Toolbar ( see [Toolbar](#) ). The toolbar houses a number of buttons and controls.

From the left you have the **display filters**. Use these to turn on and off different overlays or graphical icons or change the data being displayed in an icon. In the middle you have the **dialog buttons**. Use these to show or hide the various dialogs. The All button shows/hides all the dialogs. They act as a toggle - ie if the dialog is open, then click it to hide it. If it’s not opened, then click it to open it.

Use the Controls dialog to navigate via the StratMap, zoom the battlemap and set the game speed.

### Manage Dialogs

With Command Ops 2 we have moved away from the use of the sidebar to display all the data. Instead you now access data from various dialogs which you open using either the Main toolbar or from the context menu of unit, order and task icons on the battlemap.



## Open Dialog Using the Toolbar

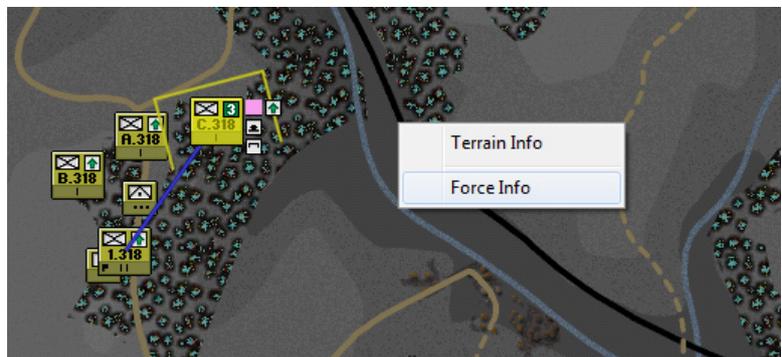
To open one of the dialogs:

- ☞ Click the appropriate button - eg to open the Fire Support dialog click “FS”.

## Open Dialog Using the Context Menus

To open a Force Data dialog from the Battlemat:

- ☞ If not already selected, select a unit on the map (ie click it)
- ☞ Right click on a selected unit
- ☞ Select Force Info from the menu



## COMMAND OPS 2

To open an additional force data dialog from the Battlemat:

- ☞ If not already selected, select a unit on the map (ie click it)
- ☞ Right click on a selected unit
- ☞ Hold the Shift key down and select Force Info from the menu



Note this will in effect create a duplicate of the first force data dialog. Select another unit and the first dialog will update with the details for the newly selected unit while the additional dialog will retain the data for the originally selected unit. Additional dialogs always relate to the unit that was selected when they were created. The first dialog, however, shows the data for the current selection.

To open a Force Data dialog from the OB Display:

- ☞ Double click the unit in the OB display

To open an additional Force Data dialog from the OB Display:

- ☞ Hold the Shift key down and double click the unit in the OB display

## GAME MANUAL

To open an Edit Task dialog:

- ☞ If not already selected, select an order task on the map (ie click it)
- ☞ Right click on a selected order task
- ☞ Select Edit Task from the menu

To open an additional Edit Task dialog:

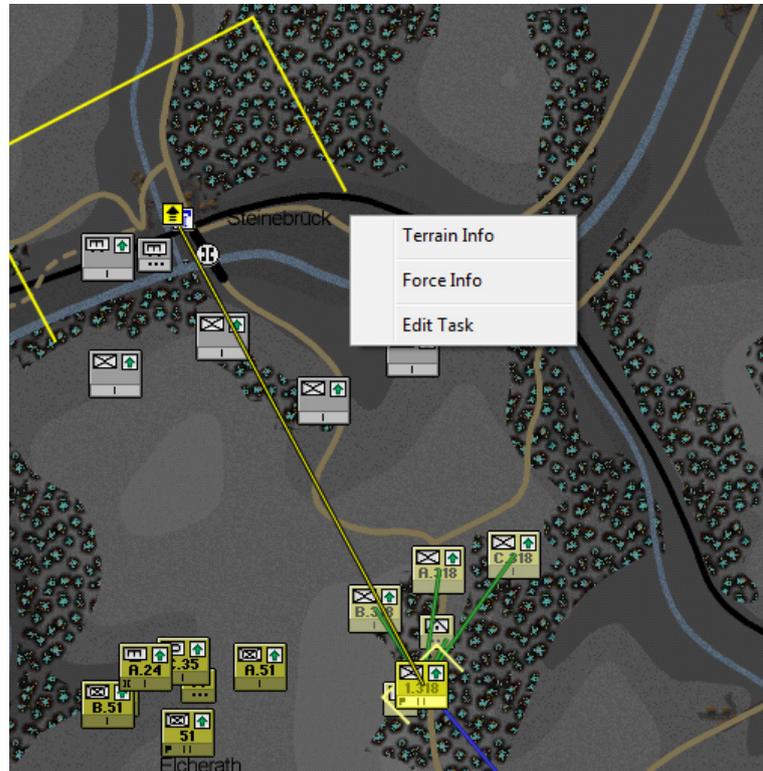
- ☞ If not already selected, select an order task on the map (ie click it)
- ☞ Right click on a selected order task
- ☞ Hold the Shift key down and select Edit Task from the menu

To open a View Task dialog:

- ☞ If not already selected, select a plan task on the map (ie click it)
- ☞ Right click on a selected plan task
- ☞ Select View Task from the menu

To open an additional View Task dialog:

- ☞ If not already selected, select a plan task on the map (ie click it)
- ☞ Right click on a selected plan task
- ☞ Hold the Shift key down and select View Task from the menu



# COMMAND OPS 2

## Close a Dialog

To close a dialog, either:

- ☞ Click on the Dismiss button at the bottom right of the dialog or
- ☞ Click on its button in the toolbar

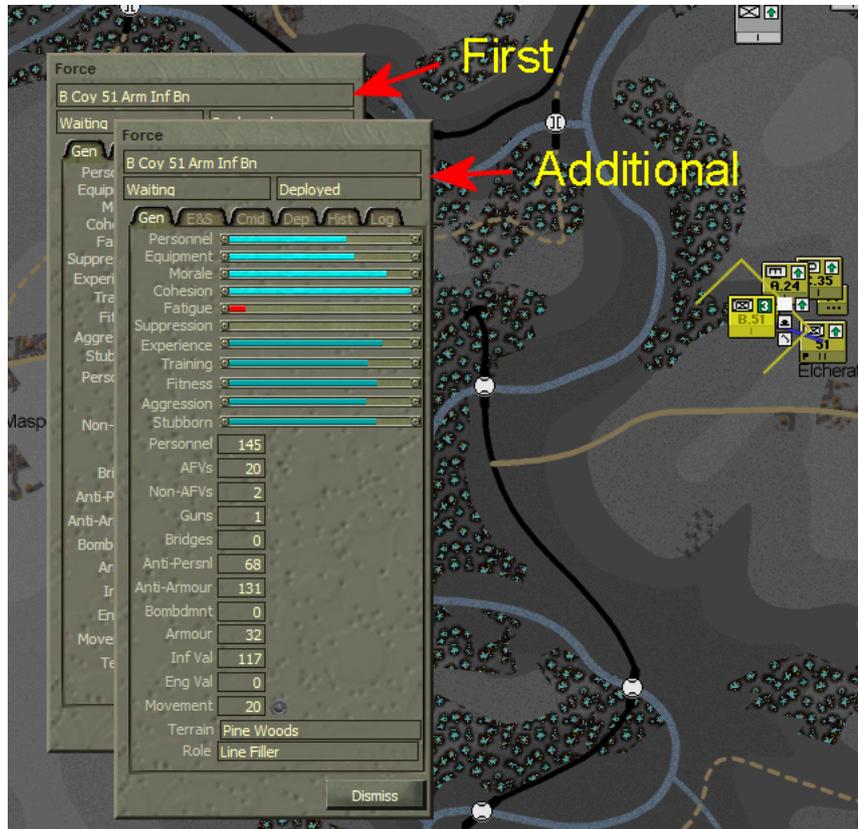
Note if a data object (force, order, plan task) is deleted for any reason then any opened dialog displaying that object will remove its data from the dialog. So you may end up with a blank dialog.

## Reposition a Dialog

You cannot reposition the Toolbar. To reposition all other dialogs:

- ☞ Drag them to the desired location.

Note that the new position will be saved in your preferences. Next time you open the dialog it will appear in the saved location. This does not apply to additional Unit Data, Edit Task or View Task dialogs. For these only the position of the first one will be saved. Additional ones will be opened offset down and to the right from the first dialog position.



Note by repositioning additional force data dialogs you can view the different tabs together to get a comprehensive view of the units data.

Alternatively you can compare the same data for multiple units.

### Update the Data

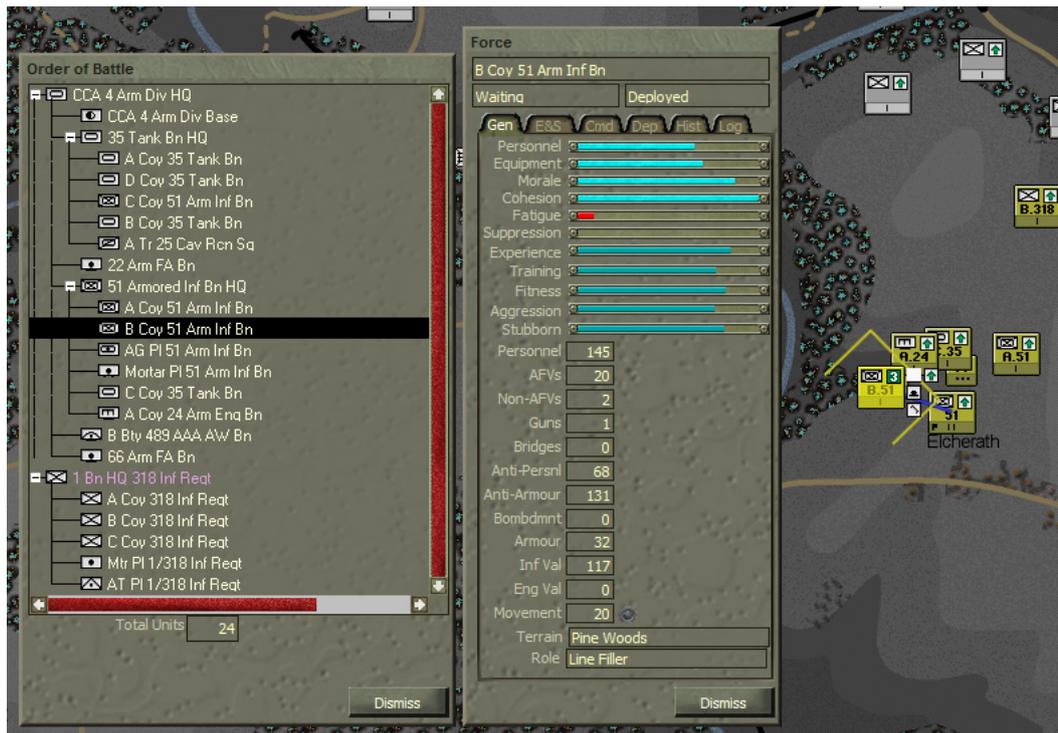
For Force Data, Edit Task and View Task dialogs you can update the data displayed in them by selecting another force, order or plan task from the map. This allows you to click on their icons and see the data for each very quickly.

Note it only works for the first force data dilaog, first edit task dialog and first view task dialog. Additional data dialogs retain the data of the object originally selected.



### Sync Selection of Forces

If you select a unit in the OB display it will select the unit on the map and it will update the data of the first Force Data dialog.



## Set Game Speed and Pause



Once the game has loaded and the Battlemap displayed, the game will remain paused until you set a play speed – called “running the clock”. Once the clock is running, the game will continue to execute until you pause it again.

The speed of play (i.e. the ratio of game time to real time) varies according to a host of factors including the speed of your computer, the size and complexity of the scenario, the number of units on map, their proximity to each other, the map area and terrain, the number of currently selected units and tasks, the number of on-map messages displayed, the screen resolution and so on.

From left to right they are: Pause, Slow, Normal, Fast and Run Until.

☞ Click one of the Run buttons to start play at the desired speed

To toggle between **Pause** and the currently selected Run speed:

☞ Click the left or Pause button to temporarily stop play, or

☞ Press the spacebar

To increase speed:

☞ Press the > key or click a faster Run button

To decrease speed:

☞ Press the < key or click a slower Run button

Some things can make the game run faster or slower:

⊕ Turning off map anti-aliasing can speed up the game (this is a special type of anti-aliasing and is not affected by video card settings) – see [Options Dialog](#)

⊕ Leaving large numbers of units selected while the game runs can also slow the game down

## Speed in Multi-Player Games

The speed of play can be set by both players in multi-player games the same way it is in a single-player game – see [Set Game Speed and Pause](#) and [Run Buttons](#).

In a multi-player game, the game will run at the slowest speed chosen by both players. So if you choose Fast but your opponent chooses Normal, the game will run at the Normal speed. In such a case, you will see the Fast button depressed but the Normal button highlighted.

Whenever one player selects the **Pause** button or presses the

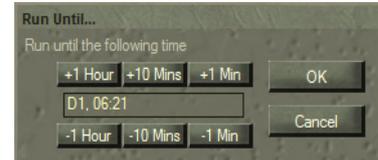
Space

spacebar, the game will pause for both players until that player sets another run speed.

## Run Until

To specify a time that the game will run until using the fastest possible speed:

- ☞ Press the Run Until button
- ☞ Click on the +/- buttons to adjust the time as desired
- ☞ Press OK



The game will now run as fast it can, limiting refreshes to every 10 frames or thereabouts. In smaller scenarios this may appear a little jerky. At the specified time it will automatically pause the game.

While running both the Fastest and the Run Until buttons will be depressed. To view the specified time while the game is running:

- ☞ Roll over the Run Until button

## Offer or Accept Surrender

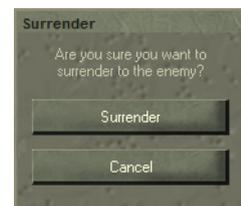
### Offer surrender

If you have had enough and want to concede defeat:

- ☞ Select the Surrender button on the Display Toolbar

A dialog will appear, asking you to confirm.

- ☞ Select the Surrender button.



The AI opponent will always accept your offer to surrender. When you surrender, you will not suffer any more casualties but you will also not receive any victory points, even if you still hold objectives.

### Accept surrender

When playing the computer (or another human), your opponent may assess that it's a lost cause and offer to surrender. If this happens, a message will appear in RED at the top left of the Battlemap offering surrender.



## COMMAND OPS 2

Note a computer opponent will only offer to surrender if you have a current Decisive win. Check the Victory meter in the Controls dialog.

Of course you can choose to ignore this and fight to the bitter end. If, however, you want to accept the surrender:

☞ Select the Accept Surrender button from the Display toolbar

A dialog will then ask you to confirm.

☞ Select the Accept Surrender button.

## View Messages

During the Game you will receive messages from a number of sources. Network and Chat messages will appear directly on the map at the top. All other messages including those from your subordinates will appear in the Message Log Dialog.

To open the Message Dialog:

☞ Select the Msg button on the toolbar.



To navigate to the most recent:

☞ Scroll the list up

To filter out texts of a certain type:

## GAME MANUAL

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☞ Toggle the Flash, Urgent or Routine buttons at the bottom left.

Note that unlike the filters for the on-map messages, the filters for the Message Dialog are discreet - eg Routine displays only routine messages.

To find the Subject of the report on the map:

☞ Select the entry in the list.

Note

⊕ Messages are not saved when you save a game, so if there is an important message you will need to remember, write it down



# COMMAND OPS 2

## Navigate Map Messages

To select the most recent message:

☞ Press the End key 

To Move up and down the list:

☞ Press the Page Up key  to select the previous message

☞ Press the Page Down key  to select the next message

To select the sender of the message:

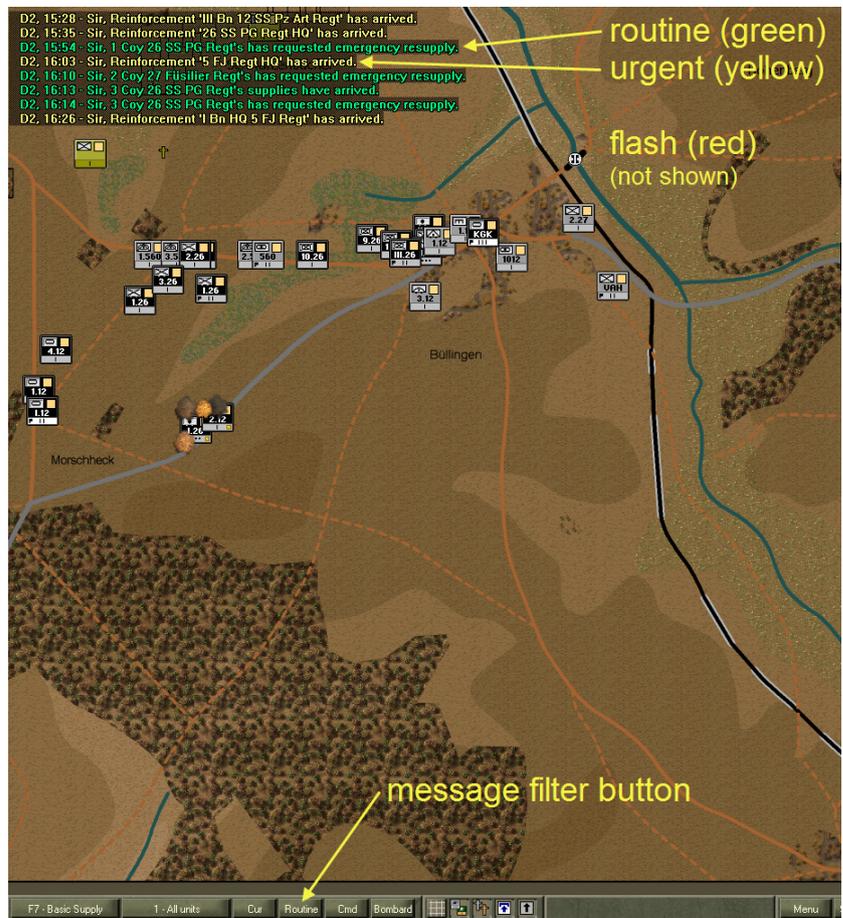
☞ Press the Home key 

This will scroll the Battlemat to display and select the sender of the message. However, this will not happen if the message is one that does not have a sending unit, such as when airstrikes are available. When units are destroyed, selecting the message will centre the Battlemat on the destroyed unit's location but will not select the cross that's left behind.

To filter messages by priority ( None, Routine, Urgent, Flash ):

☞ Select the Message Filter button from the Display toolbar till the desired option is displayed

Note that selecting Routine will display all messages; selecting Urgent will display both urgent and flash; selecting Flash will only display Flash and of course selecting None will not display any messages.



## Use the Battlemap

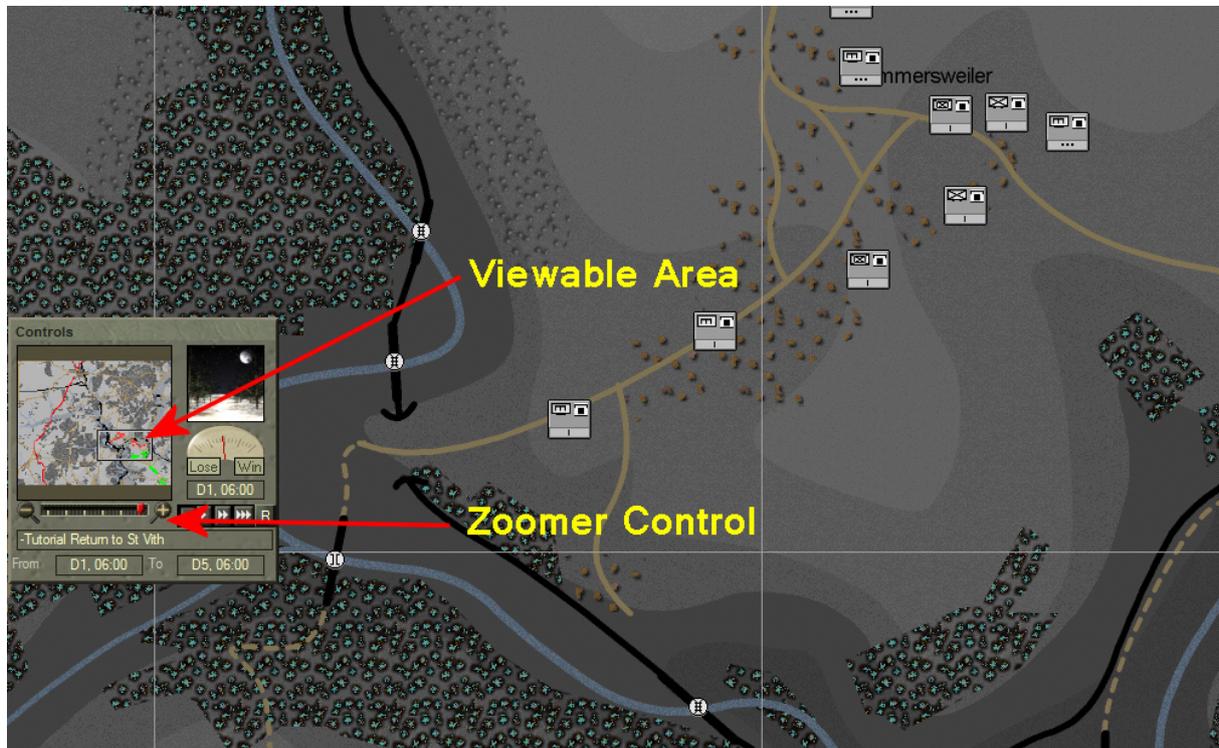
Note that the gamma of the battlemap will change at dawn and dusk - ie it gets lighter at dawn and darker at dusk.

### Pan and Zoom the Battlemap

The Battlemap may only show a small proportion of the total battle area. The area of the Battlemap currently displayed is indicated by the **Viewable Area** rectangle in the Stratmap. This has a white and black border.

To scroll around the map:

- ☞ Right-click and drag the Battlemap, or
- ☞ Move the mouse pointer to the screen edge to scroll the map in that direction, or
- ☞ Drag the Viewable Area rectangle in the Stratmap, or
- ☞ Click on the Stratmap outside of the Viewable Area rectangle



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To zoom in or out:

- ☞ Click the left - Zoomer button to zoom out one level or the right + Zoomer button to zoom in, or
- ☞ Drag the Zoomer Slide left to zoom out or right to zoom in one or more levels, or
- ☞ Hold down the Alt key  and left-click on the Battlemap where you want to zoom in, or right -click where you want to zoom out, or
- ☞ Move the mouse scroll wheel up and down to zoom in and out

To reverse the zoom direction of the mouse scroll wheel:

- ☞ Check the Reverse mouse zoom item in the Options dialog

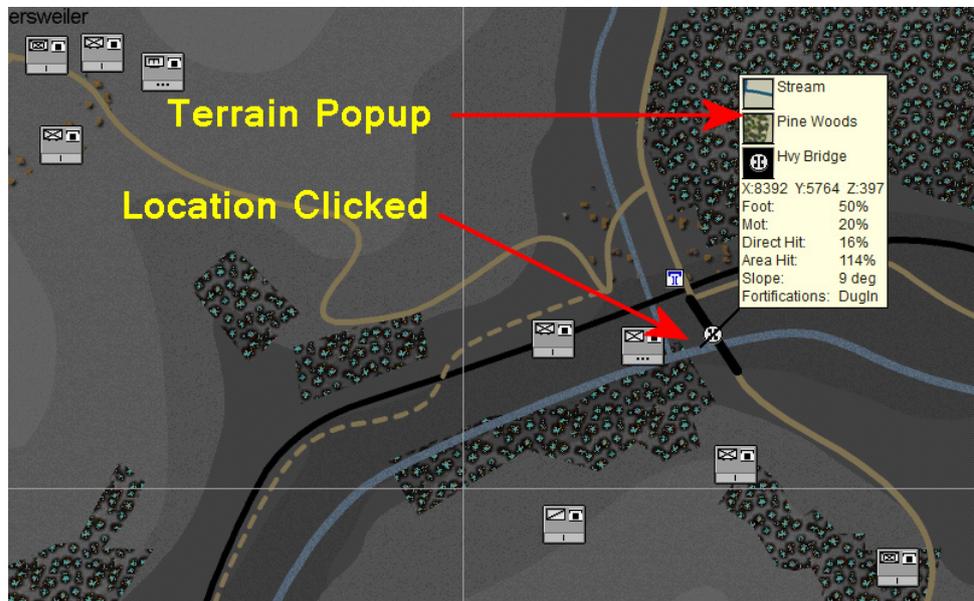
### Identify Terrain Types

To find out what terrain is at a given location:

- ☞ Right click on the Battlemap at the location you want to investigate.

Note that the location is expressed in terms of three values - X = horizontal distance in metres from the top left, Y = vertical distance and Z = height or altitude. The Foot % and Mot % indicated the speed modifiers applied to foot and motorised units traversing the location. Direct hit effect refers to the percentage modifier applied to any fire from direct fire weapons such as rifles and anti-tank guns. Area hit effects are those applied to bombardment and air strikes.

Slope indicates how steep the ground is. The steeper the slope the slower units can move through the location. Further, motorised units can only traverse ground with more than a 30 degree slope if a road is present. Units firing uphill do so at a disadvantage, while those firing downhill get an advantage.



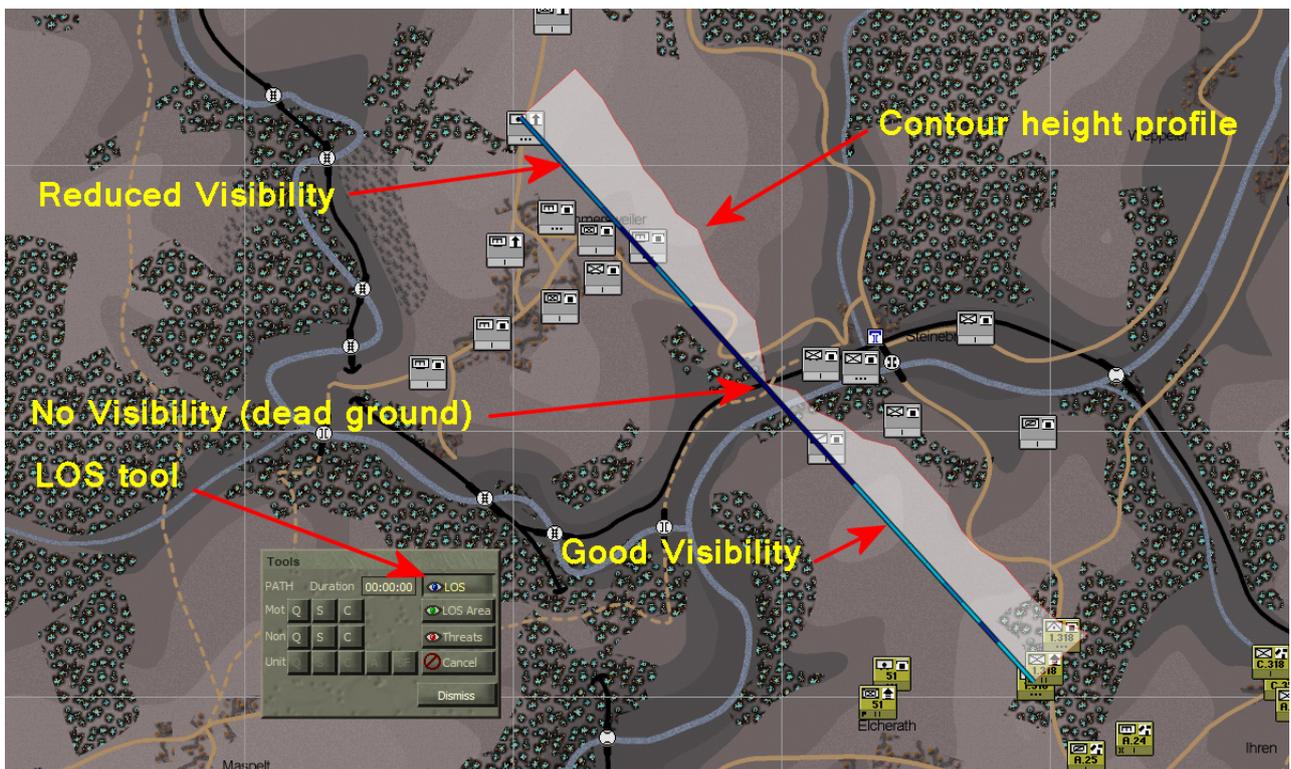
## Assess Line Of Sight (LOS)

### Direct LOS Tool

There are two LOS tools – direct and area. To determine whether one location can be seen from another using the direct LOS tool:

- ☞ Click on the LOS button from the Tools dialog, or
- ☞ Press the L key 
- ☞ Click on the desired start location
- ☞ Drag the LOS Cursor to the desired end location.

The line of sight will be drawn between your starting point and the **LOS Cursor** as you drag it around. It will disappear once you release the mouse button. You can then draw another line of sight from a different location by repeating the procedure. You can continue to drag the cursor and the LOS line will be updated to each new end location. The start location can be any location on the map –you don't have to have a friendly unit present.



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When you're finished:

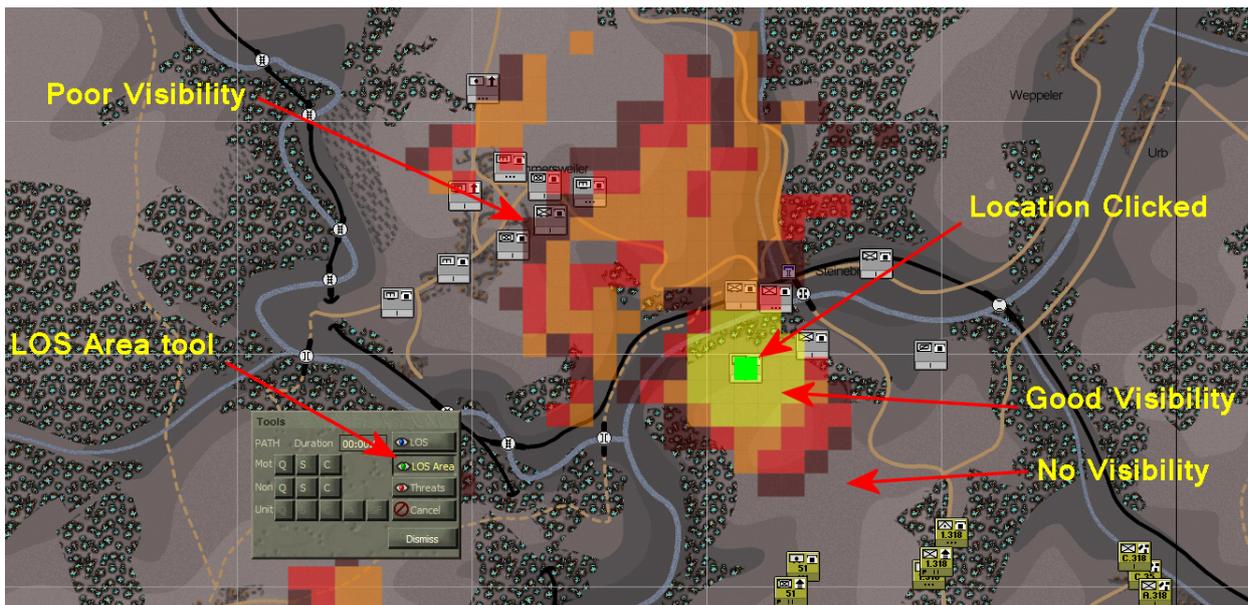
- Click the Cancel button or press the Esc key  to revert to the mouse pointer.

The lighter the blue colour, the better the visibility from the starting point to that point on the line. A solid dark blue colour in the line indicates dead ground or blocked vision. The red line and white shading illustrates the contour height profile or cross section of the line. See [Night, Weather and Visibility](#).

### Area LOS Tool

To show what locations are visible from a selected location:

- Select the LOS Area button from the Tools Dialog or press the K key 
- Select the desired location.



Again, the lighter the colour the better the visibility. Locations with no shading within the tool range limit are not visible at all. In the above example the start location (indicated by green dot) is on the reverse slope of the hill to its south east. Hence it cannot see past the ridge of the hill to the low ground on the other side. There is dead ground to the north west where the river cuts through the valley floor. But the rising slope on the northern side is visible up to the edge of the village at the top of the hill.

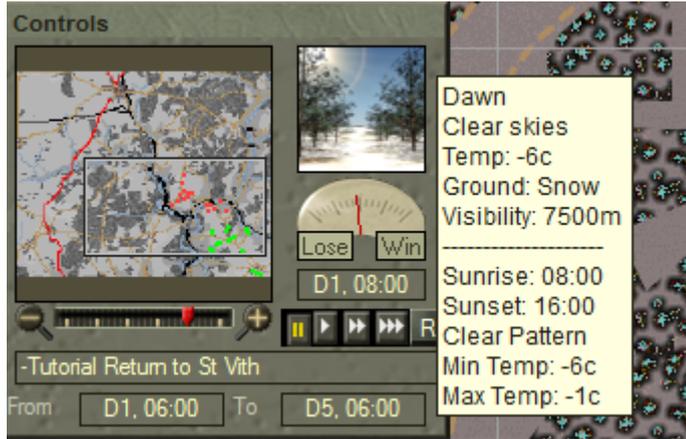
Note that with most covered terrain (woods, urban) you can generally see into the outer edge but not through it. Note also that on this map dark contour shading indicated low ground and lighter shading indicated high ground. This may be reversed on other maps. Use the terrain popup to check the altitude indicated by the "Z" value.

## Check the Weather

The current weather is displayed at the top right of the Controls dialog. To see additional information:

- ☞ Hold the mouse pointer over the weather display

After a short delay a Tooltip appears. The visibility range shown is the theoretical maximum visibility in Clear terrain given the current time of day and weather – this distance will be reduced significantly in practice by map terrain, obstacles, and unit posture. For instance, an infantry unit deployed in woods may only be visible if the observer is within several hundred metres. Extreme temperatures will reduce your troops ability to recover fatigue, especially if they are not in urban terrain.



## Identify Impassable Terrain

Not all areas on the map can be travelled by your units. Motorised units, in particular, are restricted in the areas they can reach – see [Mixed-Mode Movement](#). As in real life, there is often no sure way to know whether your units will be able to cross a particular obstacle other than trying it out; but there are some rules of thumb that can help:

- ⊕ Areas marked as Impassable will be off-limits to all units
- ⊕ Major Rivers, Seas and Lakes will block the movement of all units
- ⊕ Minor Rivers and Marshes will block the movement of motorised units
- ⊕ Slopes over 30° will block the movement of motorised units, unless there is a road present
- ⊕ Slopes over 60° will block the movement of all units, unless there is a road present

To identify those areas of the map that are passable to motorised units:

- ☞ Select the Motorise Movement Overlay from the Overlays button on the toolbar.

Note the dark blue shading indicates best movement, light blue is good, light green is OK and dark green is poor. Unshaded areas are impassable. In this example the impassable areas are woods or rivers, except where there is a road crossing.

Note also that the overlays only work while the game is paused.

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To identify those areas of the map that are passable to foot units:

- ☞ Select the Foot Movement Overlay from the Overlays button on the toolbar.

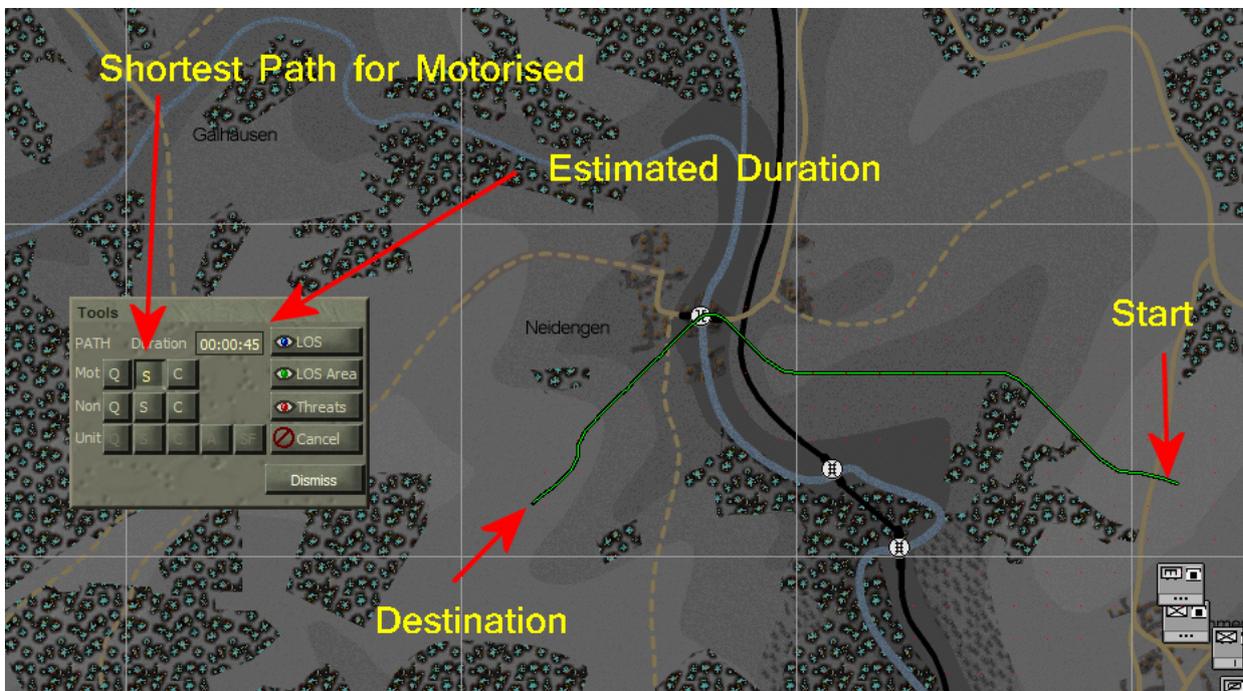
To check for certain whether a particular unit or force can reach a point on the map:

- ☞ Issue an order (see [Issue Orders](#)) to your unit(s); if the force cannot reach that point, the order location will snap to the nearest reachable point and you will receive a warning beep.
- ☞ Use one of the path tools – see [Determine Best Path](#)

## Determine Best Path

To determine the best path to use from point A to point B:

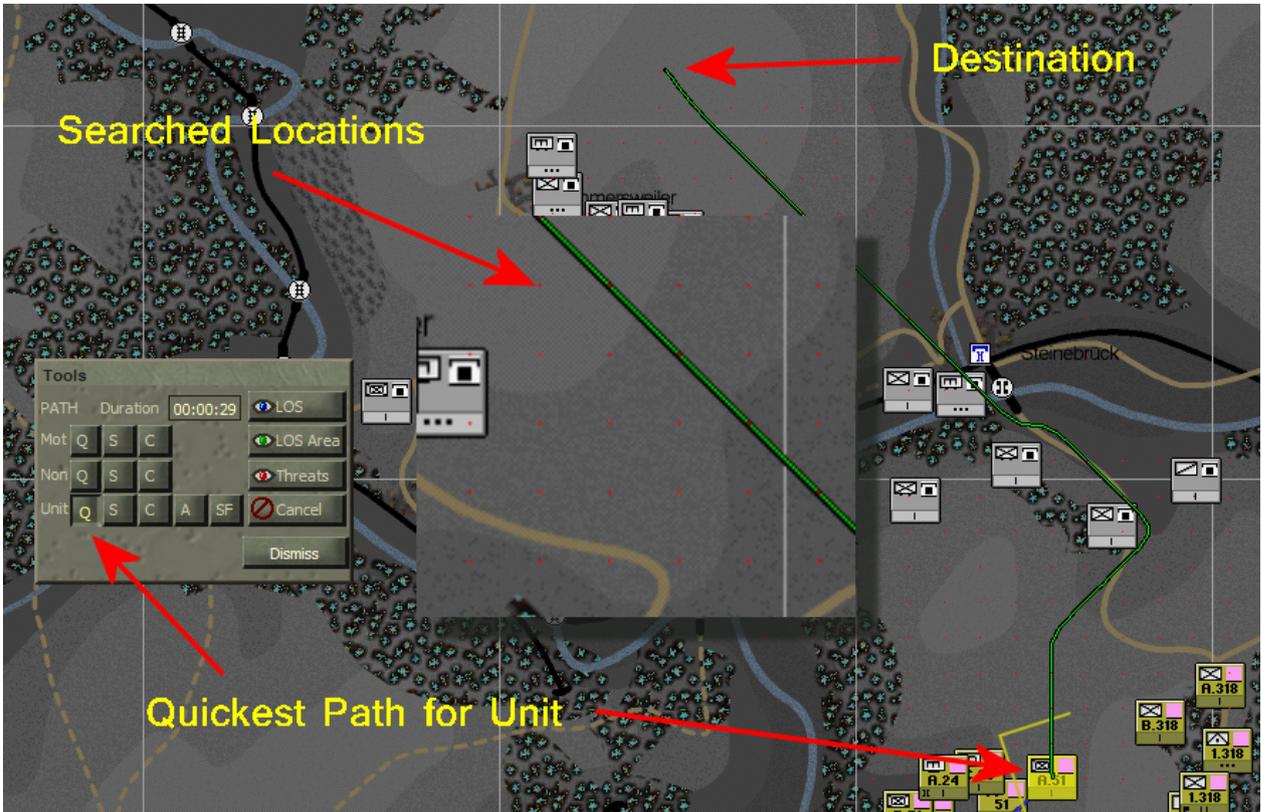
- ☞ Select the desired path tool from the Tools Dialog ( the top row marked “Mot” for motorised or the middle row marked “Non” for non-motorised or foot ). Choose Q for quickest, S for shortest or C for covered ( ie will use woods, orchards and urban terrain ).
- ☞ Click on the desired start location
- ☞ Click again on the desired destination



If a path can be drawn, then a green route will be drawn between the two locations. The red dots that appear on the map indicate each movement grid that was checked by the pathing code. The more areas checked the longer it takes. Sometimes there can be a noticeable pause before the route is drawn.

If a path cannot be drawn you will here a “beep” sound. indicating that the two locations are unreachable, usually because one or both are in terrain that is not passable or because the two locations are on separate areas of the map separated by impassable terrain such as rivers with no bridges.

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To determine the path to use from the currently selected unit to point B:

- ☞ Select the desired unit
- ☞ Select the desired path tool from the bottom row of the Tools Dialog – the one marked “Unit”. Choose A to avoid enemy firepower or SF for the “safest” - ie avoid enemy firepower and stick to cover where possible.
- ☞ Click again on the desired destination

Note that where a force consists of both motorised and foot units, the force will use a motorised route but move at foot speed. Therefore if you want such a force to defend in or move through a woods or Minor River it is best to detach your motorised elements before issuing a defend order to the main force.

“Duration” provides an estimate of the time it will take for the selected type of unit to complete the path that is drawn, assuming no threats are encountered!

## Use the Toolbar

The Toolbar is located at the bottom of the screen. It has a series of buttons that allow you to show, hide and filter information on unit icons and the Battlemat in general. It also has buttons to open and hide the various dialogs and buttons to access the Game Menu, Surrender and Minimise functions.

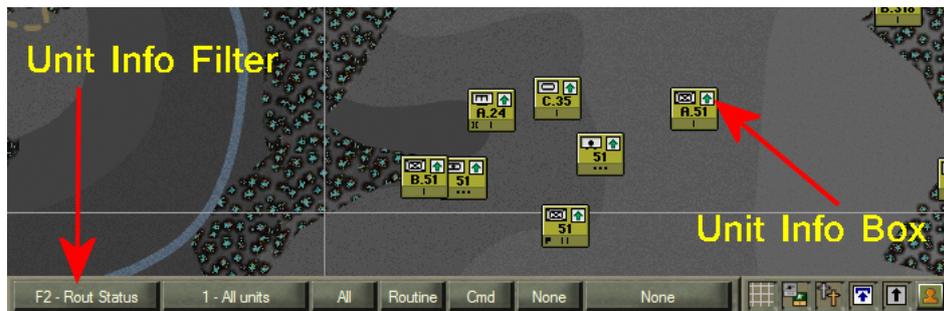
### Unit Info Filter

At the top right of each unit icon is the Unit Info Box. This can display a range of information depending on which filter is selected. Each filter uses one of the Function keys as a shortcut. Some share the same F Key, such that hitting the key multiple times cycles through the filters assigned to that F Key.

- F1. Task
- F2. Rout Status
- F3. Strength
- F4. Combat Power
- F5. Deployment, Facing ( Unit Deployment )
- F6. Morale, Cohesion, Fatigue ( Unit Effectiveness )
- F7. Ammo, Arty Ammo, Basic Supply, Fuel, Supply Line ( Unit Supply )

To change the filter:

- ☞ Click on the Unit Info Filter button until the desired filter is selected or
- ☞ Hit the corresponding F Key



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### Unit Filter

The Unit Filter button allows you to filter the display of unit icons by their type or status. Like the Unit Info Filter, each has a corresponding keyboard shortcut – roughly corresponding to the “number keys” – and some share the same key.

1. All units
2. HQ units
3. Line units
4. Support Units, Bases
5. Armour units
6. Mech Inf units
7. Soft units
8. Gun units, Guns that can bombard
9. Engineer units
0. Bridge units
- . Units with no orders
- = Units with orders
- \. Recent log entries

To change the filter:

- ☞ Click on the Unit Filter button until the desired filter is selected or
- ☞ Hit the corresponding Key



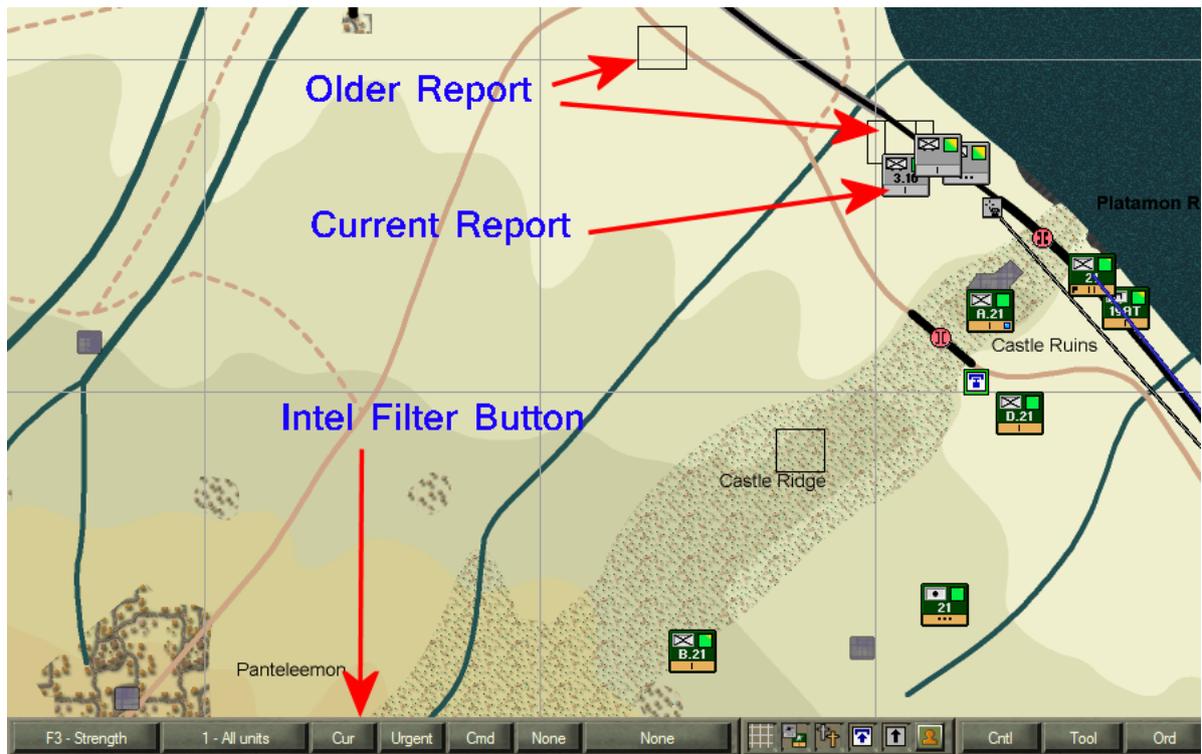
### Intel Filter

Use the Intel filter to filter the enemy intel reports ( enemy unit icons ) based on the age of the report – ie None, Current ( last 5 minutes ), Recent ( last hour ) or All.

To change the filter:

- ☞ Click on the Intel Filter button until the desired filter is selected or

Hit the I key  until the desired filter is selected



## Message Filter

Use the Battlemap Message Filters to filter those messages displayed on the Battlemap and the Message Log Filters to filter those messages displayed on the Message Log dialog by their priority – ie None, Routine ( all ), Urgent ( Urgent + Flash ), Flash ( only Flash ).

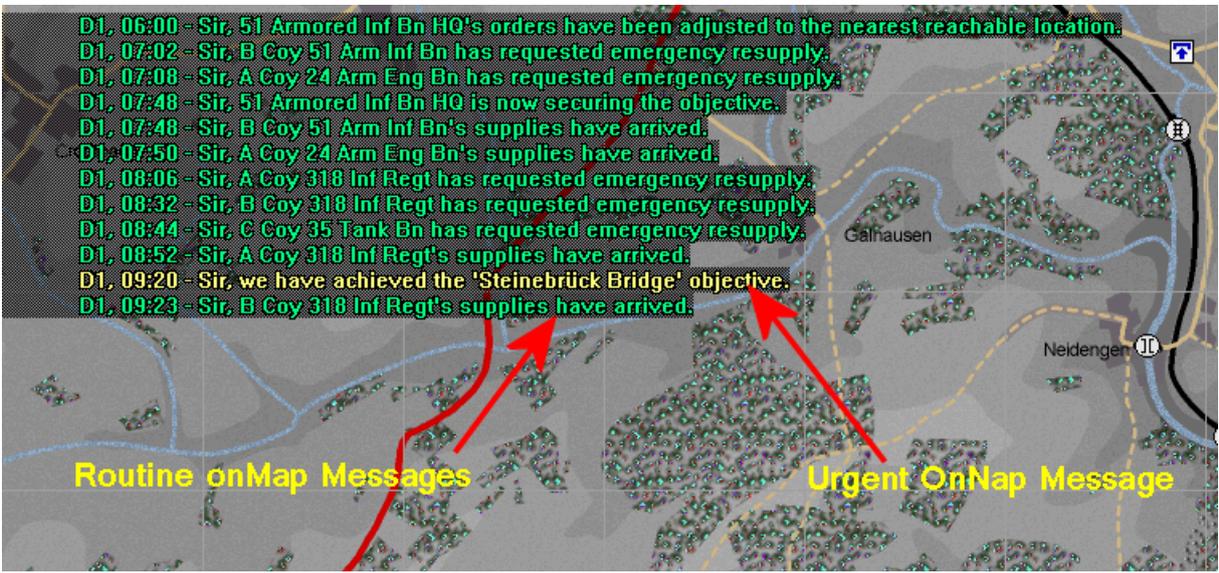
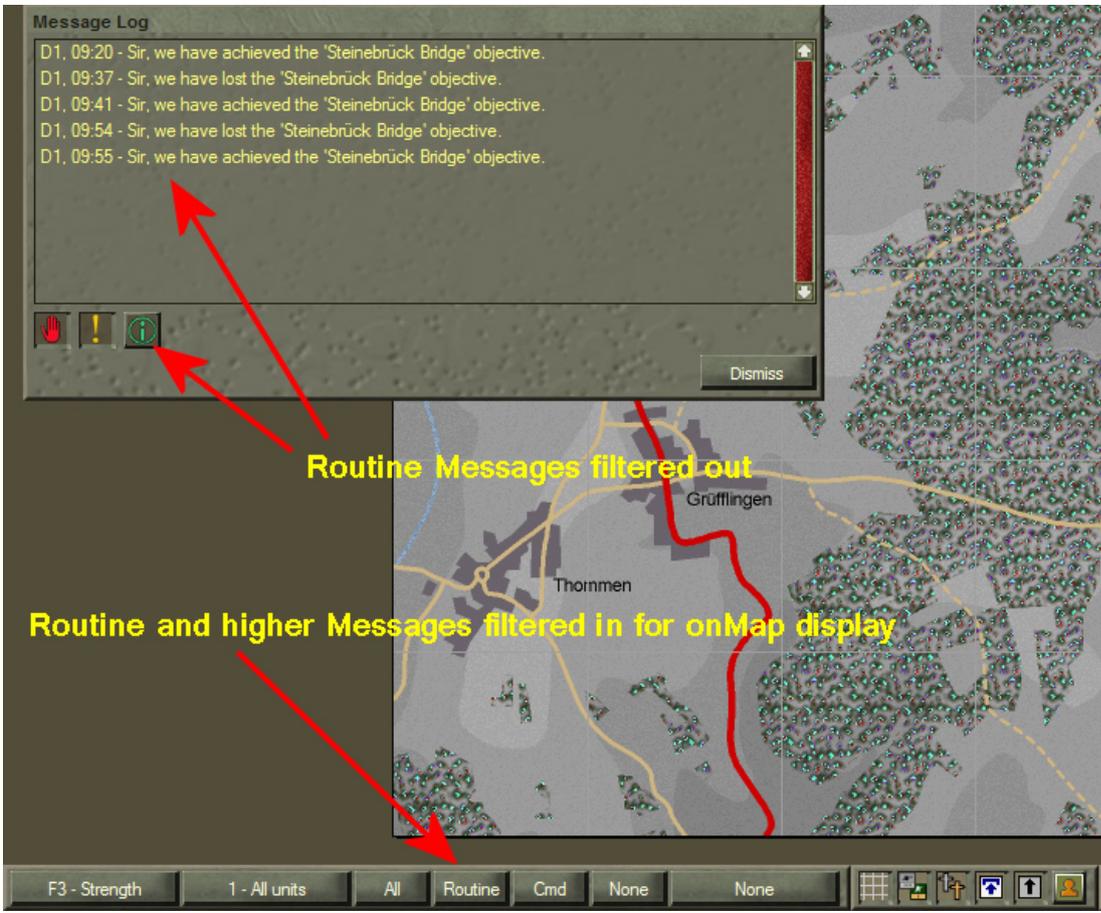
To change the filter:

Click on the Message Filter button in the Toolbar until the desired filter is selected

In the examples below, the green Routine messages are displayed in the on-map messages but filtered out from the Message Log dialog.

Note that the onMap messages are not displayed if the Message Log dialog is open.

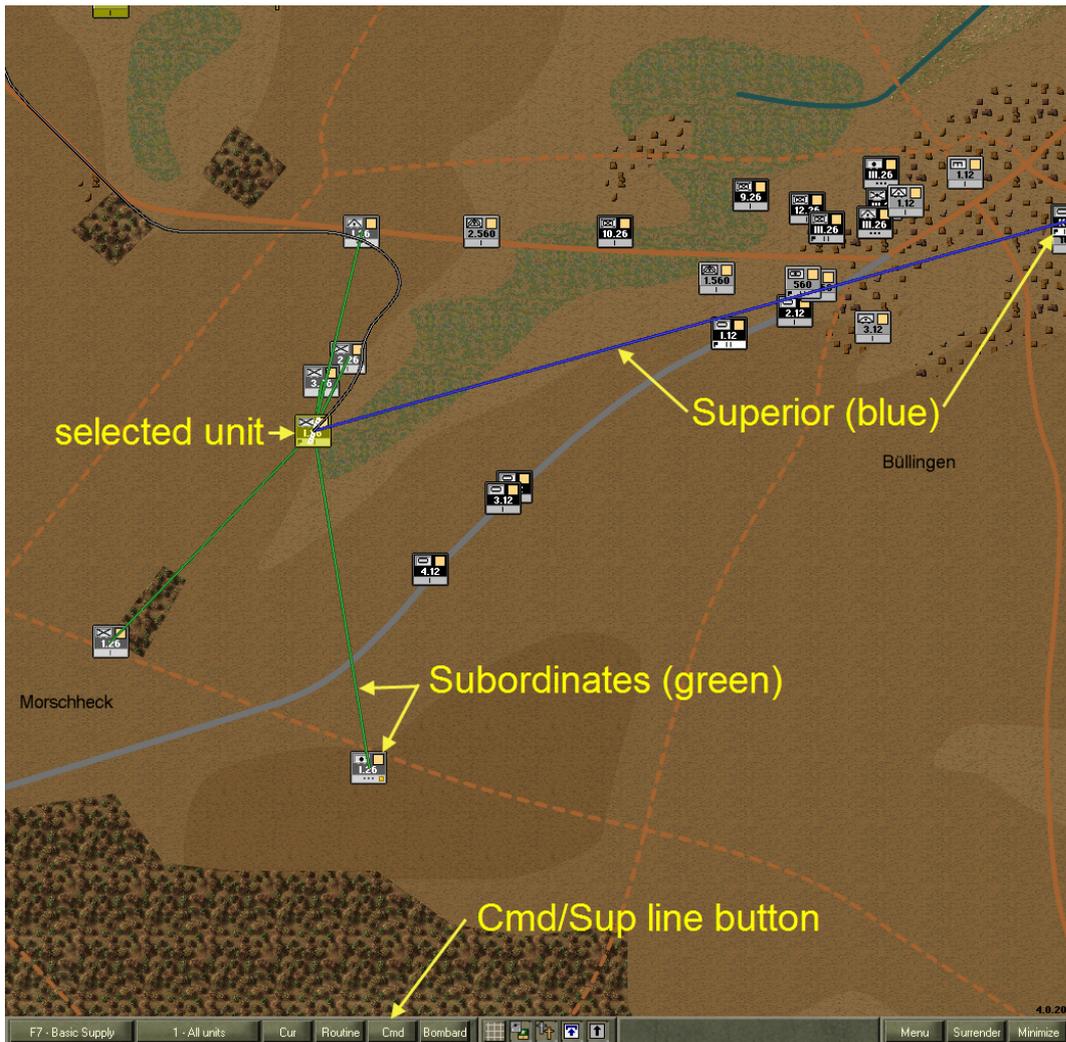
# COMMAND OPS 2



## Command and Supply Lines

Command Lines indicate the relationship between the selected unit and its superior and subordinate units. Depending on the current OB Display **Force Structure**, these will be drawn to either the Organic, Player, or Formation units. To display Command Lines:

- ☞ Click on the Cmd/Sup Lines button on the Toolbar till it shows Cmd
- ☞ Select one unit



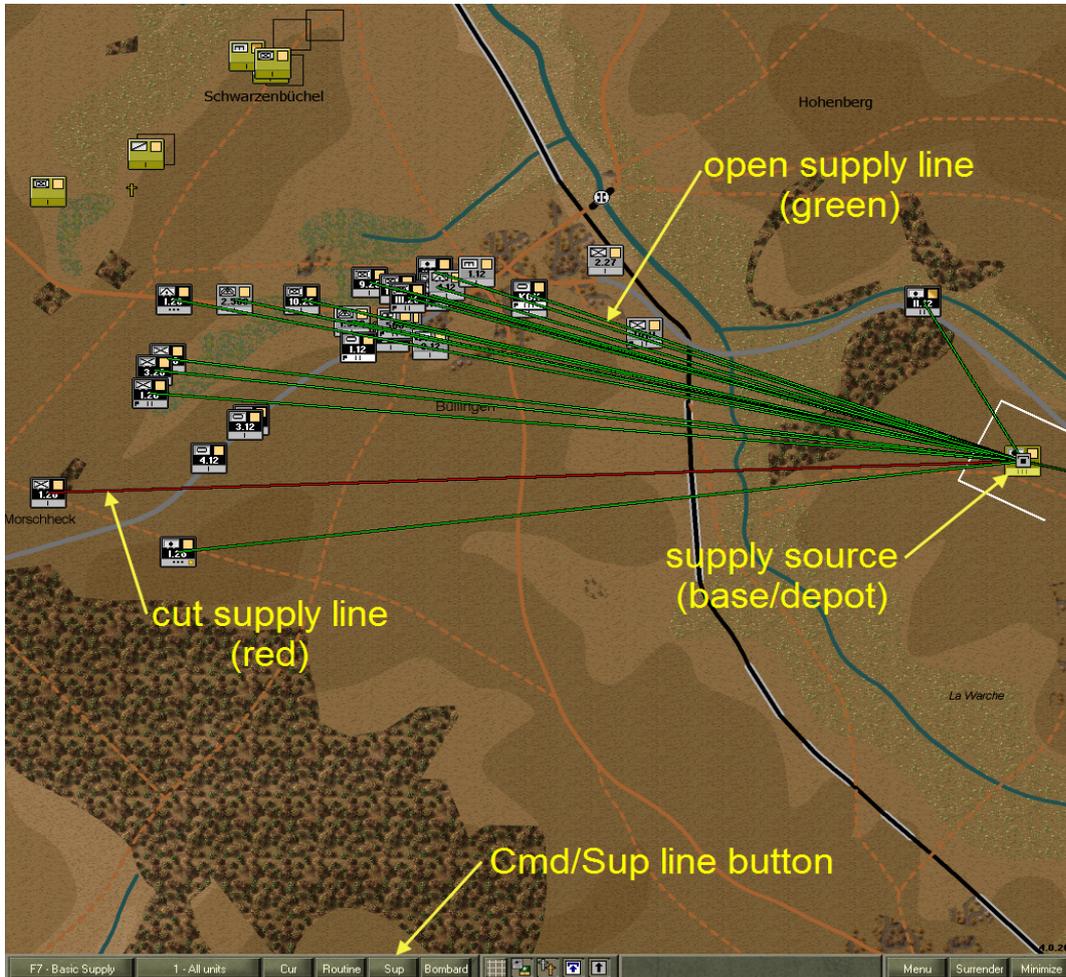
Command lines are only displayed for a single selected unit. They will not be displayed when more than one unit is selected.

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Supply lines indicate the last determined status of the supply line between the selected unit back up to its supply source ( Base or Supply Entry Point ) and, in the case of Bases, down to it's drawing units.

☞ Click on the Cmd/Sup Lines button on the Display Toolbar till it shows Sup

☞ Select a unit



Note that in this example we have selected the Rgt Base. It's supply source is the Div Base. Similar to Command Lines, supply lines are only displayed for a single selected unit. They will not be displayed when more than one unit is selected.

Also note that the status is not necessarily current. It is based on the time the supply line was last determined for the units. This may be several hours old and the situation may now be different – eg. it may show as open but now it is obvious they are cut off. ( The reason why current data is not displayed here, is that the processor load to determine the different supply routes would slow the game down inordinately. )

## Range Rings

Range rings are displayed to indicate various ranges of your units pertinent to gameplay. The two *direct* firepower types – anti-personnel (APer) (green rings), anti-armour (AArm) (red rings) each show 3 different color shades corresponding to 3 different ranges; maximum (light), effective (darker), and ambush (darkest). Effective range is the range at which 33% of the maxFP can be achieved. Ambush range is the range at which 67% of the maxFP can be achieved.

For *indirect* fire bombardment (Bombard) there is both a min (black ring) and a max (blue ring) range ring. The min ring delineates the area the unit cannot bombard into.

To display these:

- ☞ Click on the Range Ring button on the Toolbar till the desired setting is shown
- ☞ Select one or more units



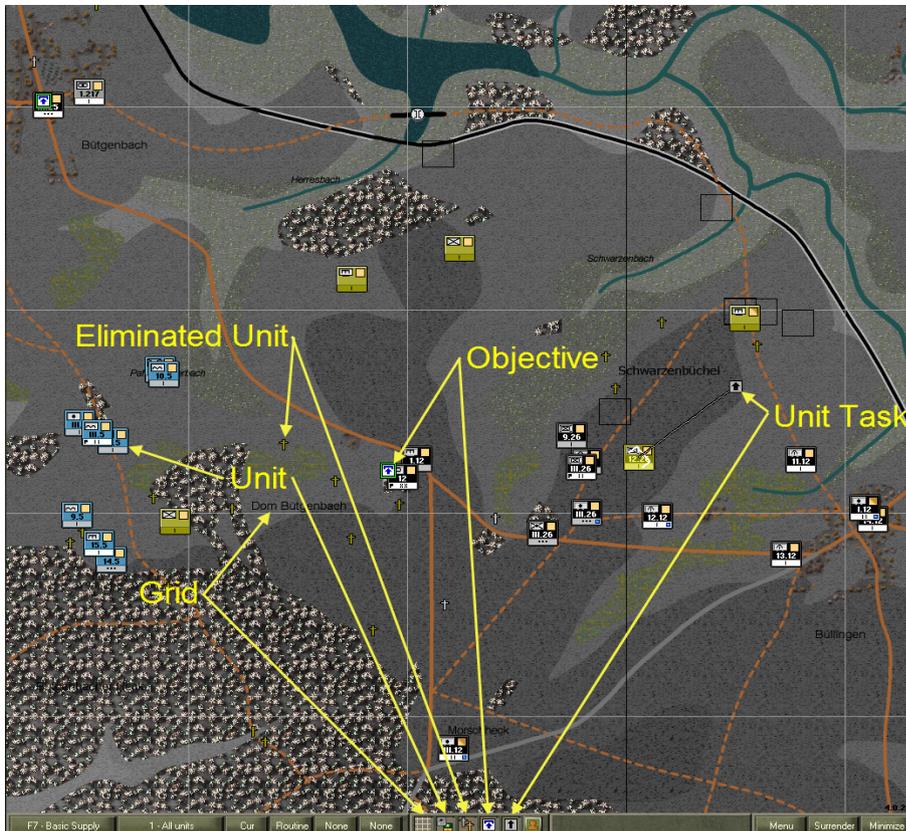
## COMMAND OPS 2

### Miscellaneous Buttons

There are five smaller buttons that show/hide the 1km Map Grid ( dark lines every 10km ); friendly unit icons, eliminated unit icons ( crosses colour coded to match the respective command colours ), objective icons ( these are your orders and correspond to the items in the Obj dialog ) and unit task icons ( these are the actual tasks your units perform ).

To show or hide these:

- ☞ Select the associated button on the Display Toolbar or
- ☞ Press the G key  to toggle display of the 1 km grid
- ☞ Press the U key  to toggle display of units and eliminated units
- ☞ Press the J key  to toggle display of objectives



### Menu

To gain access to the Game Menu:

- ☞ Click on the Menu button in the Display Toolbar

To go back to the game – ie do nothing:

- ☞ Click on the Return to Game button

To go to the Options Screen:

- ☞ Click on the Options button

To go to the Startup Screen:

- ☞ Click on the Leave Game button

To load a previously saved game:

- ☞ Click on the Load Game button

This will open the Load Game dialog – for details see [Load a Single-Player Game](#).

To save the current game:

- ☞ Click on the Save Game button

This will open the Save Game As dialog – for details see [Save a Game](#).

To exit the game application and go back to the Windows desktop:

- ☞ Click on the Quit Command Ops button



### Surrender/AAR

The text on the Surrender button normally displays the word “Surrender”, which means offer your surrender to your opponent. If your opponent offers to surrender to you the text will change to “Accept Surrender”. For details see [Offer or Accept Surrender](#).

The text also changes at the end of the game to “AAR”. When the scenario ends the After Action Report ( AAR ) screen is displayed. You have the option to close this and review the Battlemap. To then gain access to the AAR screen:

- ☞ Click on the AAR button

### Minimise

The Minimise button is used to minimise the application. For details see [Minimise](#).

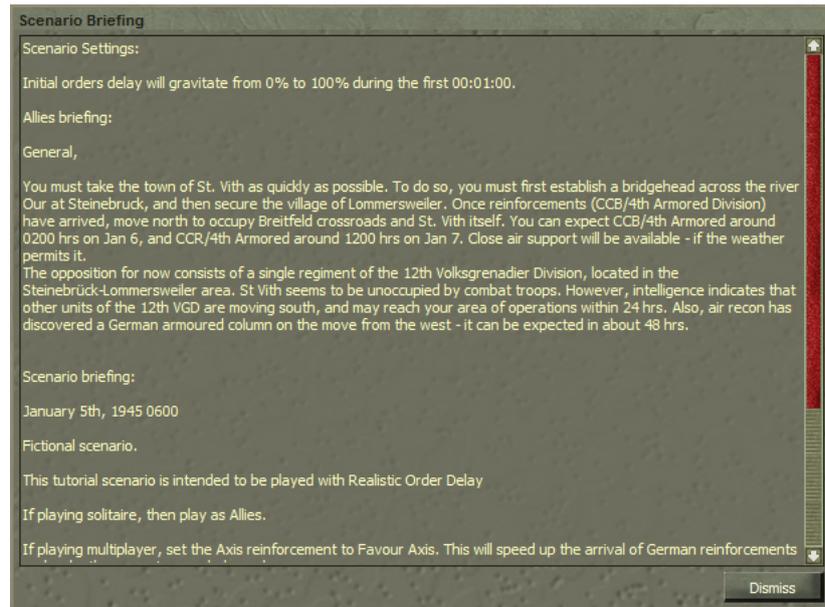
## Work Out What You Have to Do to Win

### Review Your Briefings

To review the briefing(s) for your scenario:

- ☞ Select the Brf button on the toolbar.

This will open the Scenario Briefing dialog. The briefing will always show the initial orders delay setting (see [Orders Delay](#)) for your side in the current scenario at the top of the scrolling text box. If the scenario designer has included a separate side briefing, this will be displayed below the initial orders delay and the main scenario briefing will be shown at the bottom.



### Display the Objective List

Your current objectives are displayed on the map using a square task icon, coloured blue on white. Inactive objectives (those finished or yet to start) are not shown on the map.

To see a list of your objectives:

- ☞ Select the Obj button from the Toolbar

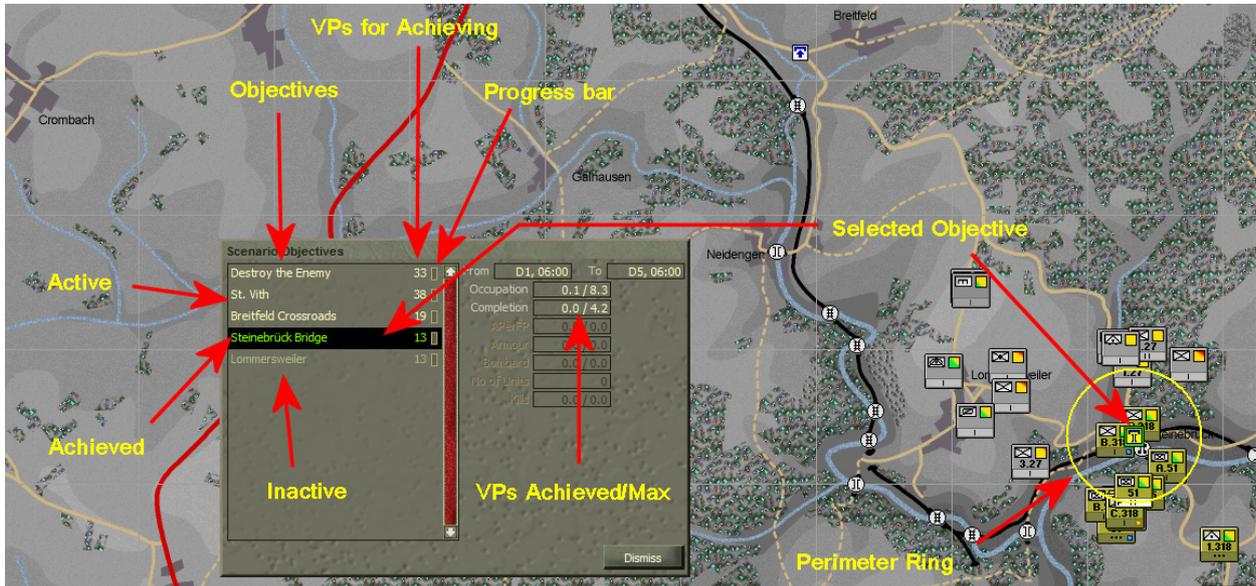
This opens the Objectives dialog. All your objectives are listed. The ones you already control are highlighted bright green. Inactive objectives (those that have finished or have yet to start) are dimmed out.

To see the details of a specific objective:

- ☞ Select the objective from the objective list, or
- ☞ Select the objective icon in the Battlemap

The objective icon on the map will be selected and coloured blue on yellow, and a yellow task perimeter ring indicates the area to be secured (see [Objectives](#)).

Note that the numbers to the right of each objective in the list are the Victory Points ( VPs ) awarded if you achieve the objective. Depending on the type of objective, these can be for occupying the objective through the



time indicated, securing it at the specified completion time, exiting units whose anti-personnel, anti-armour and bombardment firepower amounts to the values specified or destroying the specified percentage of the enemy's forces. The small bar icon to the right of the values fills up as you achieve VPs for the objective. In some cases objectives are linked, meaning that you only need achieve one of these to gain the VPs. An "AE" next to an objective description indicates that the game will end once this objective is completed.

## Find Objectives on the Map

To locate an objective on the map:

- ☞ Open the Objectives dialog
- ☞ Double-click on the name of the objective you want to locate.

The objective will be selected and if not already in view then the Battlemat will be centred on that objective.

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## Work with Units

Most of your activities in CO2 will involve working with your units.

### Select Units

When you select a unit, the unit icon will be highlighted and a white perimeter box will display the 'footprint' or approximate area occupied by that unit on the map ( see [Footprint and Facing](#) ). If the unit has any orders or tasks ( see [Command Your Units](#) ), these will also be drawn on the map.

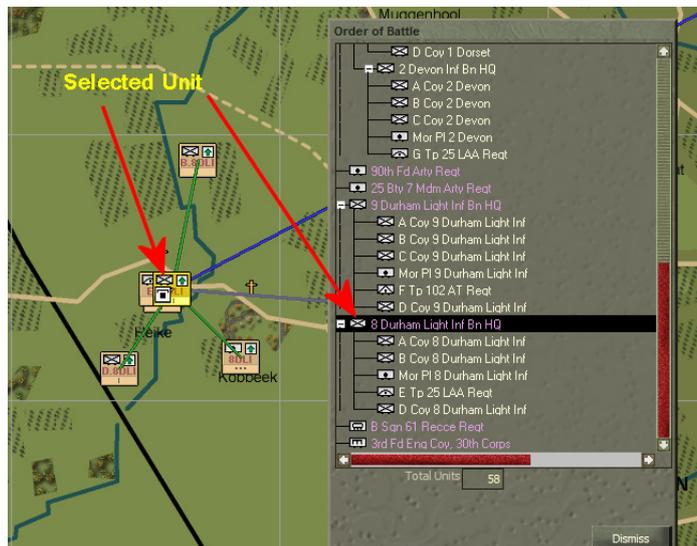
- ⊕ Drawing lots of orders and perimeter boxes can slow the game down, so try to avoid running it for long periods with many units selected

### Select Units with the Mouse

The main way to select units is by using the mouse. To select a single unit:

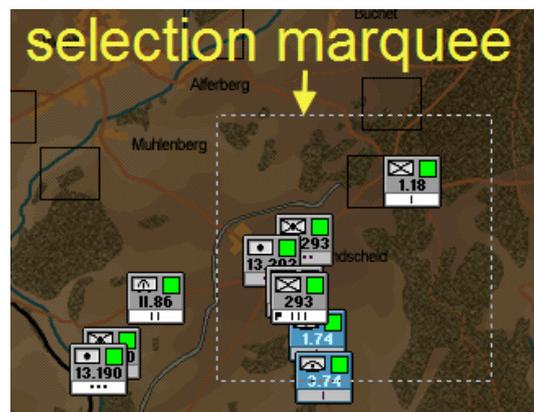
- ☞ Click on the unit icon on the Battlemap or
- ☞ Select the unit from the Order of Battle dialog ( OB ) – this will also select the unit on the Battlemap

Note that selecting a unit automatically highlights its subordinates.



To select a group of units:

- ☞ left-click and drag on the Battlemap – all units inside the marquee will be selected



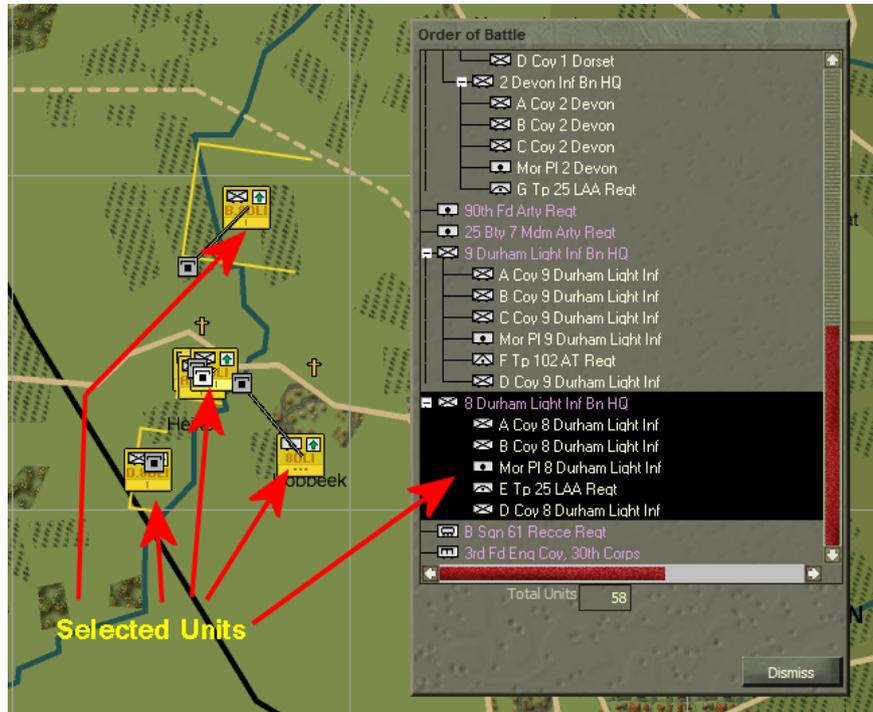
To add or subtract a unit from the current selection:

☞ hold the **Ctrl** key  and click on the unit icon on the Battlemap to select or deselect it

When several units overlap, units being drawn in front will obscure units being drawn behind. To select an obscured unit:

☞ Click repeatedly anywhere within the area occupied by the icon of the unit you want to select

As you click, you will progressively select each unit under the cursor – eventually you’ll end up with the unit you want!



⊕ Headquarters units are generally displayed on top of other units where there is an overlap

### Navigate Using the Chain of Command

Military units are organised into structures where you have superiors and subordinates. These are linked by what is known as the Chain of Command. A single unit, such as a battalion headquarters ( HQ ) will have several subordinate companies. It in turn will be subordinated to a brigade or regiment HQ, which in turn will belong to a division HQ.

Use the **Arrow cursor keys** to move from one unit to another through the command structure. The command structure used is the one you, the player, have set up. By default this will be the organic structure, modified by any attachments or detachments caused by orders you have given ( see [Group and Ungroup Units](#) and [Military Structure](#) for details on attaching and detaching ).

Please note that this may differ from the actual structure being used by the units because of two reasons - orders delay and force allocation. Firstly, when playing with orders delay it will take some time before units receive your new orders. During that time they will continue to use their existing structure and this may be at variance with what your orders say.

Secondly, once your units receive their orders they will develop their own plan to implement them. This will involve allocating forces to the various tasks that make up their plan. This may involve attaching units such that

## COMMAND OPS 2

the structure being used varies from that you ordered.

Eg. You order the 7th Armored CCB HQ to Move. The Force Group used for your order is the organic structure which includes one AT Bty directly subordinated to the 7th Armored CCA HQ. However, in developing the plan the HQ assigns the AT Bty to the Advance Guard where it is subordinated to the 31st Tank Battalion (31TB). Now when you navigate down through the CCB's structure you will still see the AT Bty directly subordinate to the CCB HQ ( because it is using the Order structure not the Plan structure ). Similarly if you select 31TB and navigate down you will not see the AT Bty.

The arrow cursor keys will only navigate you through units currently displayed on the map – so if you have a filter active ( see [Unit Filter](#) ), the cursor keys will only move between those units displayed.

To select the most senior unit currently on the map ( **on-map boss** ):

☞ Click on an empty area of the map to deselect all units, then press the up arrow key 

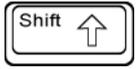
With a single unit selected, you can navigate around the chain of command using the cursor keys:

☞ Select the up arrow key  to select the unit's superior, or

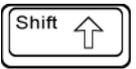
☞ Select the down arrow key  to select the unit's first subordinate, or

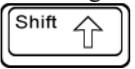
☞ Select the right arrow key  to select the next subordinate, or

☞ Select the left arrow key  to select the previous subordinate

When navigating around the chain of command, you can hold down the Shift key  while using the cursor keys to add units to the selection. For example, to select every unit in a battalion:

☞ Select the Battalion HQ unit

☞ Press Shift + down arrow keys  +  to add all immediate subordinates to the selection

To do the same thing for a higher-level force (like a Brigade or Division), you may need to press Shift + down arrow keys  +  several times to select all subordinates. See [Tutorial I](#) for a practical example of this process.

### Select Units With or Without Orders

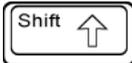
To navigate through units under your direct command **who have current orders**:

- ☞ Press the Tab key , or
- ☞ Press the left arrow key  or the right arrow key 

To add units under your command **who have current orders** to the selection:

- ☞ Hold down the Shift key  while pressing the left arrow  or right arrow  cursor order

To navigate through units under your direct command **who have no orders**:

- ☞ Press the Shift + Tab keys  + 

You will cycle through your waiting subordinates in descending order of unit size and commander seniority.

### Identify Your Reinforcements

During some scenarios, additional units may arrive to supplement your force. You can see details of these in the **Reinforcement dialog**:

- ☞ Open the Reinforcement (Rnf) dialog

Reinforcements arrive as groups of different numbers of units. The most senior unit in each group is displayed in the **Reinforcement List**, along with the earliest and latest possible arrival times of the group, the number of units in the group, and their method of arrival.

To get more information about a group:

- ☞ Click on the group in the Reinforcement List

Summary data for that group will be displayed to the right of the Reinforcement List, including the total number of Personnel, AFVs (armoured fighting vehicles such as tanks and armoured cars),



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Non-AFVs (ie trucks and cars), Guns, Bridges, total Anti-Personnel, Anti-Armour and Bombardment Firepower values (APerFP, AArmFP and BombFP respectively), and the total Armour value. See [Combat Effectiveness](#) for more information about these values.

You can also use the Reinforcement List to locate the arrival point of your reinforcement groups. To do so:

- ☞ Double-click on the group in the Reinforcement List

The senior unit in the group will be drawn and highlighted on the Battlemap and if it's not currently in view, then the Battlemap will scroll to centre on the unit. To remove the unit icon:

- ☞ Click on an empty area of the map or select another unit

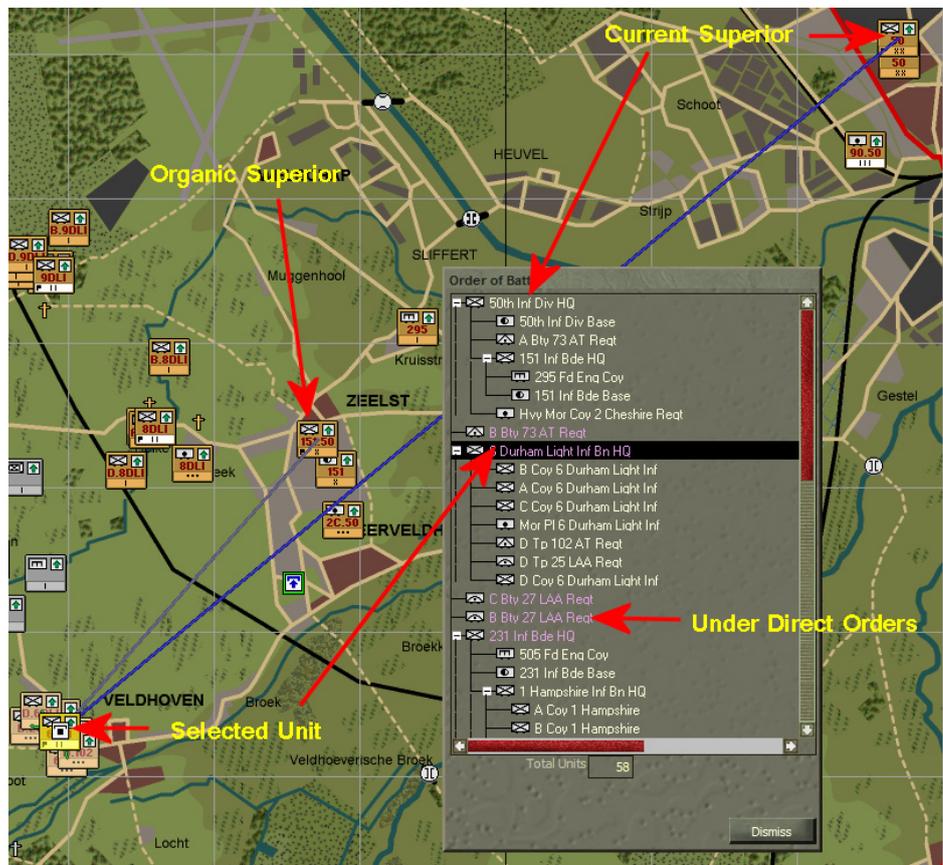
### Use the Order of Battle (OB) Display

To view the OB Display:

- ☞ Open the OB dialog

The OB Display will be shown. The text colour indicates the status of the units on the Display; on-map units are white, reinforcements are grey and dead units are red. Note also the highlight colour of static units ( orange ) and those you have given a direct order to ( magenta ).

Your units will be shown in a tree list rather like the one in Windows Explorer®, and you can collapse and expand branches to display units at different levels. Branches are indicated by a **+** or **-** symbol next to the unit commanding that branch.



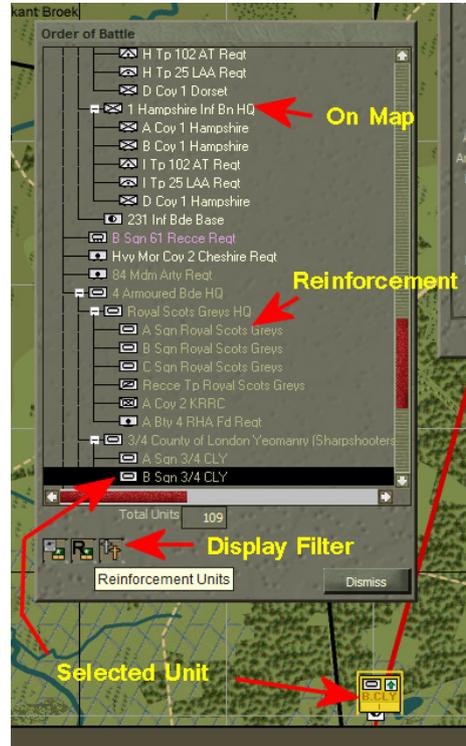
You can select units from the OB Display:

- ☞ Click anywhere on the line for that unit

When you select a unit, its line will be highlighted black. The unit will also be selected on the Battlemap and any current subordinates will be highlighted. You can issue orders to a unit when it is selected – see [Command Your Units](#).

To show the [Force Data Display](#) for the selected unit:

- ☞ Double-click the unit's line on the OB Display.
- ⊕ Units are always shown using military symbols on the OB Display, even if they use picture symbols on the Battlemap



## Force Structures



There are 3 types of Force Structures that can be displayed while playing the game. The current Force Structure type will effect the OB Display and the way Command Lines are drawn to/from subordinates ( see [Command and Supply Lines](#). ) Use the Force Structure Type button on the Display Toolbar to set the type to either Organic, Player or Current. Click the button to toggle it through the three types.

The **Organic Structure** represents your OB structure at the start of the scenario and never changes due to detaching or attaching subordinates. Note that when you select **Organic Structure**, 3 additional buttons appear to the right of the OB display. These buttons allow you to toggle on (down) or off (up) the display of on-map units, scheduled reinforcements, and/or dead units within the **Organic Structure**.

The **Player Structure** is the default display and represents your current on-board force structure including any cross-attachments or detachments made during the course of issuing orders. It may be best to leave the **Player Structure** set as current so that Command Lines will represent your Force Group's attached subordinates correctly.

The **Op Plan Structure** represents the structure of the selected unit within it's Force Group's formation. A Force Group can be a single unit without orders or a Division attacking with several attached Regiments. As the battlefield environment changes, the **Op Plan Structure** will likely change without any input from the player, depending on the order and the formation type selected for the force.

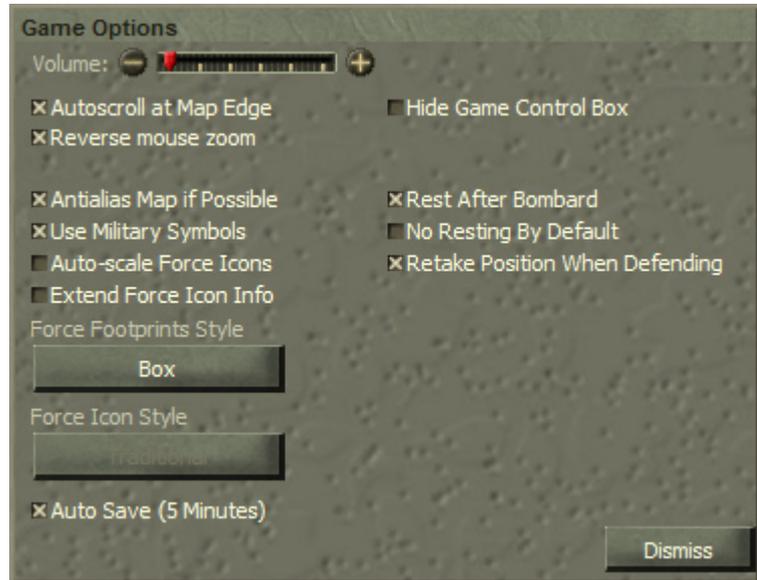
## COMMAND OPS 2

### Change Unit Symbols

CO2 can display unit types using either picture symbols or military (NATO) symbols. To switch between them:

- ☞ Open the Options window from the Game menu (Menu button on toolbar).
- ☞ Check or uncheck the Use Military Symbols checkbox

See [Annex C – Understanding Military Symbols](#) for a guide on reading and remembering the military symbols. Every unit type symbol in the game is listed in [Annex D – Unit Types and Symbols](#).



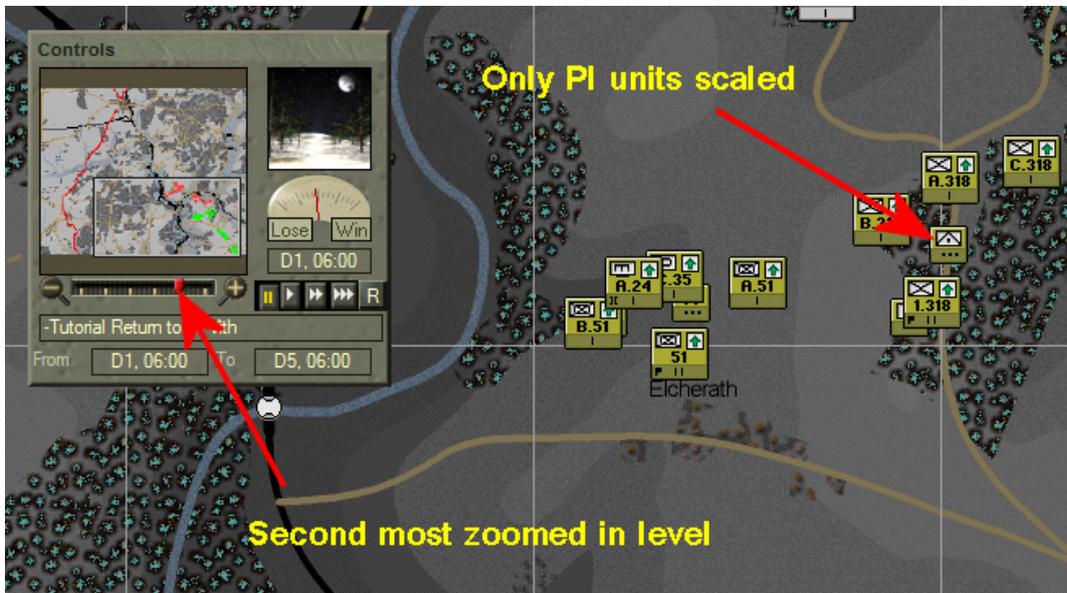
### Auto-scale Force icons

By default all unit icons are displayed at the same normal size. If you prefer to have the smaller icons for your companies and platoons then:

- ☞ Open the Options window from the Game menu (Menu button on toolbar).
- ☞ Check the Auto-scale Force Icons

Note that the scaling is affected by the current zoom level. At the most zoomed in level all units icons will be normal. At the second most zoomed in level, only platoon sized units will be scaled. But the time you are zoomed right out only senior HQ are shown on the map and these at a reduced size. The intent is to reduce clutter and allow you to focus on the icons that matter.



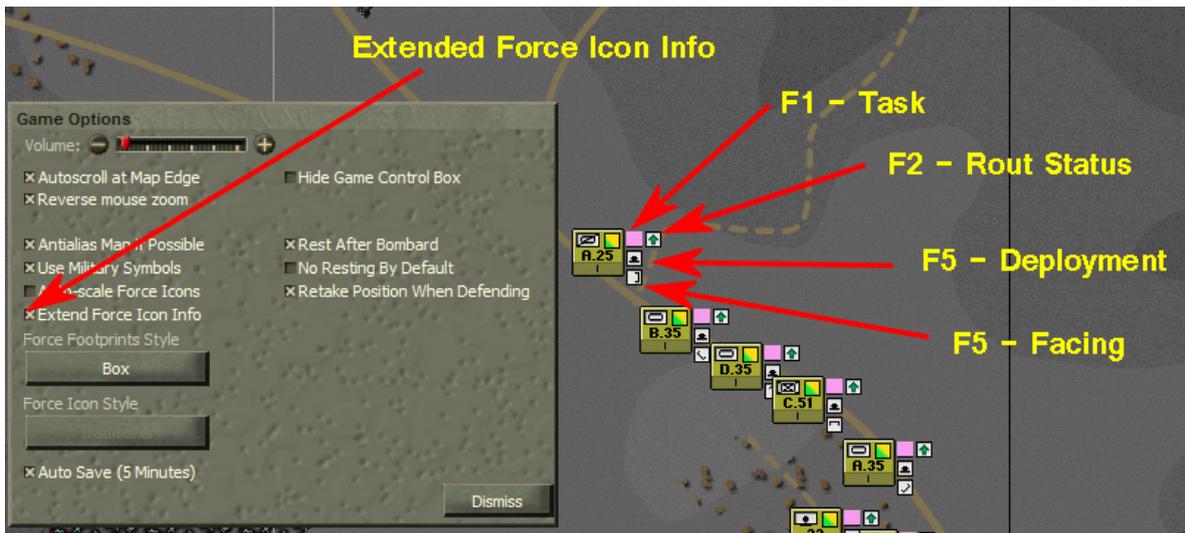


### Extended Force Icon Info

To display additional Unit Info Boxes for each unit:

- ☞ Open the Options window from the Game menu (Menu button on toolbar).
- ☞ Check the Extended Force Icon Info

Note this will display four additional unit info boxes corresponding to the F1-Task, F2-Route Status, F5-Deployment and F5-Fatigue unit info options. The type of info displayed in these additional boxes cannot be changed. The Function keys and Unit Info button on the toolbar only change the main Unit Info box on the unit icon itself.

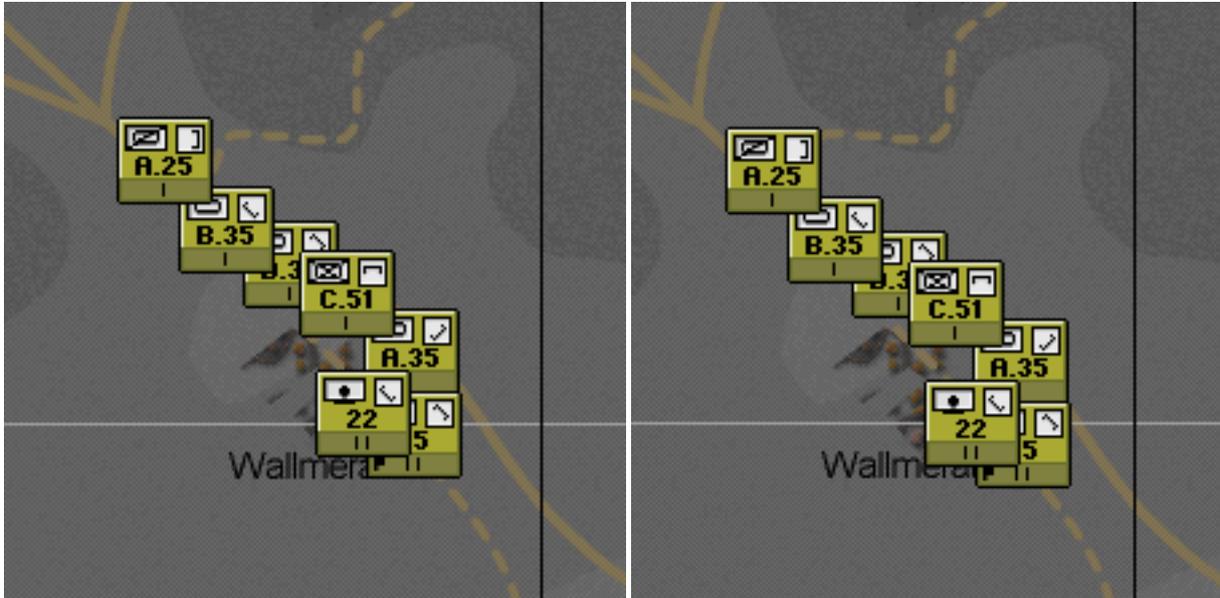


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### Offset Unit Icons

To offset the display of unit icons by a small amount down and to the right:

☞ Press the ~ key 

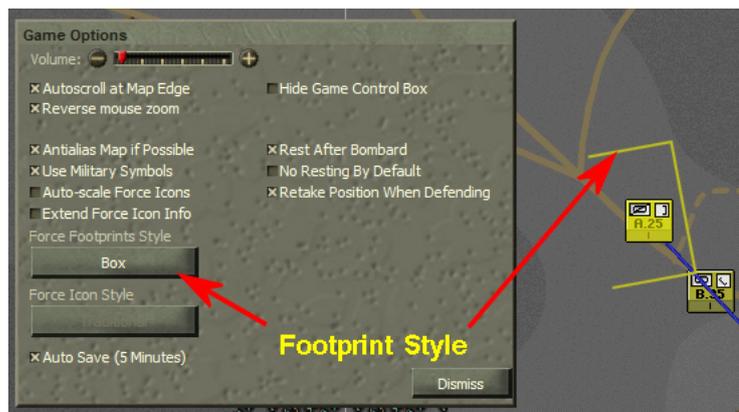


Note this works as a toggle. Hit the button again to offset back up and to the left.

### Change Force Footprint Style

To change the style of the force footprint:

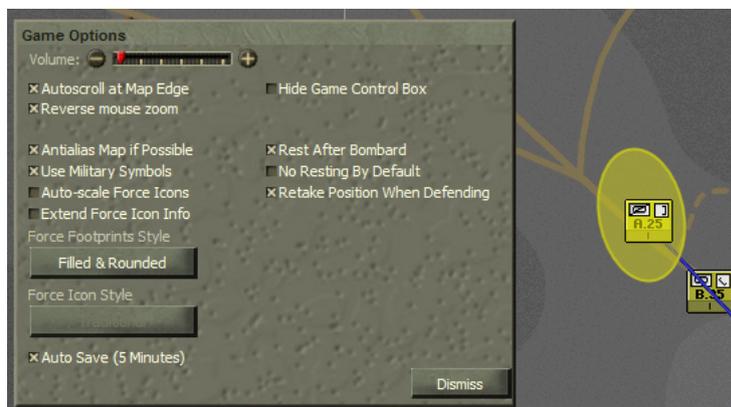
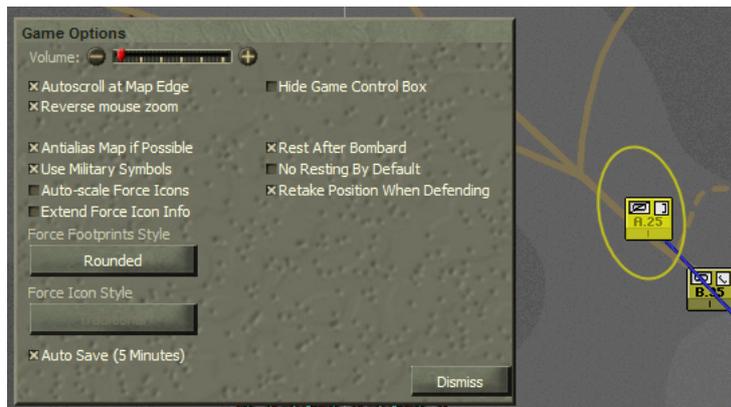
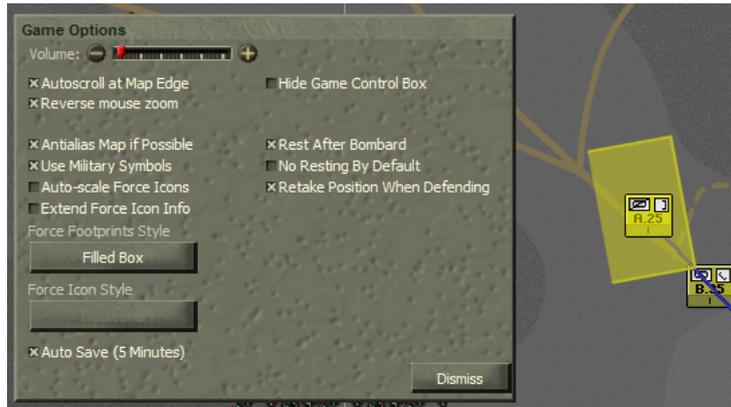
- ☞ Open the Options window from the Game menu (Menu button on toolbar).
- ☞ Click on the Force Footprint Style button



# GAME MANUAL

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Note there are four styles - box, filled box, rounded, filled rounded. Also note that these are representative and not to be taken literally in terms of where the individual units and vehicles are positioned.



## Command Your Units

You direct the actions of your units by issuing **Orders**. When issued an order your units will develop a plan and issue it to their subordinates in the form of **Tasks**. When issuing an order, you will specify the location at which you want the unit to carry out the order – this is called an **Order Location or ObjLoc**. See [Objectives, Orders, and Tasks](#) for more information.

When you issue an order to a unit, it will no longer receive tasks from its normal superior but will only respond to further orders directly from you. See [Group and Ungroup Units](#) and [Units Under Your Direct Command](#) for more information.

### Issue Orders

To issue an order to one or more of your units:

- ☞ Select the unit(s)
- ☞ Select the type of order by clicking the appropriate order button on the Orders dialog or by pressing the appropriate keyboard shortcut.



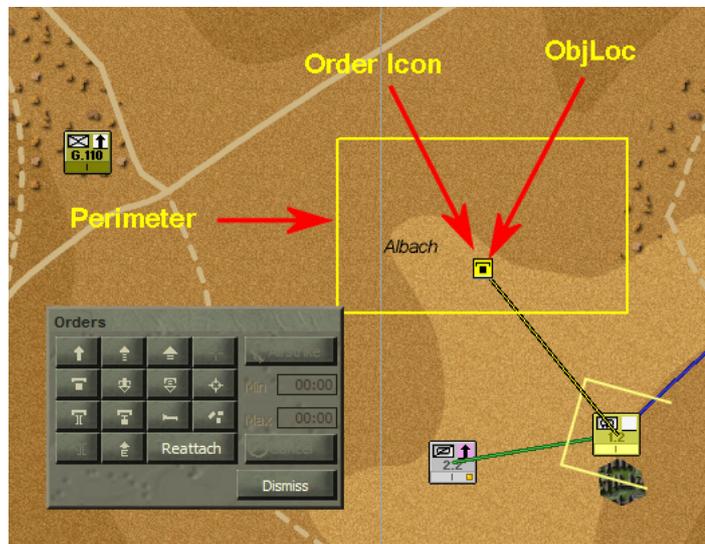
To find the keyboard shortcut for each type of order, see [Annex A – Keyboard Shortcuts](#). You can also display a Tooltip in the game that shows the keyboard shortcut for a particular order:

- ☞ Briefly hover the mouse over the order button

The mouse pointer changes to the **Order Cursor** once you move the mouse pointer over the Battlemap.

- ☞ Click on the Battlemap at the desired Order Location/ObjLoc.

A new **Order Icon** is placed on the map at the order location and a line is drawn linking the unit and the order. A yellow perimeter box is drawn around the order icon that indicates the approximate area to be occupied by the force when it deploys at the order location.

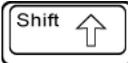
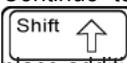
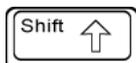


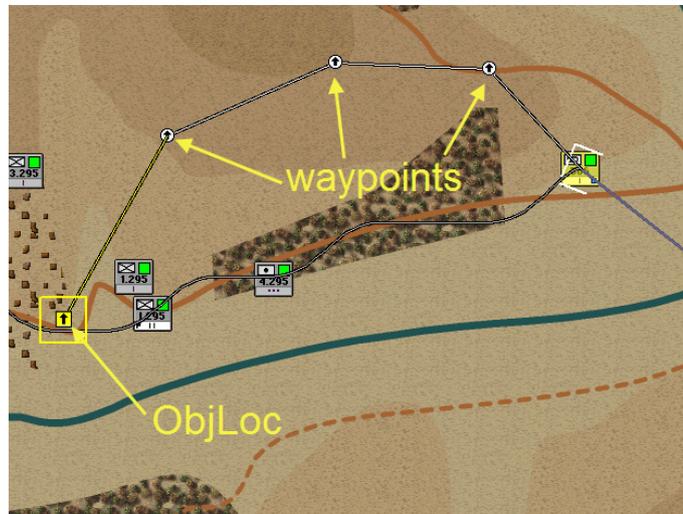
If you attempt to place an order in a location that is impassable to the unit you are ordering, the order icon will snap to the nearest reachable location. A message will appear at the top of the Battlemap to let you know what has happened.



## Issue Orders with Multiple Waypoints

You can tell your units to pass through a series of points on their way to their order location. These points and the order location are called **Waypoints**. The last waypoint is always the Order Location or ObjLoc. To issue an order using intermediate waypoints:

- ☞ Select the desired unit(s)
- ☞ Select the order type using the order button or keyboard shortcut
- ☞ Hold the Shift key  down and click on the map at the desired location of your first waypoint
- ☞ Continue to hold down the Shift key  and click on the map to place additional waypoints
- ☞ Release the Shift key  prior to placing the order location.



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As you place the waypoints, you will see **Waypoint Icons** appear on the map at each intermediate waypoint location. For the Attack, Probe, and Delay orders, waypoints have a special meaning; see [Seize an Objective](#) and [Delay the Enemy Advance](#) for details.

If you forget to release the Shift key  before placing the order location, just:

☞ Press the Esc key 

This will revert the mouse pointer to the arrow and confirm the last waypoint as the order location.

### **Decide Not to Issue an Order ( revert to the Arrow Pointer )**

If you change your mind after selecting one of the order buttons or pressing the keyboard shortcut for an order, you can cancel the order cursor and go back to the normal mouse pointer:

☞ Press the Esc key 

## Specify Order Settings

Once you have issued an order you can change a variety of settings to modify the behaviour of the unit(s) carrying out the order. Note if you switch the order type while placing waypoints, you get the default parameters for the original order type. All waypoints in a chain must be of the same order type and they all share the same settings.

- ☞ Select the desired waypoint
- ☞ Open the Task Edit Dialog



## Change Formation Type

☞ Select the desired Formation button

For an explanation of the effects of different formation types see [Formations](#) and [Annex B – Formation Effects](#). It is worth mentioning something about one particular formation type – In-Situ. Units with this formation will halt, keeping the location and facing they had when they received the order. In effect, setting the In-Situ formation type will tell your units to stay put. In some cases, such as a Move order, this may mean they will not move to the ObjLoc!

⊕ If you set a Formation Type of In-Situ for any order, your units will halt in place and will not move unless the enemy forces them to retreat

⊕ Units with In-Situ orders who are forced to retreat will move back until they are safe and will then halt again – they will not attempt to regain their position or move to another location

Most of the time this is undesirable, but sometimes it can be quite useful when setting up a defensive position where you do not want your units attempting to retake lost ground.

## Change Movement Speed

☞ Select the desired Speed button

The default is **Normal**. Select **Fastest** if you need to take the objective as soon as possible. Forced marching will fatigue your troops very quickly, especially at night and especially for foot units.

## Change Route Type

☞ Select the desired Route button

For an explanation of the effects of different route types see [Routes](#).

## Change Aggression Level

☞ Select the desired Aggro button

The higher the **Aggro Level** the more likely the force will engage against enemy units it encounters. The lower the aggro the more likely the force will bypass enemy opposition or run away. Setting the Aggro to Max for an Attack or Probe will maximise the allocation of units to the assault and minimise that to the reserve – see [Specify the Settings for an Attack](#).

## Change Rate of Fire

☞ Select the desired ROF button

The default is **Normal**. Give a **Slow** ROF to conserve ammunition and **Rapid** to really let 'em have it. Rapid firing really eats up the ammo and running out of ammo is NOT good – see **Supply**. Note that the ROF for on-call support fire ( controlled by the AI ) will vary automatically depending on the target range and status - slow if range > 3000m, normal if < 3000m and rapid if < 3000m and the target is assaulting or reorging.

### Change Acceptable Losses Level

 Select the Losses button for an acceptable level of casualties

The **Acceptable Losses** level determines how many casualties your force will take before it warns you. Your units will continue to attempt to carry out their orders even after reaching this threshold, so in effect it is a reminder to you to consider changing your plan and issuing new (less costly) orders. One exception to this rule is the **Probe** order – units engaged in a Probe will **Bunker Down** ( see **Launch a Probe** ) if they assess the opposition is too great and setting a low Acceptable Losses level will cause them to do this sooner.

### Change Supply Allocation Priority

 Select the desired Supply Priority button

The default is **Normal**. You can set the priority levels of re-supply for Ammo, Basics, and/or Fuel for the duration of the order. For example, for an attack that is expected to last over an extended period of time, set a high priority for ammo and fuel resupply. If the Force will be defending over an extended period of time, set fuel allocations to low priority so that the precious fuel reserves get allocated to your advancing mechanized forces.

### Change Formation Frontage and Depth

 Click on the Frontage or Depth button until the desired distance appears

The default is set to **Auto**, which means your computer staff will determine the frontage based on the number of troops, the formation type and the terrain. You can set the frontage and depth to **300, 600, 1000, 1500, 2000, 3000**, or even **4000** metres. Giving a small force a large frontage will spread its subordinates out perhaps to an extent where they can no longer provide mutual support. However, this may be worthwhile if you need to screen a likely approach.

 Click the Auto checkbox to reset frontage and depth back to Auto

Note that these settings apply only to the formation frontage and depth and not to the individual unit frontage and depth. So if you are issuing an order to a single unit, the frontage and depth will have no effect. If you are issuing the order to a force, then the frontage and depth of the individual units will not be affected but they will be positioned so that the whole force covers the specified frontage and depth.

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### Change Facing

**Facing** is the direction your units are heading or pointed. It is important to maximise firepower and minimise vulnerability; see [Footprint and Facing](#). To order your units to face a particular direction:

- ☞ Click and/or drag the Facing pointer to the desired angle

The default is set to **Auto** in which case your computer staff will determine and set the facing based on the direction of greatest enemy threat. While set to Auto, your computer staff may reassess and change the facing as the enemy threat changes. Specifying a particular facing can be useful when you do not want the force to change facing just because they can no longer see the main enemy threat.

- ☞ Click the Auto checkbox to reset back to Auto

When you specify a facing for an order, the yellow perimeter box will be drawn with an open side indicating the rear. In the example above, the frontage and depth have also been specified.

### Change Arty Direct Support Only

You can restrict a force so that its units capable of bombarding will only fire in support of units carrying out the same order. This is called **Arty Direct Support Only**. When it is turned off, your artillery, mortar and rocket units may fire in support of any friendly unit.

☞ Click the Arty Direct Support Only checkbox to turn it on or off

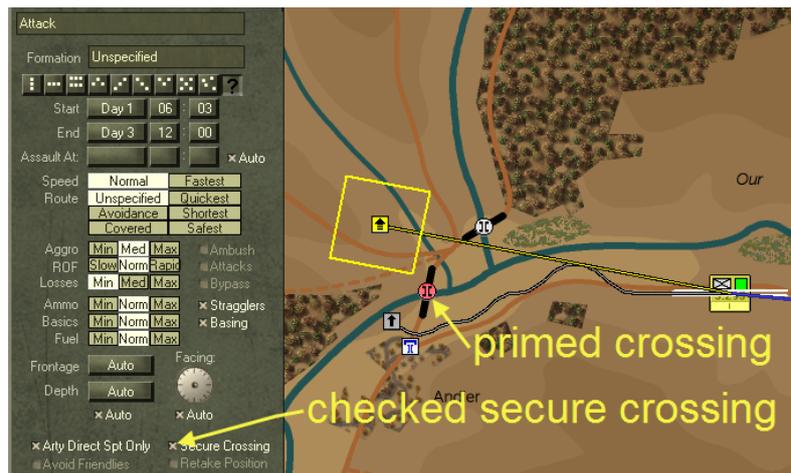
By default this is on for Attack and Probe and off for all other orders.

### Change Secure Crossing

☞ Click the Secure Crossing checkbox to turn it on or off.

This option is only available for Attack and Probe tasks. The default is off. When set to on, any units carrying out this order will try and un-prime the closest crossing within 500m of the order location/ObjLoc. See [Secure, Deny and Construct Bridges](#) for details.

Use this method when the enemy occupies the crossing you wish to secure and the crossing is primed ( indicated by a pink coloured crossing icon ). If the enemy does not occupy the objective, use the Secure Crossing task – see [Secure Crossing](#).



### Change Retake Position

This option is only available for the defend task. The default is off. When set to on, the original defending force will attempt to retake the position if they are forced back due to combat as long as the casualties are not too high. Otherwise the force will defend in-situ after retreating.

☞ Click the Retake Position checkbox to turn it on or off

### Change frequency of Rests

☞ Select the desired Rest frequency button

The default is **Normal**. Select **None** if you need to keep your force moving through the night with minimal rest. Doing this you may find that your troops have exhausted themselves to the point of being unfit for action by morning. Select **Max** if you want them to rest and remain idle through the night so that they continue to the ObjLoc in the morning fully refreshed.

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### Select Task Options

You can apply various options to compliment your orders. These options are available for every order except Bombard.

☞ Click one of the Task option checkboxes to turn each on or off

**Ambush** = when checked, the force will refrain from opening fire until the enemy is very close. The default is off.

**Attacks** = when checked the force may initiate attacks on it's own initiative. Good for clearing out resistance during an advance with limited intel, but bad if you want to make progress on a tight schedule. The default is off.

**Bypass** = when checked the force may reassess if it encounters enemy opposition and choose a new route to bypass them. otherwise the force will continue to follow the original route. The default is off.

**Stragglers** = when checked, the force will not stop and rest with any subordinates that are too exhausted to continue. Instead it will press on leaving the exhausted "straggler" behind. Otherwise the whole force may stop and rest with the exhausted unit. The default is on.

**Basing** = when checked, any subordinate base units are free to determine their own depot locations. otherwise, the basing code will be ignored and you will have to manually look after them. Unchecking this is useful when you want your whole force to move or exit. The default is on.

### Select an Order

You can check and adjust the order settings of a force, usually without incurring an orders delay.

☞ Click on the order icon or on a waypoint icon to select it

If two or more order icons overlap, click repeatedly to cycle through them to the one you want – this works the same as selecting a unit that is drawn behind another ( see [Select Units](#) ).

When you select an order or waypoint, the selected icon will be shown in yellow and a yellow perimeter box will be displayed indicating the approximate expected outline of the deployed unit at that location.

To see the order settings:

☞ Open the Edit Task dialog.

Note that the settings apply to all waypoints, except where specified otherwise in the manual.

To toggle between a selected order and its unit:

☞ Press Ctrl + Up Arrow keys  + 

### Select a Unit Task

In response to your orders, your units will develop their own **Unit Tasks**. Due to orders delay it may take a while before the unit tasks are generated by the AI. As the AI executes its plan it may destroy a unit task and create another - eg. when it arrives at its destination it will destroy the Move task and create a Defend task.

To select a Unit Task for the selected unit:

☞ Click on the Unit Task icon or

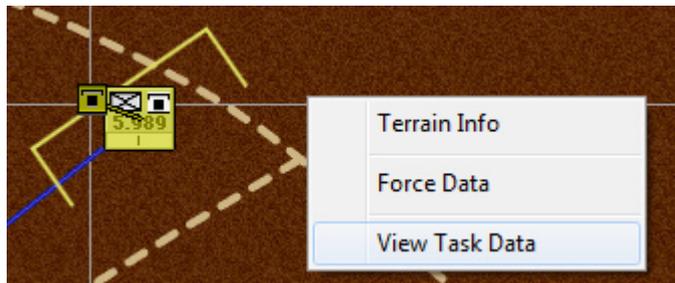
☞ Press Ctrl + Down Arrow keys  + 

When you select a unit, any tasks it has will be shown using grey and black icons versions of the order and waypoint icons. You can select unit tasks the same way you can select orders.

To view the selected unit task settings:

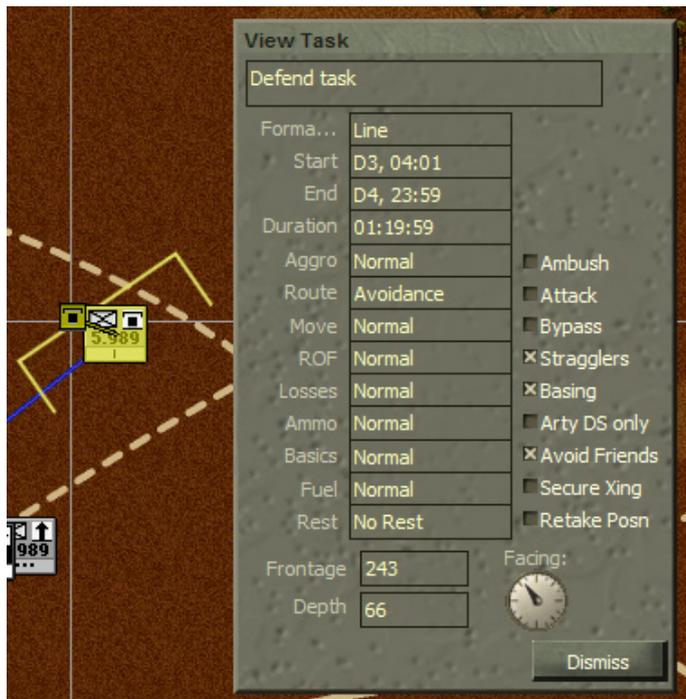
☞ Open the View Task dialog

Note you can't edit the task settings directly. See [Objectives, Orders and Tasks](#) for more information.



Note in most cases, selecting a unit will display only one unit task icon as shown below. However, in some case more than one unit task icon is displayed. These represent either additional unit tasks that will be done in sequence by the selected unit or those unit tasks being performed by other subordinate units, not in formation with the selected unit.

Eg. selecting a battalion HQ conducting an attack will often display multiple unit tasks. There will be a Move to the FUP task located at the FUP. Under this icon there will be a Reorg task ( click again on the Move unit task icon to select it ). There will be an Assault task at the ObjLoc plus the final Reorg task under it. These are all being conducted by the main assault group and done in sequence ( Move, Reorg, Assault, Reorg ). In addition there may be a Defend task for the Reserve group. They will move to the reserve location and defend there independently of the main assault group.



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Unlike the task settings for your orders, those of unit tasks specify the estimated timings, formation type, frontage and depth etc that apply to the task – ie that are actually being used. Note that timings may be subsequently adjusted - ie extended ( slipped ) or brought forward ( cribbed ) - during the attack by the AI.

To cycle through the selected unit and its Unit Tasks:

☞ Press Ctrl + Down Arrow keys  + 

### Delete Orders

To delete an order:

☞ Select the unit whose order you want to delete

☞ Press the Delete key  or

☞ Select the order location and press the Delete key  repeatedly until the order location and any waypoints have been deleted; or

☞ Click the Reattach button on the Orders Dialog – this deletes the order and places the unit back under command of its Organic Superior ( see [Group and Ungroup Units](#) and [Organic and Attached Units](#) )

When you have deleted a unit's orders, the unit will stop moving and will wait for further orders. If you have the unit icon info box set to display **Tasks** ( F1 key), the info box will become blank. Any subordinates of the unit whose orders you have deleted will keep following the tasks they have been assigned by that unit until they receive the message that the order has been deleted. This effect will not be noticeable unless you have orders delay turned on – see [Work with Orders Delay](#) and [Orders Delay](#).

### Modify Orders

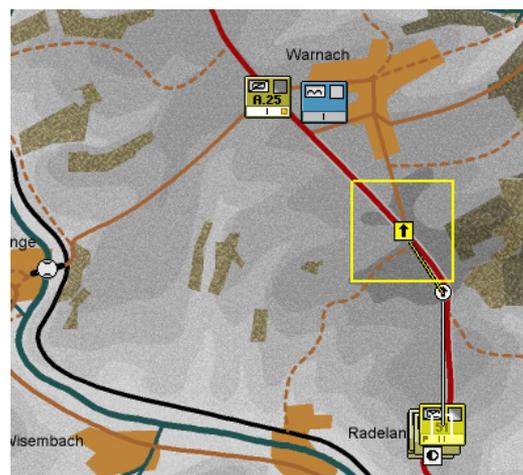
After you have issued an order, you may decide that it needs to be changed in some way.

#### Change the Order Location / ObjLoc

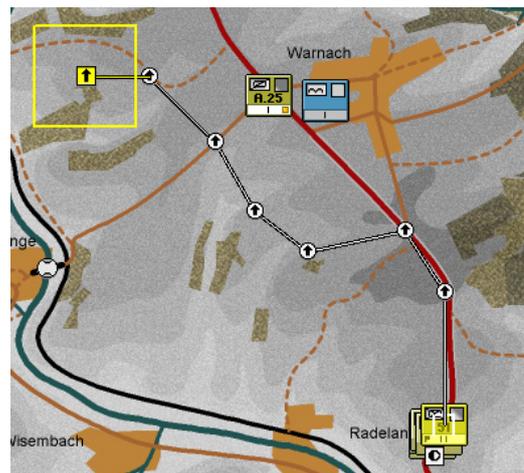
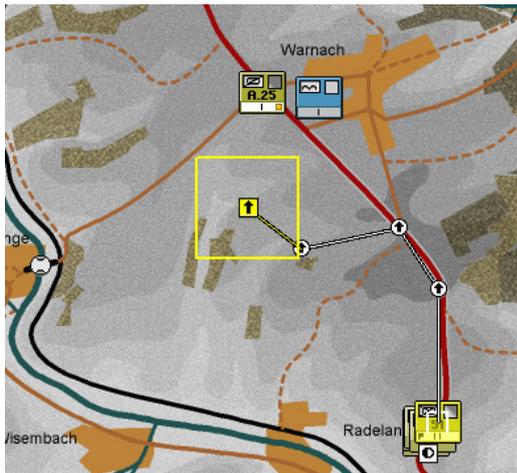
To change the order location of an order without changing the order type:

☞ Select the order icon and drag it to the new location, or

☞ Select the order icon, activate the same order type as the



existing order using the Orders Dialog or keyboard shortcut, and click on the map to add the new order location ( the old one becoming an intermediate waypoint ).



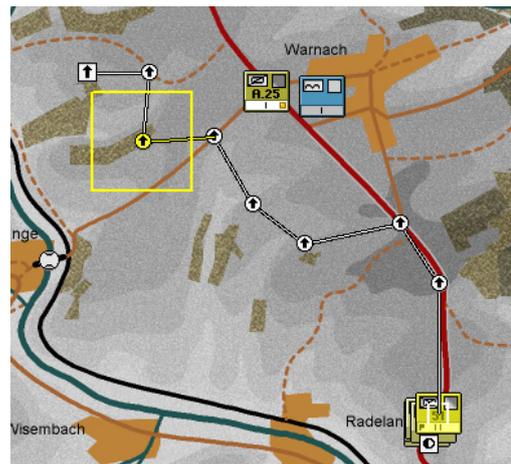
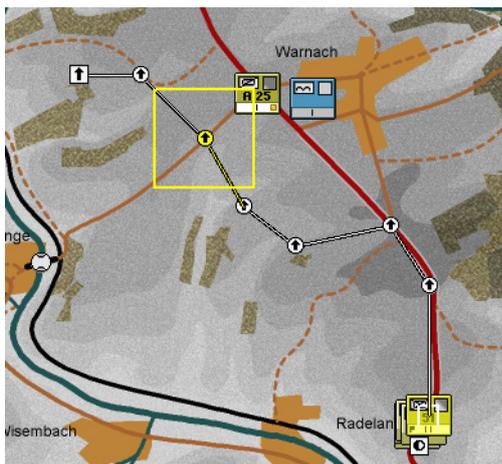
If you are playing with Orders Delay turned on, changing the location of an order will cause a replan (see [Orders Delay](#) and [Avoid Causing Replans](#) ).

### Move, Add, or Delete a Waypoint

You can move a waypoint if you decide you need to re-route a unit but you are still happy with the order location and type. To do this:

- ☞ Select the waypoint you want to move and drag it to the new location

You can also delete a waypoint if you decide it is no longer needed, though it is usually better to move it to somewhere better instead:



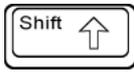
## COMMAND OPS 2

- ☞ Select the waypoint you want to delete and press the Delete key 

If you need to re-route a unit but you are still happy with the order location and type, then insert additional waypoints. To do so:

- ☞ Select an existing waypoint
- ☞ Activate the same order type as the existing order – eg if Move, hit M key
- ☞ Click on the map to add a new waypoint after the selected one.

If you want to add more than one waypoint:

- ☞ Hold down Shift  as you click on the map

### Change Order Settings

You can change the order settings of an existing order quite easily:

- ☞ Select the order (or one of its waypoint icons)
- ☞ Open the Edit Task dialog
- ☞ Change the order settings .

Some changes will cause your units to replan, and if you are playing with Orders Delay this will take some time. For details, see [Work with Orders Delay](#).

### Change the Type or Location of an Order

If you want to keep your order settings and waypoints, but change the type of order:

- ☞ Select the current order location
- ☞ Activate a new type of order using the Order Dialog or a keyboard shortcut
- ☞ Click on the map to place a new order location.

The unit will now follow the original waypoints and order settings but will end up in the new order location and will perform the new type of order. If you have specified waypoints for the current order, and you want to keep the existing order location, you can use a similar method:

- ☞ Select an intermediate waypoint instead of the order location
- ☞ Activate a new type of order using the Order Dialog or a keyboard shortcut
- ☞ Click on the map to place a new intermediate waypoint.

This will place a new waypoint immediately after the one you selected. The order location and order settings will remain the same but the unit will now move through the new waypoint as well, and will perform the new type of order.

- ⊕ If playing with Orders Delay turned on, changing the type or location of an order ( ie moving the final waypoint ) will cause a replan ( see [Orders Delay](#) and [Avoid Causing Replans](#) ).
- ⊕ There is no undo for any order related activities

### Issue New Orders

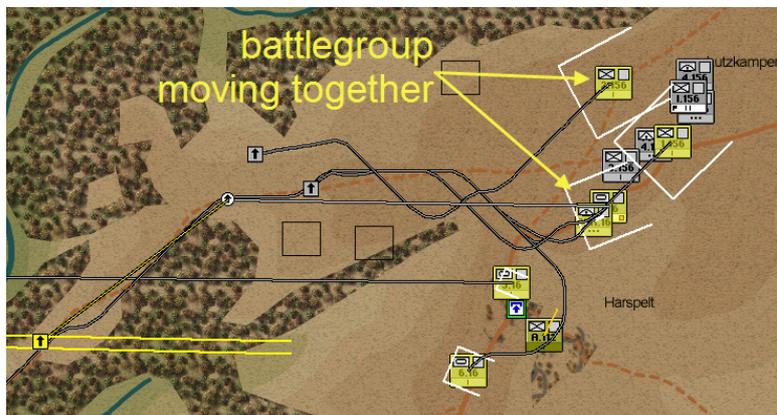
To cancel the current orders of a unit and issue brand new ones, including resetting the order settings to default:

- ☞ Delete the current order ( see [Delete Orders](#) ) and issue a new one, or
- ☞ Select the unit and issue a new order

### Group and Ungroup Units

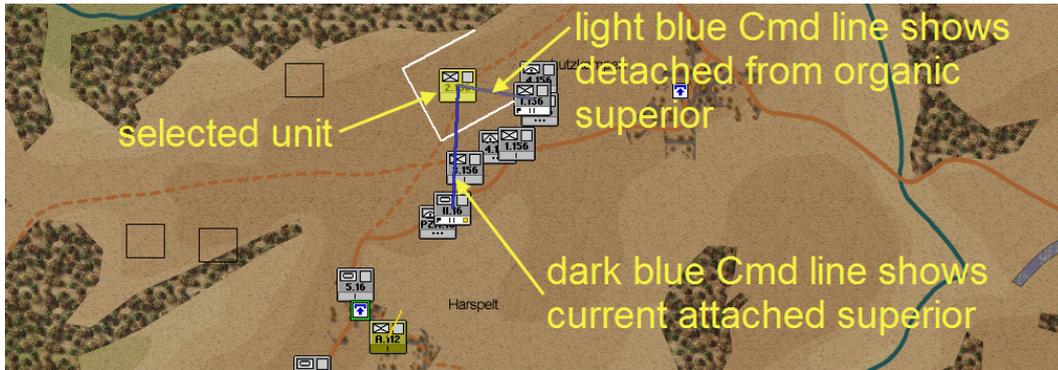
At the start of the game, your units will already be organised in groups, each with its own commanding unit or **Headquarters (HQ)**. Some groups will contain other whole groups – for example a Regiment will contain two or more Battalions. Those Battalions in turn will contain several companies each. This starting organisation is called the **Organic Structure**. The HQ of each group is called the **Organic Superior** of the other units in the group, and those units are called the **Organic Subordinates** of the group HQ.

You can arrange your units into different groups, called **Battlegroups** (or **Kampfgruppen**). When you give orders to a battlegroup, the computer staff will determine which is the senior unit and will make it the **Battlegroup Commander**. Units in the battlegroup that are not organic subordinates of the battlegroup commander are said to be **Attached**; if you take the organic subordinate of a unit and attach it to a different battlegroup, it is said to be **Detached** from its organic superior. See



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[Force Structures](#) for more information.



### Create a New Group of Units

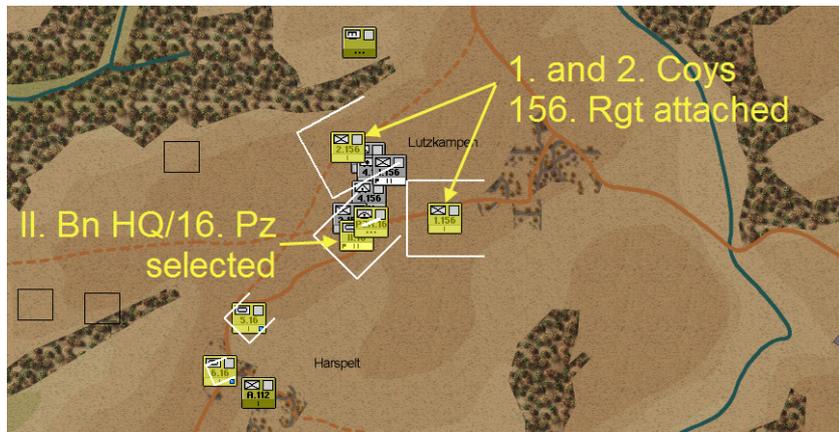
To create a new group of units:

- ☞ Select the desired units using the mouse and / or keyboard
- ☞ Issue an order to the units.

When you do this, your computer staff will identify the most senior unit in the group and place it in command. This commanding unit will process your order and issue tasks to the other units in the group to carry it out. The units will remain grouped until you decide to ungroup them.

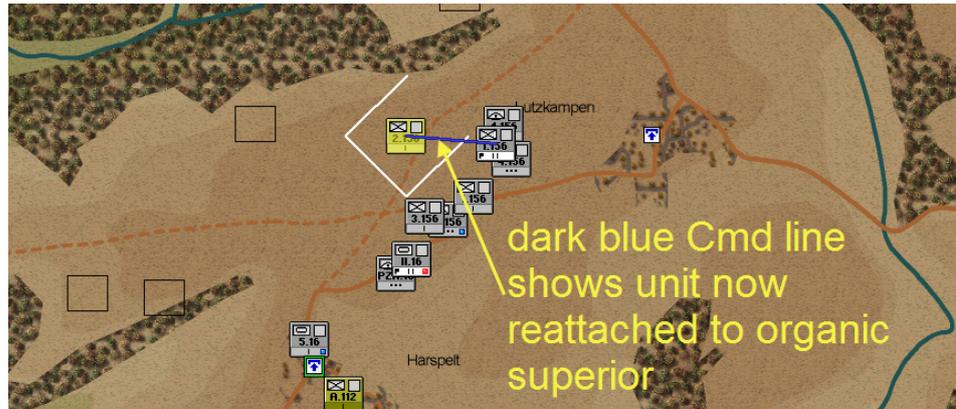
If the units you select to form your new group have organic subordinates, then these will be included in the group. If the units you select for your group are themselves commanding attachments, these will be included in the new group but will be under direct command of the battlegroup commander (which may not be the unit to whom they were originally attached).

- ☞ If you form a battlegroup using units that were already part of a different battlegroup, then they will no longer be part of the first battlegroup



## Reattach units

Once you have formed a new battlegroup, you may want to break it up and return its units to their organic superiors (called **Reattaching**). You can also use this to place a unit to whom you have given direct orders back under the command of its organic superior. This can be useful when reinforcements arrive, but beware this will force a replan for the boss.



To reattach:

- ☞ Select the unit you want to reattach and click the Reattach button ( H key  ) on the Orders dialog; or
- ☞ Select the subordinate unit and its organic superior (and any other unit you want to include) and issue a new order

If the unit you are reattaching was commanding attached units, those units will be placed under the command of their immediate organic superior, provided you have not given them a direct order. In such cases, the unit will be reattached to the next organic superior up the chain of command that is not under your direct command. If none can be found it will be attached to the on-map Boss, regardless of whether this is under your direct command or not.

## Move Your Forces

To order your units to move to a particular location:

- ☞ Select the unit(s) you want to move
- ☞ Issue a Move order (see Issue Orders) on the location where you want your troops to end up.

If you want, you can specify additional waypoints through which the unit(s) must move; you can also change the settings that govern how they behave while moving – see [Specify Order Settings](#).

- ⊕ Once the unit(s) have reached the order location they will automatically Defend there – see [Defend a Location](#)

## COMMAND OPS 2

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- ⊕ Any settings you specify for the Move order will be applied all the way along the route – see [Formations](#) and [Routes](#)

If the force you Move includes long-range artillery units, they may not move to the same destination as the rest of the force; instead, they may move to a **Firebase** location from which they can support the rest of the force with bombardments.

If you issue a Move order to a single artillery unit, it will move to the order location.

## Seize an Objective

Where the enemy is defending a piece of terrain that you want to secure, the **Attack** is your primary means of ejecting his units and securing the ground with your own. Alternatively, you may want to use a less aggressive approach and order a **Probe** instead – the two are very similar.

Ordering a force to attack sets in train a whole series of events. A force with no subordinate HQs will conduct a **Basic Attack**. If the force includes a subordinate HQ or **SubHQ**, with its own subordinate line units, then it will conduct a **Complex Attack** ( see [Launch a Complex Attack](#) ).

To order an **Attack** or **Probe**:

-  Select the unit(s) you want to attack with
  
-  Issue an Attack or Probe order with the order location on the objective you want to seize.

Your troops will then perform the complex dance that is an attack, moving through any waypoints you have specified and on to the objective. As a Probe is very similar to an attack, the information below applies to both orders. For an explanation of the differences between the two, see [Launch a Probe](#).

## Understand How an Attack Works

Even a basic attack is a complicated activity! The force conducting the attack will separate into several groups with different roles.

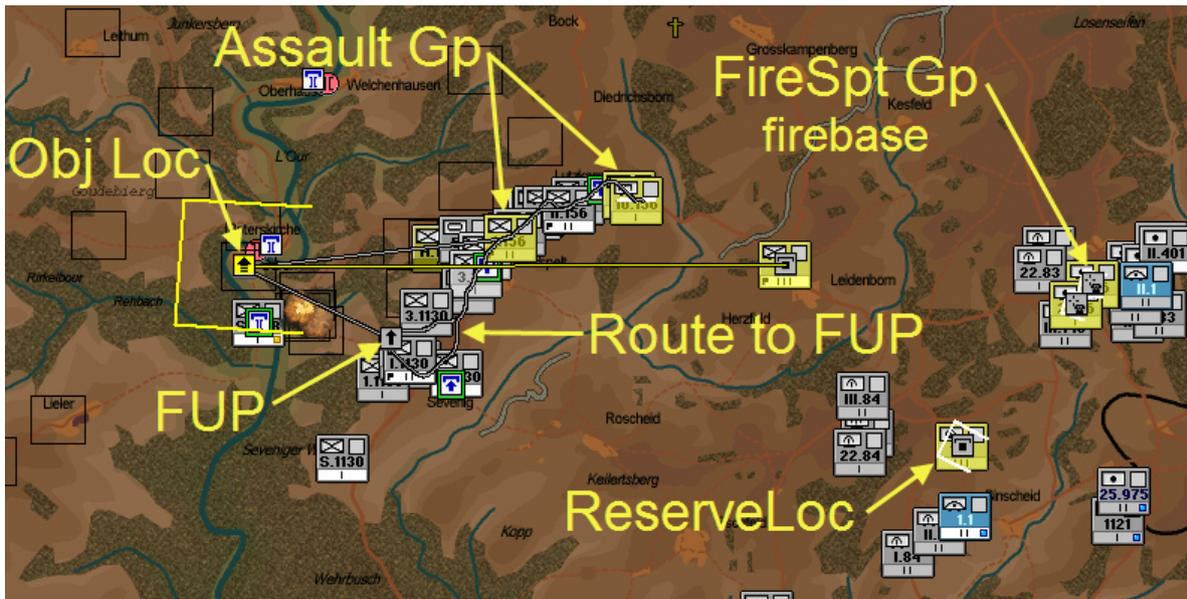
The **Assault Group** contains most of the line and line-support units; these units will close on and seize the objective. The **Reserve Group** includes all short-range indirect-fire units (mostly mortars), and any line and line-support units not required for the assault group; these units are held nearby but out of the attack. Short-range direct-fire artillery like infantry guns will also usually get allocated to the Assault Group. The **Fire Support Group** includes any long-range indirect-fire units (mostly field, medium or heavy artillery). These units are kept out of reach of the enemy but in positions from which they can bombard in support of the assault.

The attacking force will move through a number of key locations. The **Forming Up Point (FUP)** is where the Assault Group will reorganise and spread out into the assault formation. The **Reserve Location** – usually near the FUP – is where the Reserve Group will stay during the attack (unless mortar units in the Reserve can't reach the attack objective, in which case they will move forward until they can). The Fire Support Group will set up in the **Firebase** (further to the rear but within artillery range of the objective) to provide fire support during the attack. Finally, the **Attack Objective**, the order location for the attack, is the ground you want your force to seize and hold. At the end of a successful attack your assault and reserve groups will be deployed on the attack objective in a defensive position.

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The attack, therefore, occurs in a number of steps or **phases**. These phases are:

- ⊕ Move to the FUP – the force will Move from its current location to the FUP, reserve location, or firebase as appropriate
- ⊕ Reorganise (Reorg) in the FUP – the assault group will Move into assault formation and will Reorg to recover cohesion; the reserve group will Defend in its location; and the fire support group will deploy its guns to provide On Call support
- ⊕ Assault – at HHour, the assault group will Assault from the FUP straight to the objective with a maximum of speed and aggression
- ⊕ Exploit – parts of the assault group will continue to Assault past the objective to ensure there are no enemy units nearby
- ⊕ Reorg on the objective – once the assault group has reached its objective and exploited, it will Reorg to recover cohesion and the reserve group will start to Move forward to the objective
- ⊕ Secure the objective – once the assault group has finished reorging, the assault and reserve groups will Defend on the objective and the fire support group will take up new positions from which to provide On Call support



If the attack is not successful, your force may need to replan before trying again – see [Reassessment](#). Your force will reattempt the attack and will continue doing so until they either succeed or you give them new orders.

## Set a Specific FUP

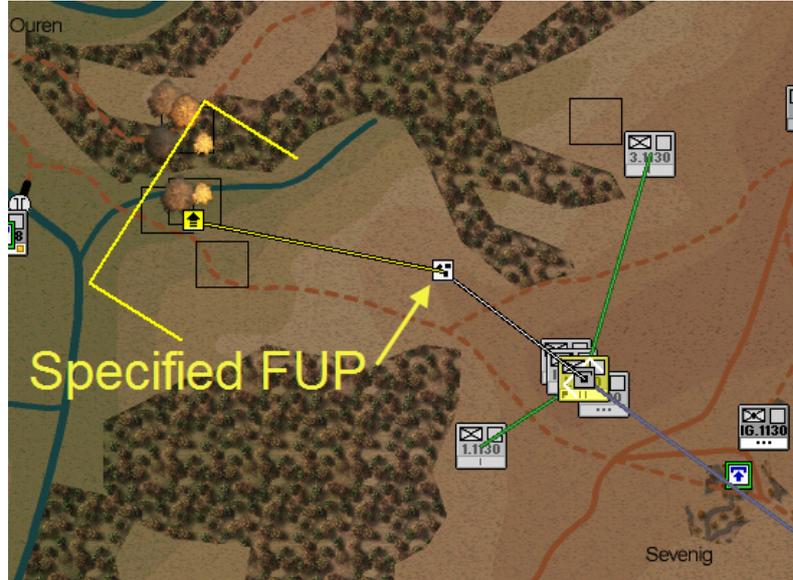
When you order an attack, without specifying any intermediate waypoints, the HQ will determine the best place for the FUP. This means it may attack the enemy from a direction you do not want. If you want your force to attack from a particular direction, you should specify a FUP. As far as possible, the assault group will always Assault in a straight line from the FUP to the attack objective, only detouring around impassable terrain.

You can specify the FUP for an attack by specifying at least two points when issuing the order – the final point indicates the attack objective and the second-last point indicates the FUP. Any other preceding waypoints will delineate the route of the move to the FUP. To order your force to use a particular location for the FUP:

☞ When ordering your attack, set at least one waypoint in addition to the order location

The icon for the second last waypoint will be displayed as a **Reorg** order icon. Moving this point will cause your force to replan; see [Work with Orders Delay](#) for more information.

While the assault group is moving into assault formation and reorging in the FUP, they are vulnerable to enemy bombardment and attack, so it's a good idea to form up in a safe location. This means out of sight of the enemy – behind a ridge is ideal. A good FUP is not too close to the enemy nor too far away, otherwise your force will lose too much cohesion and suffer too much fatigue. In selecting a good FUP remember that you need to balance safety against speed. For instance, covered terrain (woods, town etc) provides good cover from enemy observation and fire and is generally preferred for non-motorised units. However, motorised units will take considerably longer to shake out into assault formation.



## Launch a Basic Attack

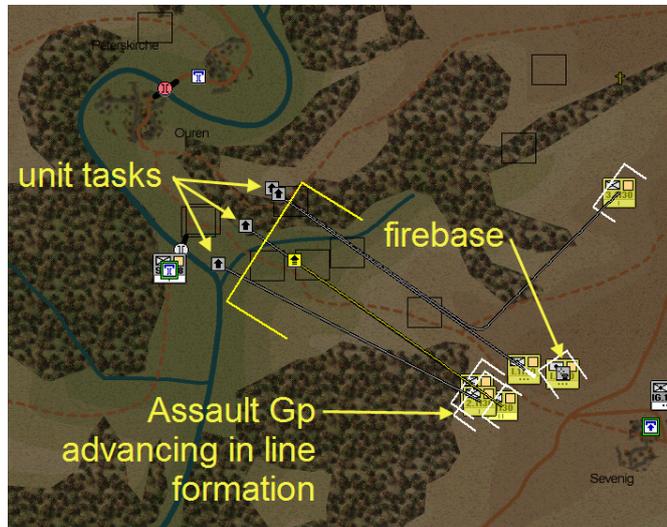
In a basic attack, there is only one HQ unit. The HQ will go into the assault group.

If you have not specified an FUP, the HQ will determine the best place to form up for its assault (FUP). It will determine the amount of time it needs to spend reorganising at the FUP – shaking out into assault formation. If you have not specified waypoints leading to the FUP, it will also determine the best route to advance to the FUP, if possible avoiding enemy fire and observation. It will order the reserve to Defend nearby – close enough to provide on call support but far enough to be out of harms way.

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Once orders have been received, units will Move to the reserve location, the firebase, or to the FUP. At the reserve location, units will Defend – arty units may provide On Call support as requested. At the firebase, arty units will deploy ready to provide On Call support for the attack. At the FUP, units will Reorg to recover cohesion and will shake out into assault formation.

At the HHour, the assault units will start to Assault towards the attack objective – moving, firing and calling in on-call-support as they encounter enemy units. Armoured units will tend to stand-off and fire at enemy targets once they are within their effective range. Long-ranged line support units, such as anti-aircraft and machine gun units, will halt, Defend, and fire once they are within their effective range and can see the objective.



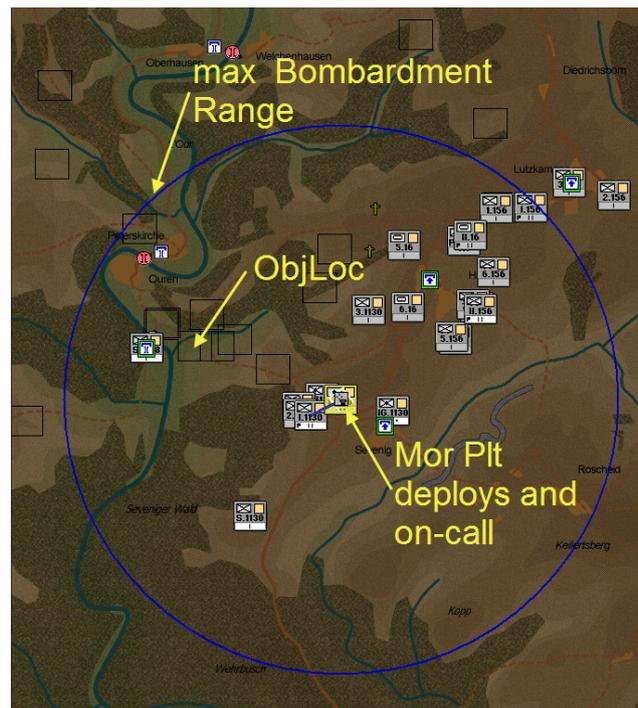
⊕ You cannot directly order an assault – Assaults occur only as part of an Attack or Probe

Similarly, if an arty, mortar, or rocket launcher unit does not have sufficient range to bombard the objective from the reserve location it will be committed to the assault. During the assault it will stop as soon as it gets within effective bombardment range. It will then Defend and provide On Call support.

Leading assault units will often exploit past the assigned objective. Once the HQ has reached the attack objective, the force will conduct a final reorganisation, bringing forward the reserve group and shaking out into a defensive formation on the objective. Thereafter they will Defend.

### Optional Tasks within an Attack

If time is tight, the final Reorg may not happen. If the force starts very close to the enemy it may also form up in its present location (In-Situ) and dispense with the advance to the FUP. If there are no artillery units and no other units to spare for the reserve, then the Reserve task may also be done away with. At the minimum, a basic attack thus consists only of a Reorg task at the FUP, followed by an Assault task to the objective and a Defend on the objective.



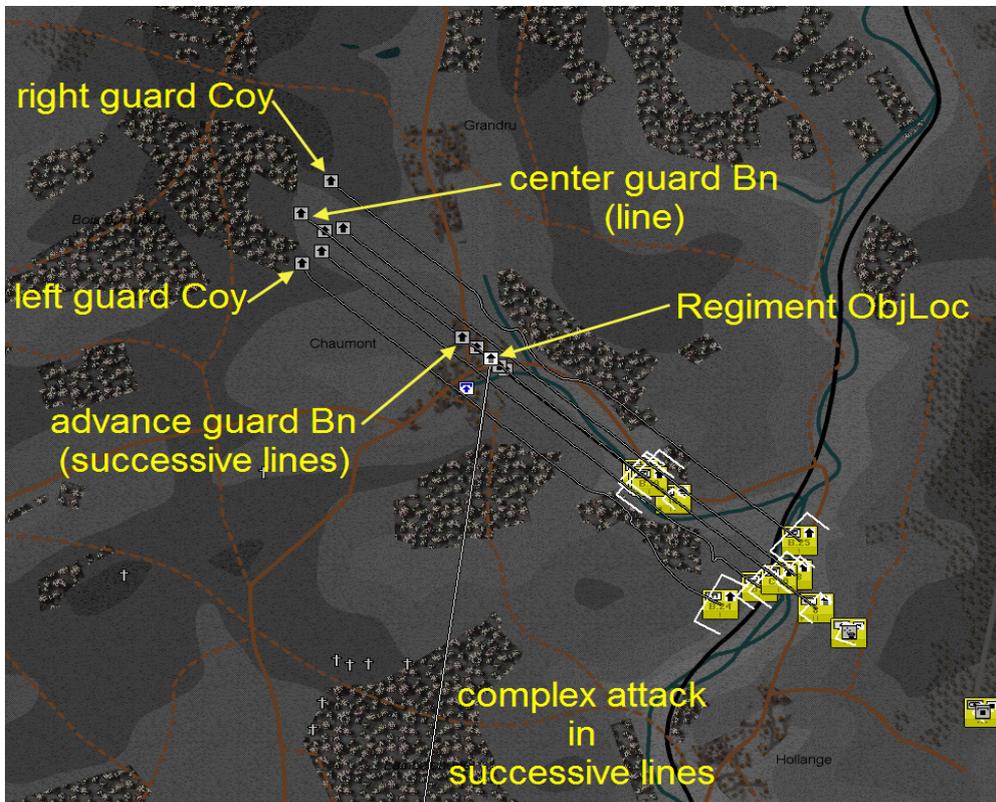
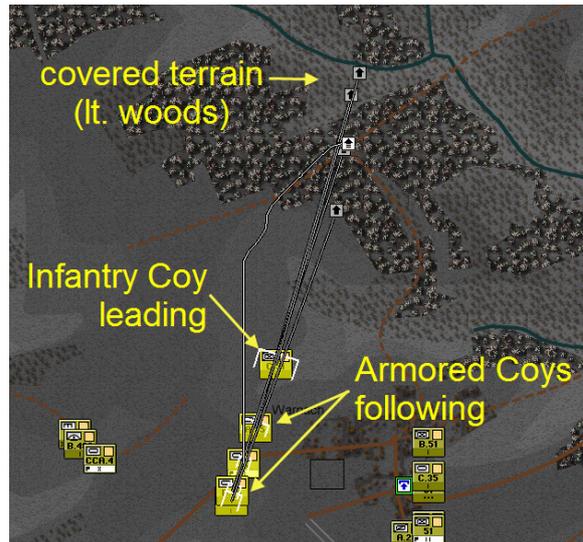
### Employ Infantry-Armour Cooperation (Basic Attacks)

If the force includes armoured units and the assault route is into or through covered terrain, selecting Successive Lines will send the infantry forward to the front line and the armour in the rear. To ensure that this occurs:

- ☞ Attach an armour unit to an infantry basic attack, or attach an infantry unit to an armour basic attack

Infantry-armour cooperation in complex attacks is a more complicated proposition. See [Employ Infantry-Armour Cooperation \(Complex Attacks\)](#) for details. Essentially the force will attack in line with each sub-force attacking in either line or successive lines.

Note the centre guard exploits beyond the Regiment objective.



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### Specify the Settings for an Attack

While the setting in the Edit Task dialog generally apply to all phases of the attack, the Assault will always move at the Fastest rate and will always use the Shortest route from the FUP to the attack objective. Further, the Aggro and Acceptable Losses thresholds will be increased by one level from what you set (up to Max level) – for example, if you set these to Medium, they will automatically become High for the Assault. The advance to the FUP may also not use the Formation Type you select; at the discretion of the HQ, it will usually be made in Road Column, Vee, or Arrowhead formation.

#### Speed

If you need to put in a quick attack then:

☞ select Fastest move speed

This will increase fatigue, especially for foot units.

#### Aggro, Rate of Fire and Acceptable Losses

If you want to “max out” your attack – go in with all guns blazing and press on regardless of casualties – then:

☞ set Aggro to Max

☞ set the Rate of Fire (ROF) to Rapid

☞ set Losses to Max

Warning - doing so may result in units running out of ammo and suffering heavy losses. Even with these settings, if the enemy is too strong, your attack may falter and be forced to retreat or rout.

#### Route Type

If you want your force to sneak up unobserved to their FUP and to avoid enemy firepower, then:

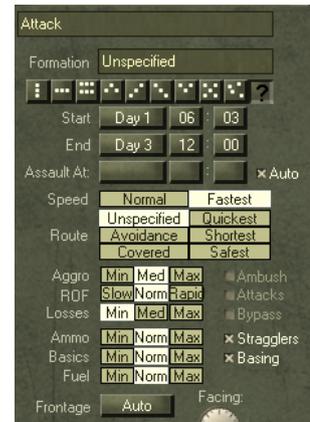
☞ select Safest Route

This is usually the slowest route available.

#### Formation Type

If you leave the Formation type unspecified, then the force will probably advance to the FUP in road column and then shake out into Line for the Assault. Changing formation type for the Attack only affects the Assault phase. To specify a formation type for the assault phase:

☞ select a Formation Type from the Edit Task dialog

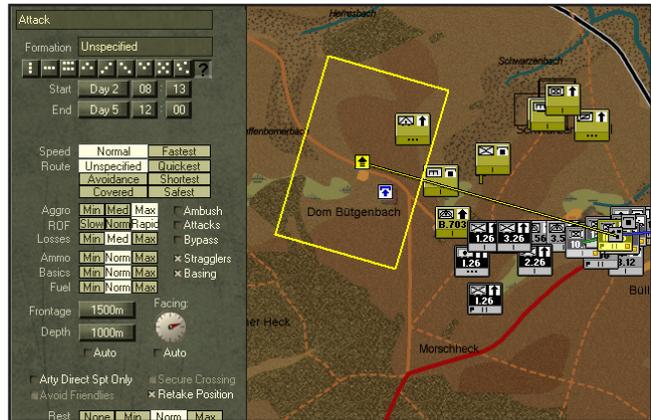


## Frontage and Depth

Similarly, specifying a frontage will only affect the Assault phase. For instance, a battalion would normally attack on a 600m frontage in line formation, but may need to cover an enemy-occupied objective of 1000m. If you set the frontage to 1000m it would still advance to the FUP in road column on a 10 - 20m frontage, then deploy into line at the FUP on a 1000m frontage. To specify a frontage:

☞ left- or right-click on the Frontage button until the desired distance appears

A left click increases the frontage one increment and a right click decrements it. Additionally, for all formations other than line or successive lines it is best to keep the depth the same as the default. You can decrease it for line, where there are only a few units, and increase it for successive lives, especially if there are many units.



## Start, End, and Assault At times

Manually set the Start and End times to coordinate Moves and other tasks so that they start together or end together or one starts when the other ends. To specify a Start, End or Assault At time:

☞ Click on the timing buttons to adjust the time



Left click to increment and Right click to decrement. Minutes are adjusted in 5 minute increments. Holding down the control key while clicking the minutes button adjusts in one minute increments.

For Probes and Attacks, there is a third timing control (AssaultAt) that governs when the Assault will start. If you want to coordinate multiple attacks so that they all start assaulting at the same time, then set a common AssaultAt time for each of these. If you want to lay on a preliminary bombardment then set it to end at the AssaultAt time or sometime shortly thereafter so its fire lifts before your assault forces get too close.

Note you cannot adjust the Assault At time beyond the End time, nor before the Start. The AssaultAt timing control has an Auto checkbox to its right. By default this is checked and you do not have to worry about setting the Assault At time. If you wish to set the AssaultAt time, uncheck the Auto box. This will then display the earliest possible AssaultAt time, which is equal to the Start. If you want to revert back to the default, just check the Auto box.

The AI will automatically slip ( ie postpone ) the Assault At time you set if it needs more time and will advise the amount slipped in a message. However, it will not automatically crib ( ie bring forward ) the Assault At time if it is ahead of schedule. You will have to do that manually.

## COMMAND OPS 2

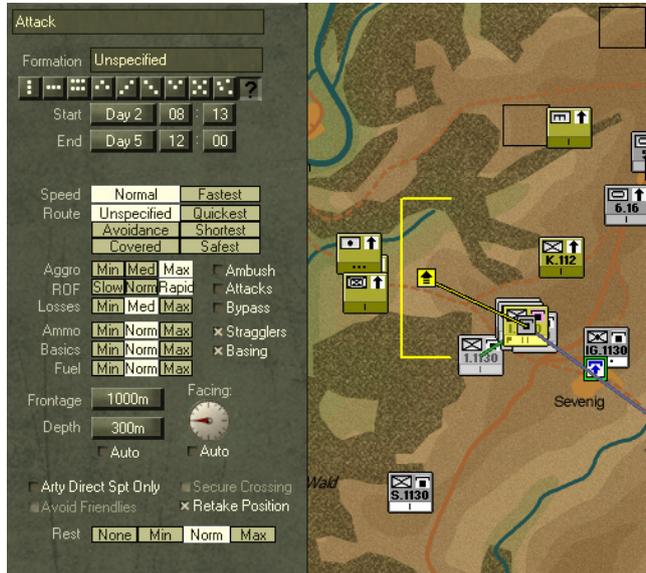
### Facing

- Click on the Facing control and/or drag till the arrow faces the desired direction

The Facing setting only applies when the force defends the objective after the assault. During the Assault it will always face towards the ObjLoc.

### Arty Direct Support Only

Leave this checked ( the default ) to ensure that any assigned indirect fire support units will only support units assigned to this attack. If unchecked, they may support other friendly units and not be available when needed by the assault units.



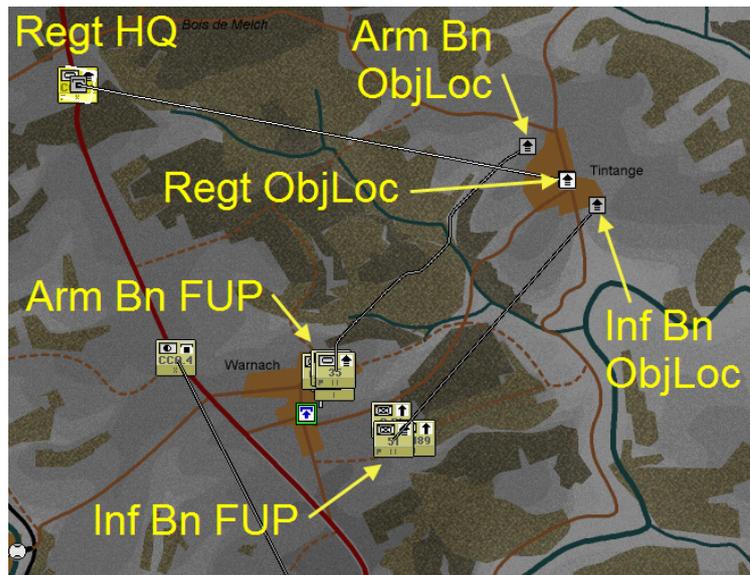
### Secure Crossing

If you are launching the attack to secure a crossing, check the **Secure Crossing** checkbox. This will cause units in the Assault Group to try and un-prime the crossing when they get close enough.

### Launch a Complex Attack

Complex attacks are those involving subHQs. When you order a unit to attack and it has one or more subHQs, it will conduct a complex attack. This is similar to the basic attack, except that the HQ commanding the whole show (the **Senior HQ**) will go into the reserve group and the subHQs will be tasked to conduct their own attacks. Each subHQ will also create its own reserve group that will provide on-call support during the attack.

If you have not specified a FUP, the force commander is bold enough, and the force ratio is very favourable, the subHQs' attacks may be **Uncoordinated**. In this case, the selection of FUPs, advance routes and timings will be left to the subHQ commanders. They will each plan their own attack on the objective location more or less independent of the others. However, they will avoid selecting the same FUPs, so they will assault from different locations.

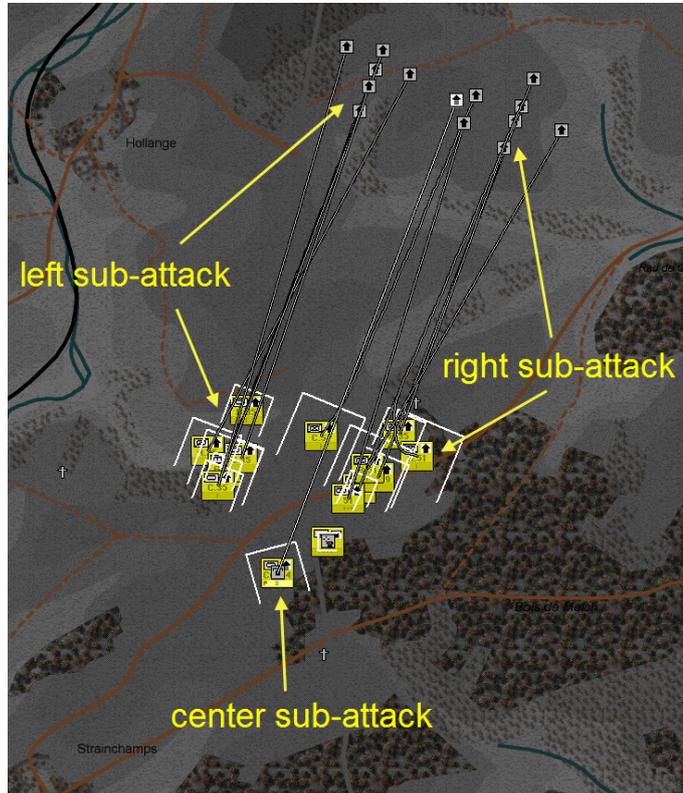


### Coordinate a Complex Attack

In general, though, complex attacks will be **Coordinated**. This means that a common FUP will be selected by your staff and subHQs will launch their assaults at the same time. The FUPs of the subHQ attacks will be arranged so that they either approach the objective in line, or in successive lines (called **In Echelon** or **Echeloned**). If the attack is in line, often one subHQ will be tasked to exploit past the objective location; if there are three or more subHQs in the attack, then this will always happen. If the attack is in echelon, the first wave will stop at the original objective, while follow-on waves exploit past the original objective location.

To force a complex attack to be coordinated:

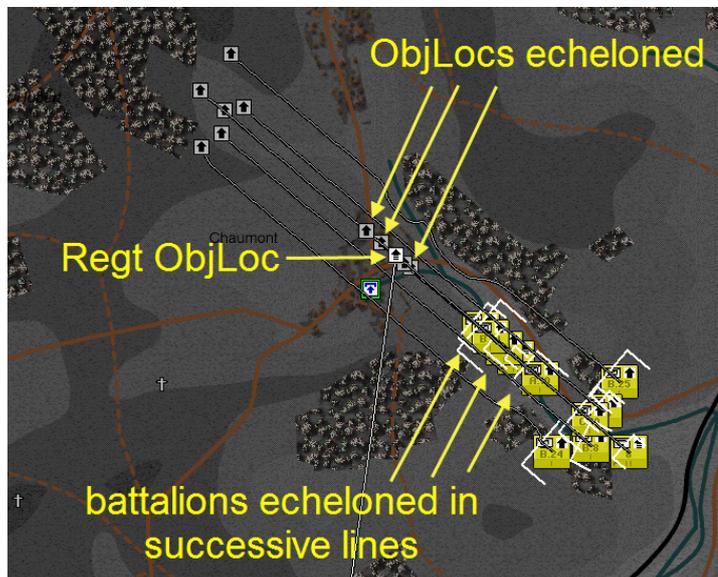
- ☞ Specify a FUP for the complex attack



### Specify Formations for a Complex Attack

You can specify the formation to be used by each of the subHQ assaults by setting a formation for the attack as a whole. See [Change Formation Type](#).

If you have specified a FUP, and you select Line formation, the subHQ attacks will use line formation and the whole attack will be carried out in line. If you select Successive Line formation, the subHQ attacks will be carried out in successive line formation and the whole attack will be echeloned. If you specify a different formation, the subHQ attacks will use the formation you have specified, and the senior HQ will decide whether the attacks themselves are launched in line or in echelon.



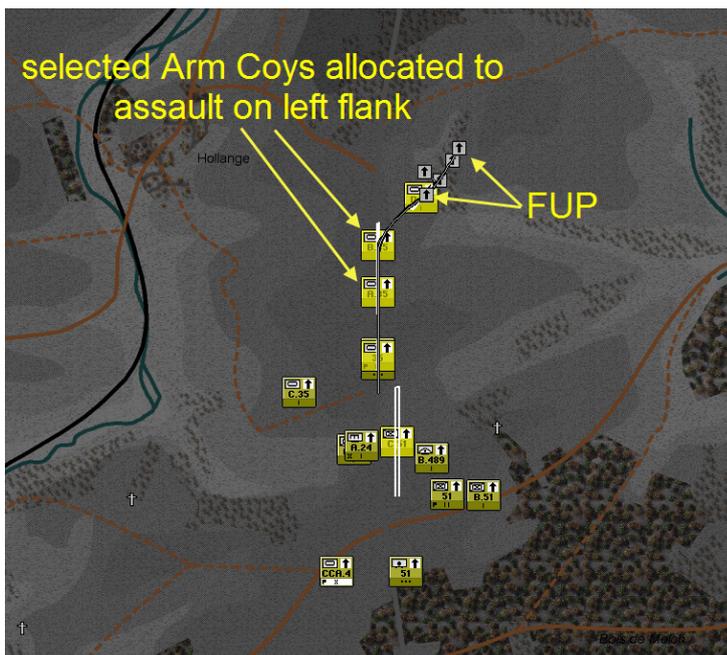
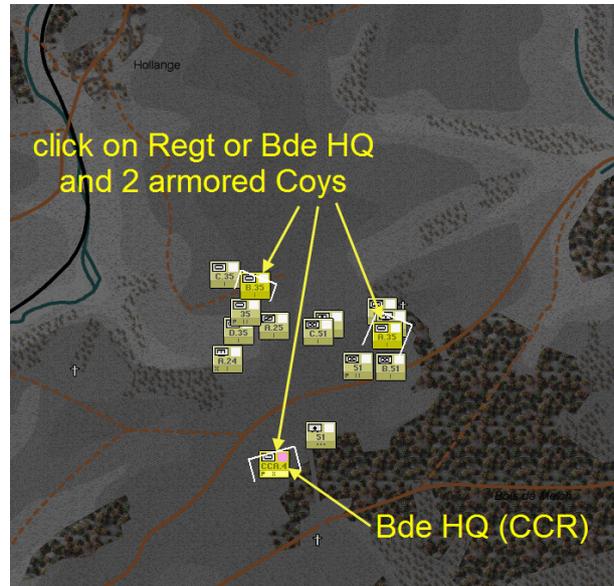
## COMMAND OPS 2

### Employ Infantry-Armour Cooperation (Complex Attacks)

For complex attacks, infantry-armour cooperation will only routinely occur if the subordinate HQs each already have a mix of infantry and armour as their organic structure ( see [Organic and Attached Units](#) ). Although you cannot force a complex attack to employ infantry-armour cooperation, you can improve the chances of it happening:

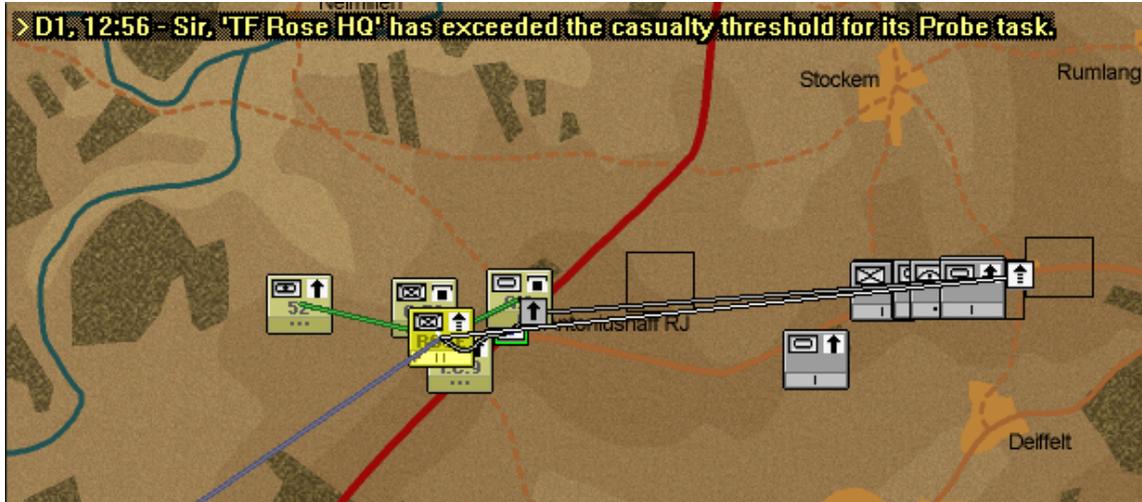
- ☞ Attach some armour companies to an all-infantry complex attack, or attach some infantry companies to an all-armour complex attack

The attachments must be made as individual companies. For example, if you are attaching some tank companies to an infantry regiment attack, make sure you don't attach the tank battalion HQ. If you do include the tank battalion HQ, then it will command the tank companies in the assault, so there will be no chance that the tanks will get allocated to one of the infantry battalions. Even when attaching individual companies, it is up to the HQ in charge of the complex attack to decide where to allocate them; better commanders will be more likely to employ infantry-armour cooperation.



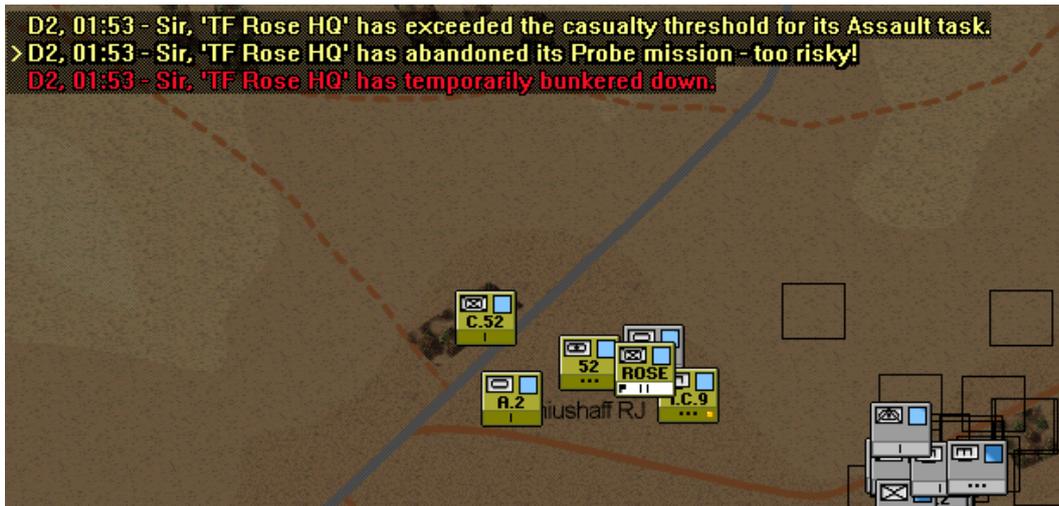
## Launch a Probe

A Probe is largely the same as an Attack. However, the default thresholds for Aggro and Acceptable Losses are set to Low instead of High, resulting in an increased probability that the force will exceed their casualty threshold when they meet serious opposition. In which case, you will receive an “urgent” message to that effect.



Of course you can call off the attack at this stage by issuing another order. If you choose not to, though, the AI may intervene. Unlike in an attack, where the force will repeatedly Assault until either they achieve the objective or receive a new order, a probing force may decide to **Bunker Down** if things get too threatening. The force will retreat a short distance and defend until its next reassessment. If your probe force decides to bunker down, you will receive a message to that effect.

As a result Probes can be quite useful for creating diversions or reconnoitring in force, without causing excessive losses – especially when launched into an unknown area.



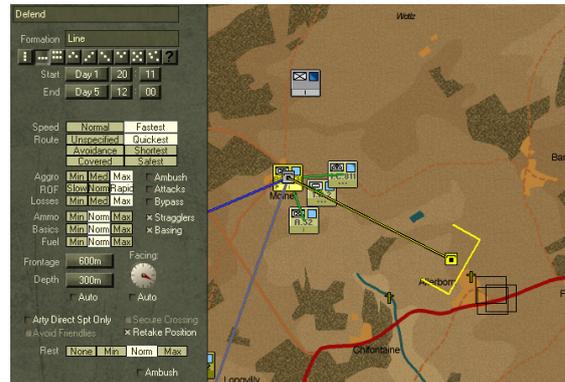
## Hold an Objective

The first step in holding an objective is to secure it initially. Use Move, Attack, and Probe orders to push the enemy out of the way and gain control of the objective, then deploy your units for defence. See [Move Your Forces](#) and [Seize an Objective](#) for details of these orders.

### Defend a Location

To have your troops defend a location from the enemy:

- ☞ Select the unit(s) you want to defend with
- ☞ Issue a Defend order on the location you want to defend.



Your troops will move through any waypoints you specify to the order location and will deploy there to repel enemy attacks.

You can specify various settings when issuing a Defend order. Your unit(s) will use the move speed and route type you set while they move to the order location; the formation type, aggro, ROF, frontage, depth and facing will all be used when they position themselves at their destination. The aggro setting largely determines the range at which your troops will engage the enemy; high aggro means they will start shooting early, low aggro means they will allow the enemy to move a lot closer before firing.

You can also specify various task options for your troops to follow while carrying out the order. For example, toggle Ambush to cause your troops to hold their fire until the enemy is within close range. See [Task Options](#) for more information.

You may want to also pay particular attention to formation type, frontage, and facing to ensure that your units are deployed to meet the most likely or most dangerous enemy attack, or are positioned in the best defensive terrain.

### Delay the Enemy Advance

In many scenarios, you will want to slow the advance of a stronger enemy but will not want to risk getting destroyed in a static defensive position. You can achieve this by using **Delay** – your units will defend briefly on successive **Blocking Positions** but will fall back under pressure. This forces the enemy to waste time attacking each blocking position, while your smaller defending force will (hopefully) slip away unharmed before the blow falls.

- ⊕ If your force does not include at least one Line unit ( infantry/armour/recon ), then the Delay order will be disabled for it.

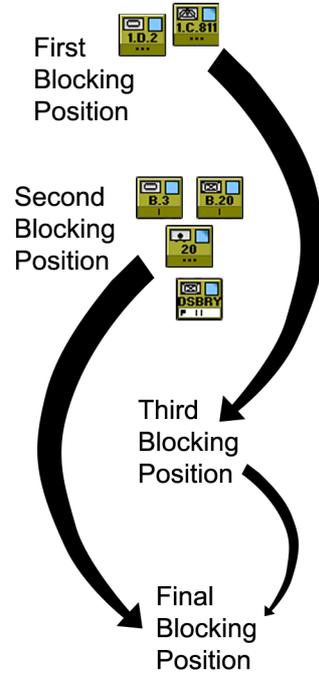
How the Delay works depends on the number of Line units the delaying force has. If only one line unit then the same units must defend and pull back from each successive blocking position. If two or more line units then the force will be divided into two blocking groups and these will leap-frog each other, such that the first will pull back from blocking position one and head for blocking position three, while the second group defends blocking position

2 and later heads back to position four. This is much more effective than with a single group, as it should give time for each group to deploy and get ready before the enemy is upon them.

To have a force delay the enemy:

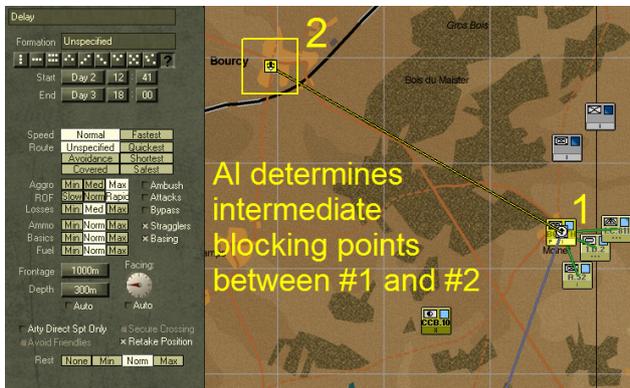
- ☞ Select your delaying force
- ☞ Click the Delay button on the Orders Dialog or press the Y key  

- ☞ Click on the map where you want the delaying force to start delaying from ( ie the first blocking location ) – waypoint 1.
- ☞ Click on the map where you want the delaying force to delay back to ( ie the final blocking location or ObjLoc ) – waypoint 2.



The force will divide into its groups ( if more than one line unit ). The first group will move to blocking position 1 at the first waypoint. The second group will move to blocking position 2 at a location to be determined by the AI between the first and second ( final ) waypoint.

The AI will determine how many intermediate blocking positions there should be and where they will be placed. Each blocking group will move to its designated blocking position and defend there. It will periodically assess its situation and if the enemy threat to the blocking position is deemed too great or the enemy is threatening the delay route back to the ObjLoc then it will abandon the blocking position and head back to its next designated blocking position. In the case where there is only one blocking group, this will be the very next blocking position. In the case where there are two blocking groups it will be the one after the next.



## COMMAND OPS 2

You can, however, override the AI selection of intermediate blocking positions. To specify where the intermediate blocking positions should be:

- ➔ After waypoint 1, click on the map and place successive waypoints at the desired locations, ending with the final blocking position or ObjLoc

Note that there must be at least three waypoints to override the AI.

If you want your blocking force to offer stiff resistance then:

- ➔ Increase the Losses setting and/or
- ➔ Increase the Aggro setting

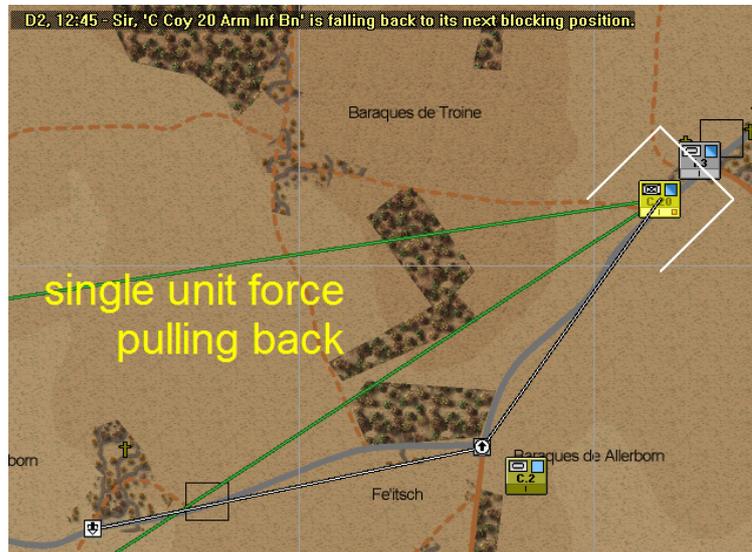
However, this may not be such a good idea as they may end up trapped rather than withdrawing to fight another day.

### An Alternative to Delay Orders

As an **alternative** to giving a Delay order you could manage things more directly. To do so:

- ➔ Order your blocking force to Defend at the initial blocking position
- ➔ Determine for yourself when the blocking position becomes untenable and order your blocking force to Withdraw to another good blocking position.

If you are playing with Orders Delays turned on, this method has the disadvantage that both the HQ commanding the delay force and its subordinates will incur a delay with each order you give. If you use the Delay order, the HQ commanding the delay force will only incur orders delay when you issue the order; after that, only the subordinate units will incur a delay each time the HQ orders them to fall back. See [Orders Delay](#) for more information.



## Withdraw to Safety

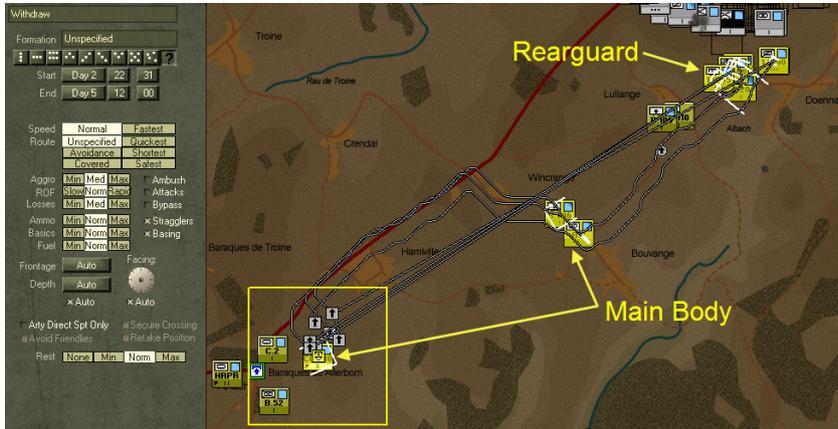
In some circumstances, discretion is the better part of valour. When your purpose is better served by running away to fight another day,

- ☞ Order your force to Withdraw to the desired destination ( ObjLoc )
- ☞ You can specify the withdrawal route using waypoints

A force ordered to withdraw will divide its force into two groups (provided there is at least two line units), a Rearguard group and a Main Body. The Rearguard group will conduct a delay from the force subject's current location to the ObjLoc. The Main Body will perform a Move task to the ObjLoc, using an avoidance route and with its Aggro level set to **Min** – it will try to keep going, regardless of what it encounters.



Any intermediate waypoints set will apply to the Main Body's withdrawal route. Intermediate blocking positions for the Rearguard will be determined by the AI.



## Engage the Enemy

It is possible to attack the enemy without assaulting him. Your units provide two ways of doing this: with direct fire, using the **Fire** order, and with indirect fire, using the **Bombard** order. You can also attack the enemy with **Airstrikes** that may be available from time to time in some scenarios.

When using these orders, you must bear in mind that they all target the **location** and not the specific enemy unit; if the enemy moves away, you must manually retarget the Fire and Bombard orders. You cannot retarget an airstrike once it has been ordered. One of the benefits of leaving artillery under AI control is that the AI will automatically adjust the bombard location.

### Fire at the Enemy

To have a unit remain in its present location and fire at the ObjLoc for 10 minutes.

- ☞ Order your force to Fire ( F key  ) at the desired location ( ObjLoc )

To extend the duration:

- ☞ Click on the minute / hour / day Duration buttons

To decrease the duration:

- ☞ Right-click on the minute / hour / day Duration buttons

The minute button adjusts in 5 minute increments. You cannot extend the duration beyond the time remaining in the scenario, nor can you decrease it to less than 1 minute. The duration displayed will decrease as time ticks by.

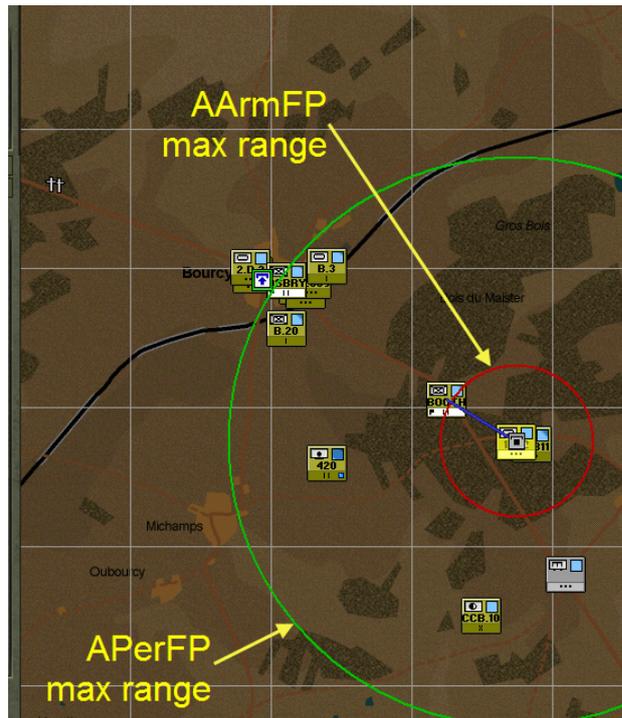
If no enemy units are visible, it will “area fire” into the location anyway. Any enemy units actually there but not visible to you will be affected, although the effectiveness of the fire will be reduced. Apart from causing personnel casualties and destroying weapons and vehicles, fire also suppresses enemy units, reducing the effectiveness of their return fire. It also lowers their morale and makes them tired.

To increase the Rate of Fire and hopefully the amount of damage inflicted:

- ☞ Select the Rapid rate of fire (ROF) button from the Edit Task dialog.

If you need to conserve ammo, then:

- ☞ Select the Slow rate of fire (ROF) button from the Edit Task dialog.



## GAME MANUAL

When you select the Fire order, range rings appear around the selected unit. The green ring represents anti-personnel firepower (**APerFP**) maximum range while the red ring represents anti-armour firepower (**AArmFP**) maximum range. You can display range rings permanently for all selected units ( regardless of whether you are ordering them to Fire ) by clicking the Range Rings button on the Display Toolbar. See [RangeRings](#).

Some things to keep in mind when using Fire orders:

- ⊕ A unit will only Fire on a location that it can see; use the LOS button on the Orders Dialog to check that the unit has a clear view of the target area
- ⊕ A unit will only fire those weapons that can reach the target location; if the target area is right on the edge of a weapon's range, only those weapons on the near edge of the unit will be able to fire
- ⊕ When the unit finishes firing, it will Defend in its position and wait for further orders

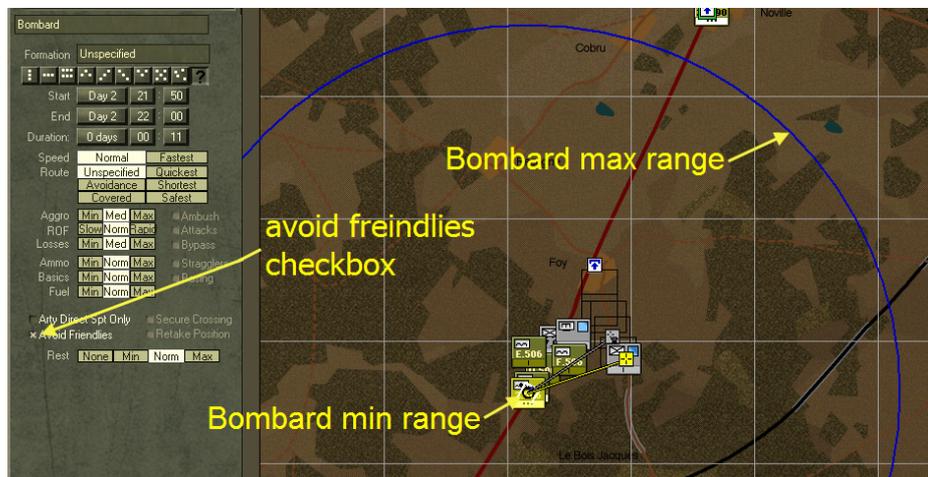
Because Fire is so sensitive to the range to target and LOS, it is only useful in some circumstances. At night or in close country it is not terribly useful; often it is more productive to issue a Defend order with a high Aggro setting and let your units engage the enemy on their own initiative.

## Bombard the Enemy

Bombard is very similar to Fire; the section above on adjusting duration and rates of fire applies to Bombard as well. Only units with a Bombard capability can Bombard. These are usually your mortar, rocket and artillery units. Note that Infantry Gun units cannot Bombard – they are direct fire weapons.

- ☞ Order your force to Bombard ( B key  ) at the desired location ( ObjLoc )

When you select the Bombard order, your unit(s) will show a blue maximum range ring and a black minimum range ring. An arty unit cannot bombard within its minimum range. Note in the above example that Mortar units have a very small minimum bombard range. Artillery units generally have larger minimum ranges.



- ⊕ You may need to zoom out to see the max range ring for the larger calibre guns.

## COMMAND OPS 2

Bombardment is automatically area fire. In most cases it will be indirect, in that the firer does not need to be able to see the target. However, if no friendly unit can see the target location, the effectiveness will be reduced.

There are some circumstances in which your unit may not bombard:

- ⊕ If the bombard target is too close to friendly units and the 'avoid freindlies' checkbox is checked, the unit will not fire (this includes if friendly units move too close during the bombardment)

You will see a warning message to that effect in the Edit Task dialog.

If this happens try moving the ObjLoc further away. Sometimes this will mean that only part of the bombardment zone will overlap the intended target, but sometimes it's better to get something than nothing at all. Otherwise uncheck the 'avoid freindlies' checkbox and bombard indiscriminantly.

- ⊕ If the bombarding unit is Undeployed or Taking Cover, it will not be able to fire until it is at least Deployed ( see [Deployment](#) )

On completion of a Bombard task your artillery unit will revert to an In-Situ Defend task (i.e. defend where it is).

As an alternative to giving bombard orders, units with a bombard capability that are Defending automatically provide On Call support – see [Provide On Call Support](#).

Bombardments can be very effective at suppressing enemy units and breaking up enemy attacks.

When you order a force to attack, the HQ will often order its artillery units to defend somewhere to the rear of the FUP. When the assault goes in and the assaulting units encounter the enemy, they can automatically call for the arty units to bombard the enemy. See [Seize an Objective](#) for more information.

The other thing to keep in mind is that artillery units run out of ammo pretty quickly. The average unit would have enough ammo to fire for 45 minutes at normal rate of fire per day – that's only 4.5 normal length bombardments.



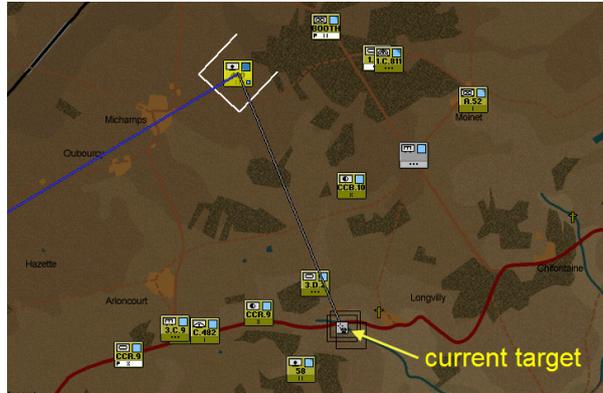
## Provide On Call Support

Normally, when an artillery unit is deployed and has a Defend task, other friendly forces can request a bombardment from that unit. These bombardments are called **On Call Support**. To have an artillery unit provide On Call support:

- ☞ Order a bombard-capable unit to Defend or Move

The unit will Move to the order location and deploy. Thereafter it will be available to respond to requests from other friendly units to provide fire support against enemy threats. Subject to ammunition constraints and the priority of the enemy threat, the arty unit will bombard the enemy threat for approximately 5 minutes. It will then revert to defending until the next request comes in.

If you select a defending arty unit, you will see a line drawn from its present location to the target location of its last On Call support mission (if any).



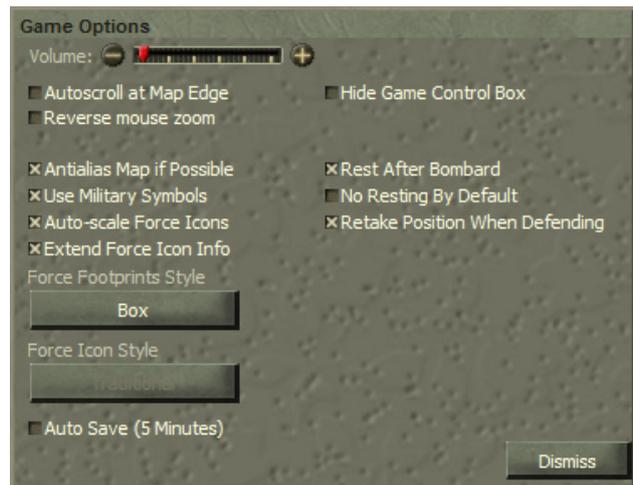
The rate of fire ( ROF ) used for On Call bombardments varies. If the target is more than 3000m away from the sighter, then ROF will be slow. If the range is under 1000m and the enemy target is assaulting or reorging then it will be rapid. Otherwise it will be normal.

- ⊕ If you want to control the Rate of Fire, then issue a Bombard order yourself

After an artillery unit finishes a Bombard order, it will normally adopt a Defend task and will be available for On Call support.

If you do not want an artillery unit to provide On Call support ( ie save ammo ):

- ☞ Give them a Rest order, or
- ☞ Delete their current order, or
- ☞ Check Rest After Bombard in the Options dialog and then issue a new Bombard or a new Defend in-situ order – ( at the end of the Bombard order the unit will Rest )



## COMMAND OPS 2

### Manage Fire Support

One of the most common tasks you will want to do is to quickly provide fire support against an enemy threat. You can locate your artillery units on the map, select them, and then order them to Bombard. However, trying to find them, especially when the map is zoomed right in, can take time. To shortcut this process:

- ☞ Open the FireSpt Dialog

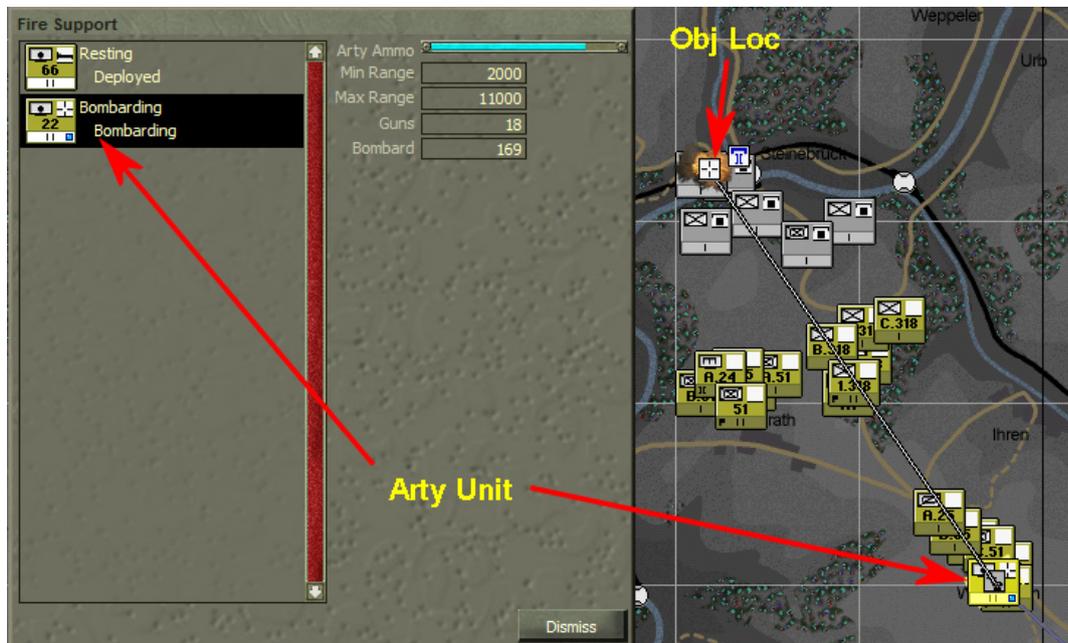
This shows a list of all directly subordinated arty units – i.e. those units that can bombard that you have given a direct order to. From here you can quickly review the status of your arty units using the function keys ( for example

F7 key , used to show arty ammo level ). Selecting a unit in the list displays details on its ammo, range, number of guns and bombard firepower value. To order a unit to Bombard using the FireSpt Tab:

- ☞ Select the unit from the list in the FireSpt dialog

- ☞ Select the Bombard tool from the Orders dialog or Press the B key 

- ☞ Click on the map location you want to bombard.



## Target an Airstrike

You can only launch an airstrike when there are strike aircraft overhead. A message will appear at the top of the Battlemat advising you that you have an airstrike available. Airstrikes appear on a random basis and stay overhead on patrol for about 30 minutes, after which they have to fly back to base. So if you don't use it, you lose it!



Your available airstrikes can stack up – a number will be displayed on the Airstrike button showing how many are available.

When you get an airstrike, target it on the enemy:

- ☞ Select the Airstrike button on the Orders Tab, or Press the S key 

The mouse pointer changes to the cross-hair as you move it over the Battlemat.

- ☞ Click on the map location you wish to target – preferably where there is an enemy unit!

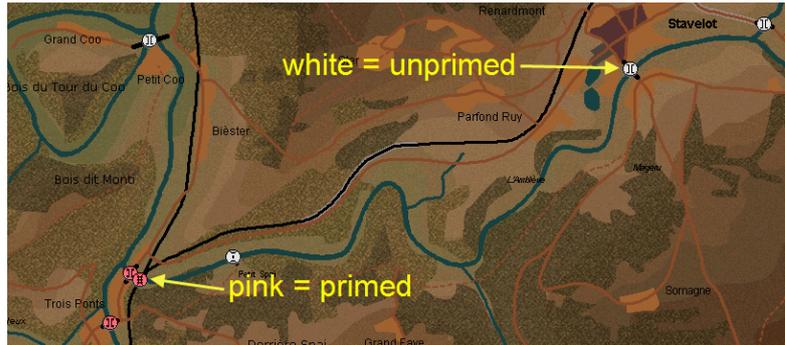
Within 5 minutes you should see and hear the airstrike going in. See Airstrikes for more details.

- ☉ Use the F4 ( Combat Power ) key  to help select a powerful enemy target.
- ☉ When targeting a moving enemy, check their Facing ( F5 )  and lead the target – ie select a location in front of them.
- ☉ Airstrikes can damage friendly units so be careful where you target them!

# COMMAND OPS 2

## Secure, Deny and Construct Bridges

Crossings include all types of bridges, fords and ferries as well as those points along a river deemed suitable for ferrying or building a bridge even though none are actually present. In some scenarios they represent tunnels. For large rivers, crossings represent the only points at which units can move from one side to the other and hence become vital to control.



In general no side ever blew up a crossing unless threatened by enemy units – you never know when you may want to use the crossing to go the other way. Moreover, before you can blow a bridge, it must first be **primed** with explosives – this can take some time and requires specialised engineers.

- ⊕ Orders relating to crossings only apply to the single closest crossing to the order location – if you want to cover two crossings, you need to issue separate orders to different forces for each

### Deny Crossing

In CO: BFTB you cannot order your units directly to blow a bridge. Instead you are limited to ordering them to **Deny** the crossing:

- ☞ Select your force (preferably including an engineer unit)
- ☞ Issue a Deny Crossing order with the order location within 500m of the crossing.



Forces so ordered will move to the crossing and defend it. If the crossing is not completely primed, and the force includes an engineer unit within 500m of the crossing, the force will prime the crossing. This may take some time. As a rough rule, a 120-man engineer unit will take approximately the following times to prime a crossing:

The colour of the crossing icon will change to pink when it is primed enough to enable a demolition attempt with a minimum probability of success. Leaving the engineer unit there will continue to improve the probability.

Table 1 – Prime Crossing Times

Crossing Type	Time to Prime
Ferry or Ford	2 hours
Light Road Bridge	4 hours
Medium Road Bridge	plus 8 hours
Heavy Road Bridge	plus 16 hours
Rail Bridge	plus 16 hours

## GAME MANUAL

To find out how well-primed a crossing is:

- ☞ Select the crossing icon
- ☞ Right click to bring up the context menu and select Crossing Data

This will open the Crossing Point dialog.

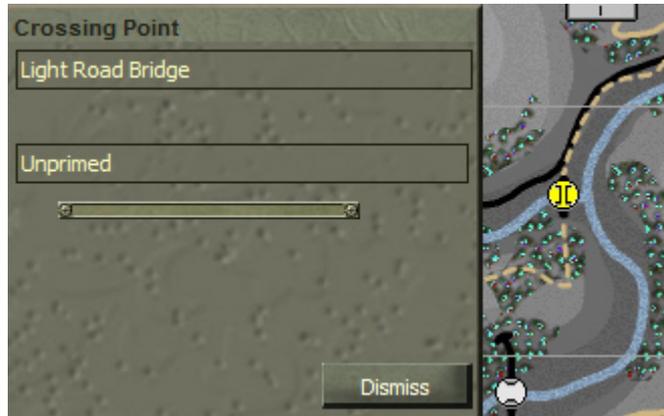
- ⊕ Only Engineer units can prime a crossing

If threatened by superior enemy forces, units ordered to Deny will make an attempt to blow the bridge. They get one crack at it. If successful, up it goes in smoke. You will receive a “flash” priority message. Note that the game may pause for a few seconds while the Terrain Tables are recalculated.

If the attempt fails, the crossing will be marked as un-primed and will need to be primed again before another attempt can be made. The

probability of successfully blowing the crossing is reduced if the nearest defending unit (within 500m) is suppressed by enemy fire, has poor combat effectiveness (fatigue, morale, cohesion), or is a static unit. The probability is increased if the nearest unit is an engineer, is out of LOS to enemy units - ie behind a hill, dug-in in a town or at night. While you do not need to keep an engineer at the crossing after its primed to blow it, they do improve the chances of blowing it.

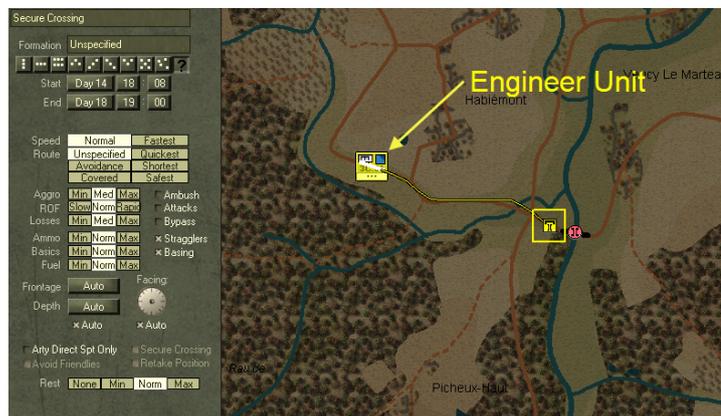
- ⊕ To maximise the probability of blowing a crossing, keep nearby enemy units suppressed.



## Secure Crossing

If you have to secure a crossing, whether it is primed or not:

- ☞ Select your force ( preferably including an engineer unit )
- ☞ Issue a Secure Crossing order with the order location within 500m of the crossing.



## COMMAND OPS 2

A force ordered to secure a crossing will move to the crossing. As soon as they are within close range of the crossing they will attempt to un-prime the crossing – i.e. cut the wires and remove the explosives. It takes a lot less time to un-prime than to prime (roughly a third).

The probability of successfully un-priming is increased if the securing force has an engineer unit within 500m of the crossing. It is decreased if the enemy has an engineer unit within 500m. It is also decreased if the closest securing unit is suppressed or has poor fatigue, morale or cohesion.



⊕ Bombard the nearest enemy unit to the crossing

Once the crossing has been un-primed the colour of its icon will change to light grey. The securing force will then defend the crossing. If enemy units try and prime the crossing, the securing force will endeavour to un-prime it again – so remember to include an engineer, and keep the closest enemy units suppressed.

If the crossing is well defended you may need

to launch an attack to gain control of it. When doing so you can have your attacking force attempt to un-prime the crossing:



☞ Check the Secure Crossing checkbox in the Edit Task dialog

This will ensure that your attack units, especially any engineers assigned, will attempt to un-prime the crossing.

If your objectives for a scenario include securing a crossing, there are some particular conditions you will have to meet in order to get the points for that objective. See [Secure Crossing Objectives](#) for more information.

## Construct Bridge

If the enemy succeeds in blowing a crossing that you need, you may be able to recover the situation by constructing a bridge to replace the one destroyed. To do so:

- ☞ Select a force including at least one Bridging or Engineer unit with a Bridge Building Capacity of at least one
- ☞ Issue a Construct Bridge order ( V key  ) with the order location within 500m of the crossing.

A force ordered to construct a bridge will move to the order location and then construct a bridge. If there is already a bridge there it will upgrade it if possible (for example, from a light to a medium, or from a medium to a heavy road bridge).

For a bridge to be constructed or upgraded the force must have at least one Bridging or Engineer unit with a bridge building capacity of one or more. This is indicated on the unit's icon by the bridge symbol.

The amount of capacity can be viewed in the unit's Equipment list ( E&S Tab ). If the unit has a bridge building capacity it will be at the top of the Equipment list.

To find units with a bridging capacity quickly:

- ☞ Select Bridge Units from the Unit Filter button of the Display Toolbar or hit the 0 key .

It takes some time to construct a bridge. The time required varies according to the type of bridge being built (longer for medium and even longer for heavy bridges), the length of the bridge, the number of available engineers (the more the better), their current effectiveness (fatigue / cohesion / training / experience) and level of suppression. As a rough guide a full strength Bridge Company plus a full strength Eng Company will take approx the following times to construct a 100m-long bridge:

Adding extra engineers reduces these times on a proportional basis. However, because of the rather constricted space available there is a maximum number of engineer personnel that can assist, as follows:



### Bridging Capacity



Table 2 – Construct Crossing Times

Crossing Type	Time to Construct
Light Road Bridge	10 hours
Medium Road Bridge	plus 20 hours
Heavy Road Bridge	plus 40 hours

Table 3 – Crossing Construction Personnel Cap

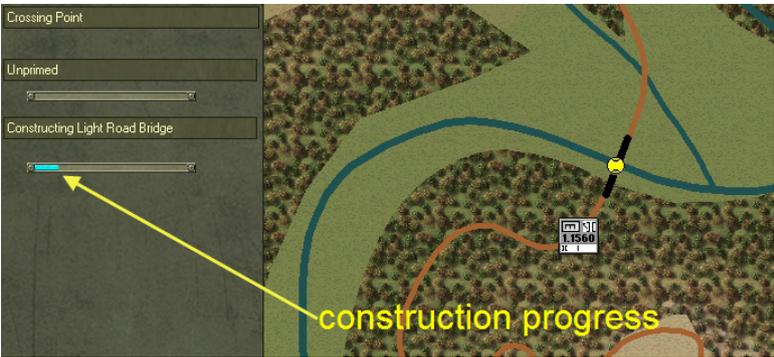
Crossing Type	Personnel Cap
Light Road Bridge	600 men
Medium Road Bridge	900 men
Heavy Road Bridge	1200 men

# COMMAND OPS 2

To review progress:

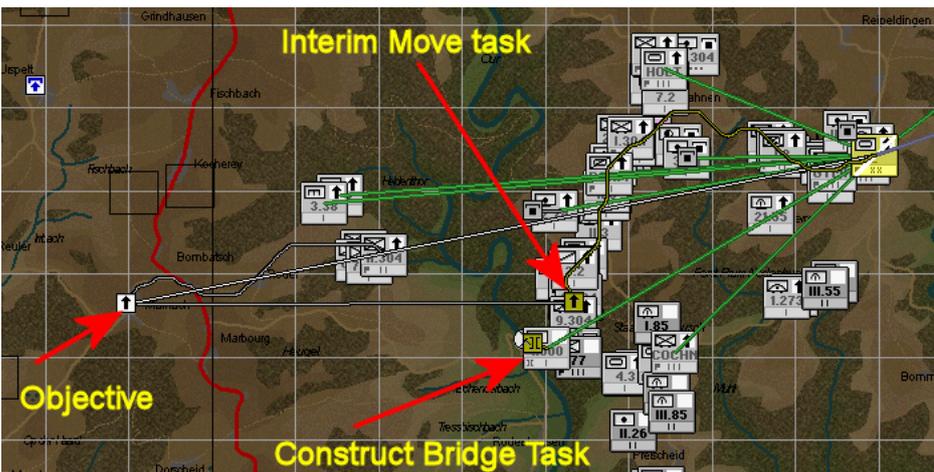
- ☞ Select the crossing icon
- ☞ Open the Crossing Point dialog

The progress bar will fill from the left as the bridge is constructed. Until the bridge is completed it will be ignored in all planning done by the AI. So if you order a force to Move prior to the bridge being completed, it will ignore the crossing when determining its route. To take advantage of the new crossing, you will need to re-issue orders or just move a waypoint) after the bridge is complete.



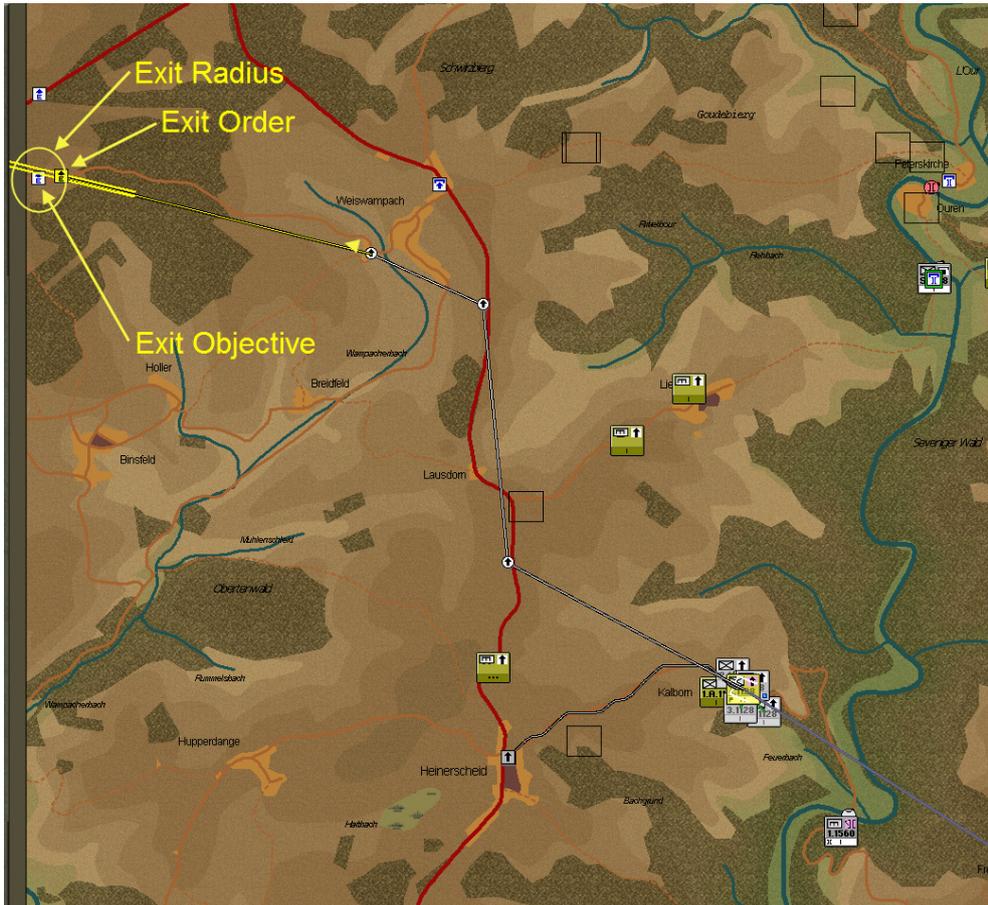
## Automated Bridge Building

If you order a force to Move to a location and the only route there is via an unbridged crossing and the force has a bridging capacity, then the AI will automatically schedule a construct bridge task within the Move plan. It will do so for each river that needs to be bridged, subject to available bridge capacity. For each bridge that needs to be built it will create an Interim Move task, followed by a Construct Bridge task and a concurrent Interim Defend tasks for those units that cannot assist directly with the construction. It may create additional interim Move tasks if it decides to Move units independently to the crossing. Once the last bridge has been built it will create a Final move task to the original objective.



## Exit Your Units Off the Map

If you have an Exit Objective, you will be able to order your units to leave the map in order to achieve that objective. To have your troops leave the map:



☞ Order your units to Exit ( E key  ), with the order location inside the radius of the Exit Objective

Your units will Move to the order location, following any waypoints you have specified. Artillery units will not attempt to establish firebases but will move to the exit point just like the other units. As each unit arrives at the Exit Objective, it will disappear from the map. Units with subordinates will wait at the order location until all their subordinates have disappeared before leaving themselves.

⊕ If one or more subordinates cannot make it then detach them to enable the boss to exit.

⊕ You cannot recall units that have left the map; once they are gone, they are gone!

## Resupply Your Units

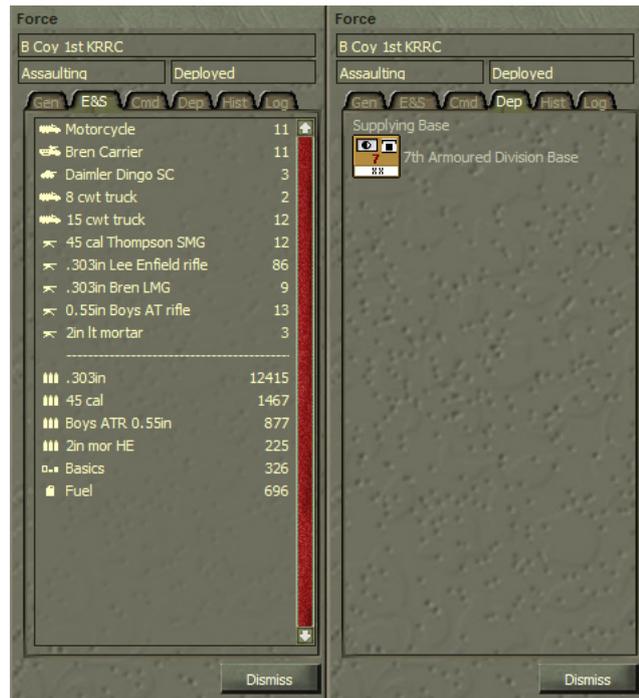
Units are resupplied through the supply chain on a push-pull basis – ie supplies are pushed onto the map to the various Bases/Depots but only delivered from these to their drawing units as requested. The whole resupply process is managed by the AI. You cannot directly manage it. For a detailed explanation of what goes on see [Resupply](#).

However, you can assess the resupply status of your Bases/Depots and units and adjust your orders to take account of their status. Eg. you can withdraw units whose supply lines are cut or threatened or you can order reinforcements to clear a path to them. So the first thing is to be aware of the supply status of your forces.

### Review Unit Supplies

To see how much supplies a unit has:

- ☞ Select the Unit
- ☞ Open its Force Data dialog
- ☞ Select the Equipment and Supplies ( E&S ) tab from the Force Data ( FD ) dialog



### Determine Supplying Base

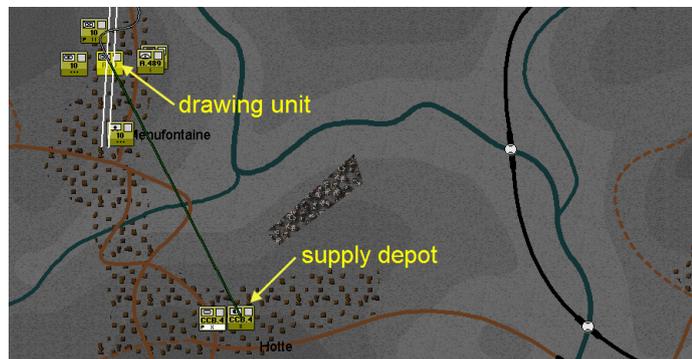
To determine which Base/Depot is supplying a unit:

- ☞ Select the Unit
- ☞ Open its Force Data dialog
- ☞ Select the Depot ( Dep ) tab from the FD dialog

Alternatively:

- ☞ Set the Display Lines button of the Display Toolbar to show Sup ( supply lines )
- ☞ Select the Unit.

A line will be drawn from the drawing unit to its supplying base/depot.



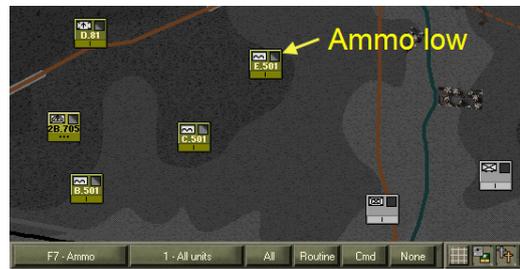
## Review Unit Supply and Supply Line Status

To see the status of a unit's supply across the various categories ( Ammo, Arty Ammo, Basics and Fuel ):

- Click the Unit Info button of the Display Toolbar until it shows the desired category or press F7  repeatedly to cycle between them

The status indicator is displayed in the Unit Info Box of all units. In general, the darker the colour is the worse the status.

While all units require Ammo and Basics, not all require Arty Ammo or Fuel. Where a unit doesn't, their Info Box will not be displayed



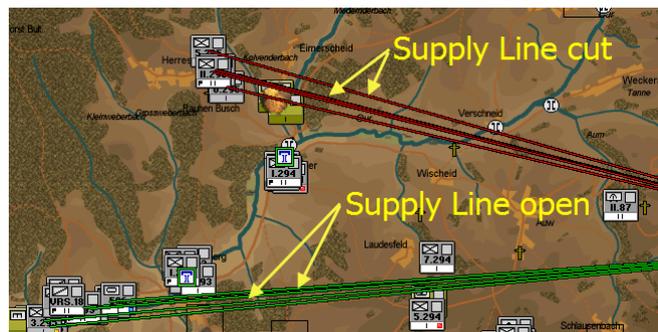
The final info displayed using F7 key/unit info button is supply line status. Here red indicates the supply line is cut, orange that is threatened and green that it is open.

- Unlike all other Unit Info ( and unlike the in-game resupply messages ), Supply Line Status is not "current" but displays the last known data.

It is based on the last time the unit requested supplies and/or a supply column was dispatched. This may be up to 24 hours old and may not reflect the current situation – eg it may show that the route is cut because previously the unit was surrounded when resupply was last attempted, but now the enemy has withdrawn.

Another method for reviewing supply line status is to display the supply lines. To do so:

- Set the Display Lines button on the Display Toolbar to "Sup"
- Select the desired unit



## COMMAND OPS 2

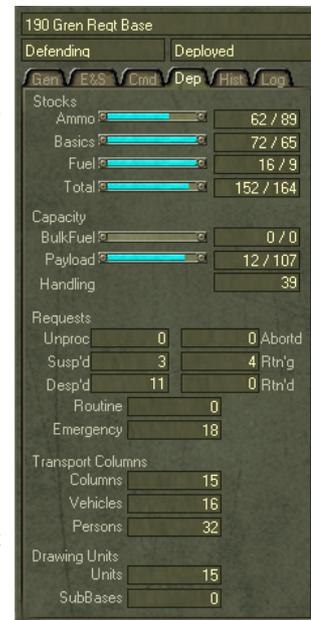


This will draw supply lines from the selected unit back up to its supplying base/depot or SEP and down to its drawing units. The latter only applies when a Base/Depot is selected. Again, red means the line is cut, orange threatened and green open.

## Review Depot Data

To see how much stock, transport capacity, resupply requests, transport columns and drawing units a Base has:

- ☞ Select the Base
- ☞ Select the Depot ( DEP ) tab from the sidebar



## See How Much Stock is on hand and how much is required

The numbers displayed are tones currently on hand / stock requirement. Stock arrives from off map, is transported and stored in Depots in generic quantities. It is converted to actual rounds of ammo for instance when it is delivered to the individual unit.

Stock requirement is the amount of supplies required by the drawing units to meet the desired stock level. For Brigade Bases this represents around four days supplies. The standard stock levels for the various force levels are:

Table 4 – Standard Stock Levels

Unit Size	Stock Level (in days)
Army	20
Corps	10
Division	7
Brigade	4
Battalion	2
Company	2
Platoon	1
Section	1

## See How Much Transport Capacity is used and available

The numbers displayed are tonnes currently used / available. Capacity being used indicates that supply columns are out delivering supplies or returning to Base from making deliveries. Most transport capacity is in terms of general payload – ie trucks that can deliver any form of packaged or containerized cargo. Bulk Fuel represents fuel tankers.

Handling represents how many tonnes of cargo can be loaded/unloaded per hour. Handling is based on the personnel strength and equipment of the Depot. If this is less than the available transport capacity it will

take more than one hour to load/unload all the transport vehicles.

## See How Many Outstanding Requests the Depot is Processing

Requests are listed according to their status. The numbers displayed are individual requests from individual units and sub-bases. Unprocessed requests indicate the number waiting in the queue – ie the backlog. Suspended requests are those from unreachable units – eg whose supply line is cut. Despatched are those where a supply column has been sent. Aborted are those where the supply column has aborted its mission, usually because of the enemy threat. Returning are those where the supply column has delivered its supplies and is now returning to base. Returned are those where the supply column has just returned and is being reabsorbed back into the Depot.

Requests are also listed according to their priority, routine or emergency. Routine requests are generated during the Resupply Determination event that normally occurs twice per day at 0600 and 1800 hours. In some scenarios, a

## COMMAND OPS 2

side may be restricted to just one resupply determination event at 1800. In other words it is restricted to night time resupply, mainly to avoid interdiction by enemy aircraft.

Emergency requests are generated whenever a unit's supply level runs below its emergency resupply threshold set at 50% of normal requirements for ammo and fuel and 33% for basics. So if a unit is heavily engaged and its ammunition runs very low it will put in an emergency request. These receive priority for processing.

### See How Many Transport Columns are currently out

These numbers detail how many columns are currently out and the total number of vehicles and personnel committed to the columns.

### See How Many Units/SubBases are Drawing on this Depot

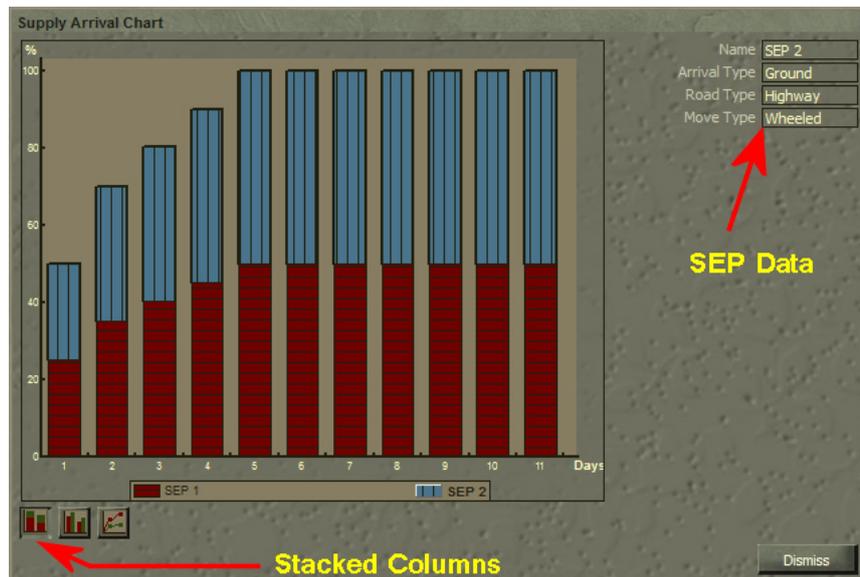
These detail how many individual units and subBases draw directly on this Depot.

## Review Supply Arrival Schedule

The amount of supplies arriving each day varies according to the supply arrival schedule specified by the scenario designer in the ScenMaker application. The schedule is expressed in terms of a percentage of stock requirements for the side as a whole. It also specifies what proportion of this total percentage goes to which of the active Supply Entry Points (SEPs). To review the schedule:

☞ Open the Supply (SUP) dialog

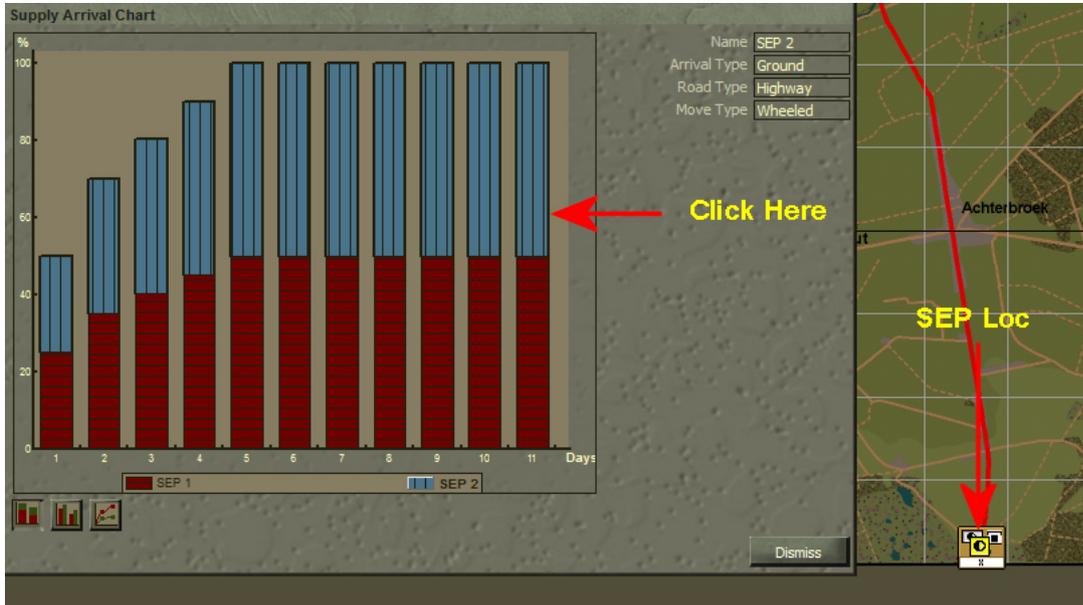
In this example ( using the Stacked Column view ) only 50% of the side's stock requirements are going to be met on Day 1. This climbs to 100% by Day 5. The bar graph also indicates that SEP2 will receive roughly 50% of the stocks arriving on Day 1.



# GAME MANUAL

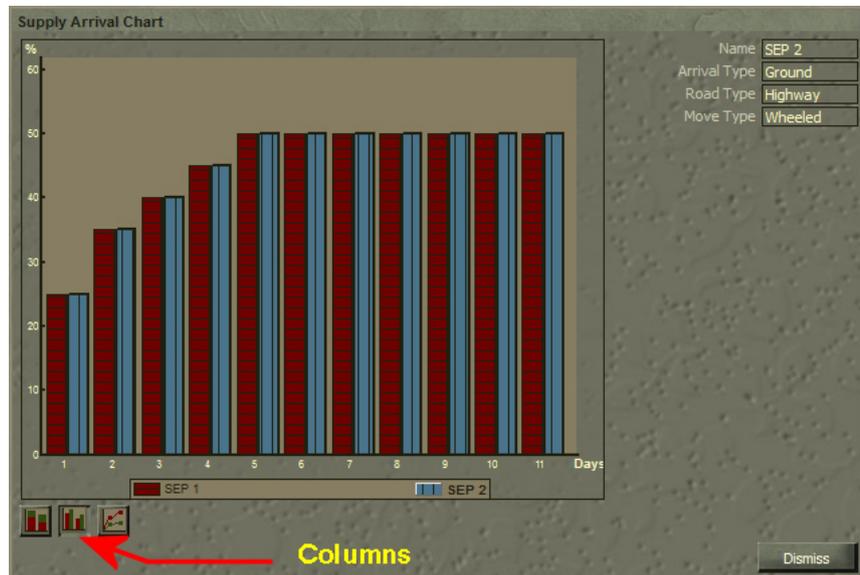
To see details of individual SEPs, including where they are located on the map:

- ☞ Click on the SEP icon in the Key or
- ☞ Click on any of their coloured bar sections in any of the day columns



**Arrival Type** can be Ground ( by truck, wagon or manpack ), Airdrop ( parachute ), Airfield ( aircraft ). Supplies that arrive via Ground, simply transit through the SEP location on their way to the drawing Bases/Depots. The transport capacity for this is provided from off map at no cost to the on-map Bases/Depots. Supplies arriving via Airdrop or Airfield are dumped at the SEP location and have to be transported by the drawing Bases/Depots – to move them requires the commitment of transport capacity from on-map Bases.

**Road Type** is the type of road used off-map to get to the SEP. The better this is the sooner the supplies start arriving. **Move Type** is the means by which the supplies arrive – ie wheeled, wagon or foot for Ground and air for Airdrop or Airfield. Again this affects the speed of arrival.

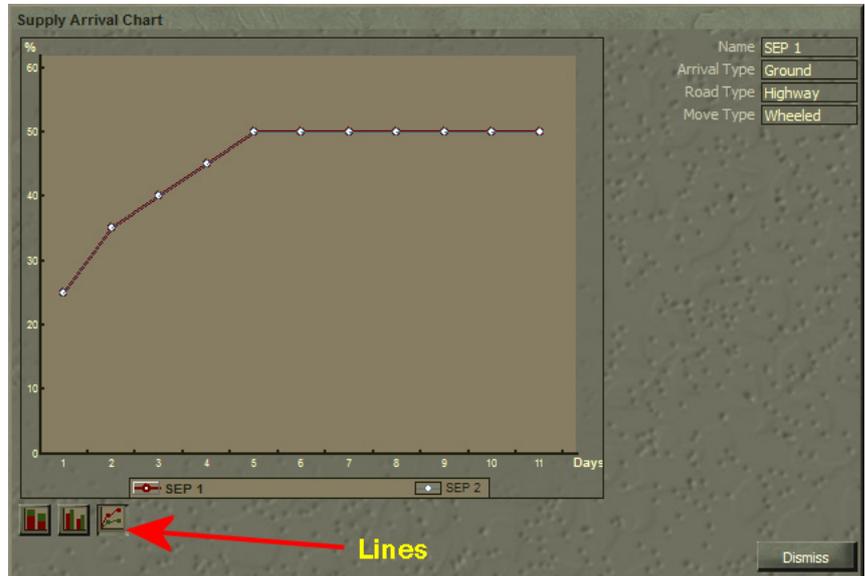


## COMMAND OPS 2

To view the schedule using a different graph type ( stacked columns, columns or Lines ):

☞ Click on the desired graph type buttons

The Columns graph is useful to see the individual values of each SEP for each day. The Lines graph is good for discerning trends. Note in this example that the line for SEP1 is masked by the lines for SEP2 as this has the same values. As with the Stacked Columns graph, you can see the data for a particular SEP by clicking on its key symbol or on its column or line.



### Get Your Units Back in Supply

Units that have their supply lines cut will not receive any resupply. In the interim they will continue to draw down their existing stocks. Normally you could expect a force cut off from its Base to last around 48 hours.

Once their existing stocks are used up, they will be in peril. Without ammo they will not be able to defend themselves. Without fuel motorised units will not be able to move and without Basics they will fatigue very quickly and recover from fatigue very slowly. Without Basics their morale will also start to drop. They will become very ineffective and will become increasingly more likely to surrender to the enemy.

So it's important to try and get your units back in supply before these dire effects take place. The best option for doing so will depend on the situation. Remember that a supply line can be cut by effective enemy fire. You may need to clear a wide area to make your supply line safe. To re-establish a line of supply:

- ☞ Withdraw to friendly controlled territory or
- ☞ Send a relieving force to clear a supply line to the cut off force or
- ☞ Send a small group from the cut off force back towards the supplying base with a view to determine where the enemy is cutting the line. Then if this is insufficient by itself, commit other forces to clear the way or
- ☞ If the Base itself is threatened ( you will receive a message ), move the Base to a safer location.

Note that for a Base to dispatch supplies it must be deployed ( ie not moving ). It takes considerable time to redeploy a Base. It may be better to clear the area around the Base of enemy rather than moving the Base. Note that supply lines are not "all or nothing". They can be partially blocked and you will get messages to that effect.

## Rest and Wake-up Your Units

Whenever units are stationary and either resting, defending or waiting, their fatigue will reduce. Resting troops recover fastest. In cold weather your troops will recover faster in urban terrain. Resting units are not so good in a fire fight, so only order units to Rest if they are unlikely to be involved in serious combat. To have your units rest in place:

- ☞ Order your tired units to Rest.

The default formation type for Rest is In-Situ, which means they will rest where they are when they receive the order. If you want them to Move to another location and rest there, then:

- ☞ Order your tired units to Defend or Move in the desired location, or
- ☞ Order your tired units to Rest in the desired location (recommended), and set the Formation Type to something other than In-Situ

If units become too tired, they may ignore any order you have given them and rest instead, where they are. Well-trained and fit units are less likely to do this.

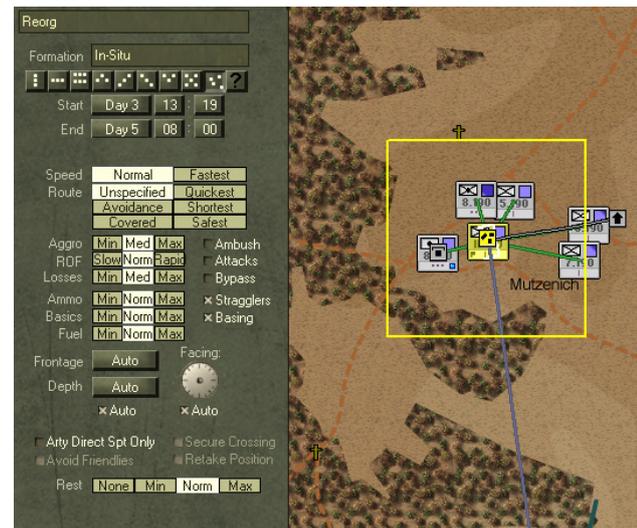
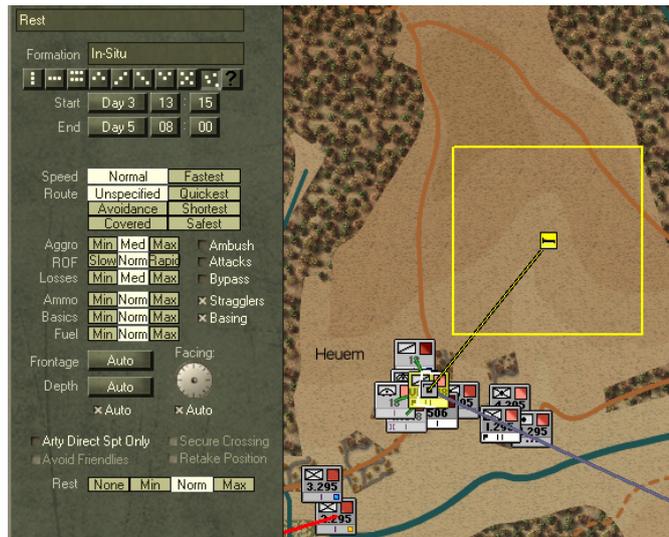
To have your units wake up from resting:

- ☞ Order them to do anything other than Rest

However, if they went to Rest on their own initiative and they are still exhausted, they may again exercise their initiative and Rest instead. Sometimes, no amount of coercion will wake a tired soldier.

## Recover Cohesion

Whenever units are stationary and either reorganising, defending, or waiting, they will recover cohesion – i.e. become better organised. Reorganising troops recover fastest. However, they are vulnerable to enemy fire. The default formation type for Reorg is In-Situ, which means they do so where they are. To have your units recover cohesion:



- ☞ Order your disorganised units to Reorg (recommended), or
- ☞ Order your disorganised units to Defend, or
- ☞ Delete their current order and they will Defend

Note that reorganising units recover cohesion twice as fast as defending units.

If units become too disorganised, they may ignore any order you have given them and reorg instead, where they are. Well-trained and well-led units are less likely to do this. Invariably, reinforcements arriving by parachute or glider will automatically Reorg.

You can order your units to Reorg in a particular location. To do so:

- ☞ Order your units to Reorg in the desired location and set a Formation Type other than In-Situ or Unspecified

They will first move to the location specified and then reorg.

Reorganising units are very vulnerable to bombardment or attack.

## Deploy, Dig-In, Entrench, and Fortify Your Units

Deployment status is an important factor in your units' combat effectiveness – see **Deployment**. To improve the deployment status of your units:

- ☞ Order your units to Move or Defend
- ☞ Leave them alone.

Once units arrive at the order location they will deploy and start to dig in. If there are fortifications (a special terrain feature) or existing entrenchments (dug by other units) nearby, they will more than likely deploy into these, unless you have specified an In-Situ formation – in which case they will stay where they are. Note that existing entrenchments are NOT displayed on the map.

After a time the deployment status of the units will change from **Taking Cover** to **Deployed** (10 to 60 minutes), to **Dug-In** (around 2 hours) and finally to **Entrenched** (around 2 days). Units can only become **Fortified** if they are on Fort terrain – they cannot build a new fort during the game.

If other units have previously dug-in or entrenched at the location or there is a fort there, then the duration required to change deployment status to dug-in, entrenched or fortified is quartered.

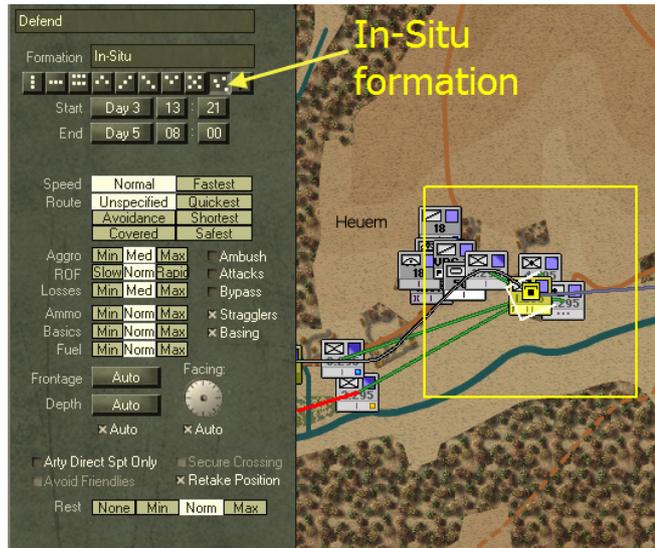
## Stop Your Units from Moving

If you want your units to halt in place and not move any more:

- ☞ Pause the game
- ☞ Give your units a static order like Defend, Secure Crossing, or Deny Crossing
- ☞ Select In-Situ Formation Type
- ☞ Run the game again (i.e. select one of the play buttons).

Alternatively:

- ☞ You can also set the Formation Type for a unit already on the move to In-Situ, or
- ☞ Delete their current order and they will wait where they are until they receive another order



Note that units with Defend In-Situ orders that retreat will not attempt to reoccupy their original location. If you want them to do so, don't set their formation type to In-Situ. If you are playing with orders delay, units will not halt until they receive the order to adopt In-Situ formation.

## Prevent Stationary Units from Changing Facing

If you do not specify a facing for a static order like Defend, the force may from time to time change facing towards the biggest enemy threat. To prevent this happening:

- ☞ Set the Facing of your static order

## COMMAND OPS 2

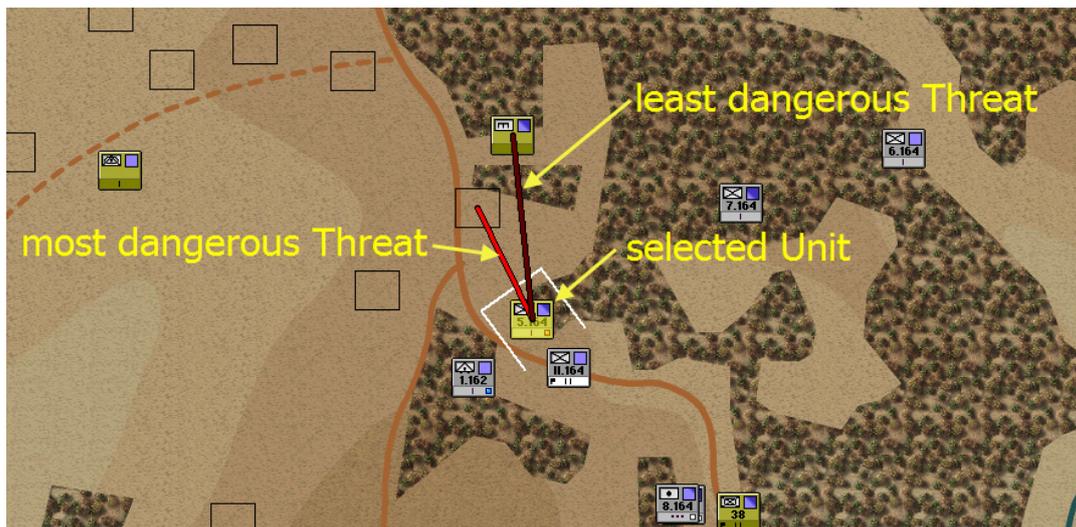
### Check for Enemy Threats

To determine what enemy threats a unit can see:

- ☞ Click the Threats button on the Orders Tab, or
- ☞ Press the T key 
- ☞ Select the desired friendly unit.



The brighter the red line, the greater the perceived threat. Remember that this is based on intel reports. It is NOT a measure of who the selected unit is firing at. This function is called **TLOS** or **Threat Line Of Sight**.



## Work with Orders Delay

If you are playing with Orders Delay turned on ( see [Set Scenario Options](#) ), there will usually be some time between when you issue an order and when your units carry it out. For information about the factors affecting the delay, see [Orders Delay](#). Playing effectively with Orders Delay faces you with a different set of challenges. It's all about anticipating the flow of battle, pre-empting your enemy, and deciding when to change plans and when to forge ahead regardless.

Successful play with Orders Delay is all about dictating the course of battle. If you can force the enemy to react to you – rather than the other way around – he will always be an hour or two behind as his units wait for their orders to arrive. You, on the other hand, by following a plan, anticipating events, and issuing orders at the best time, will be able to seize and retain the initiative!

### How Orders Delay is Calculated

Many factors go into calculating orders delay. The base determinant is force size. As you can see from the adjacent table a Division HQ takes one hour to process orders. But there are always at least two levels involved - the sender and the receiver. At each level the order delay duration is determined by taking two thirds of the senders delay and one third of the receiver's delay. Eg from motorised Div to motorised Bde it would be 53 (  $60 * \frac{2}{3} + 40 / 3$  ). In the case of a mot Div HQ issuing orders down the chain there will typically be three layers - Div to Bde, Bde to Bn and Bn to Coy. So on average it would take a motorised Division 117 minutes (  $60 * \frac{2}{3} + 40 + 30 + 20 / 3$  ) or roughly 2 hours. For a non-motorised Div it would take nearly 3 hours.

Table 5 - Standard Orders Delay

Force Size	Mot Duration	Non-Mot Duration
Army Group	150	200
Army	120	160
Corps	80	110
Division	60	80
Bde/Regt	40	60
Bn	30	40
Company	20	30
Platoon	20	30
Squad/Section	20	30

However, this is further modified by the commander efficiency and staff quality at each level. These can vary the times by +/-25% at each level. Efficient commanders and good quality staffs can reduce the times by up to 25%, while poor ones can increase it by up to 25%. If either of the sender or receiver are commanding more units than they can normally handle - ie their command load exceeds their command capacity - then they will more likely be at the -25% end.

For a full discussion see [Orders Delay](#).

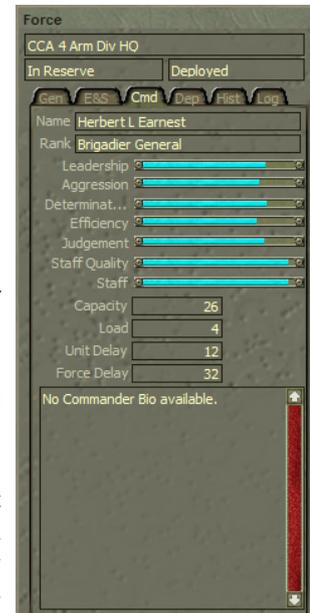
### Plan When to Issue Orders

The key to playing effectively with Orders Delay is deciding when to issue your orders. To have a force start carrying out an order at a particular time, you will need to issue the order early enough for them to receive it. To have them complete a task at a particular time, you will need to issue the order early enough for them to both receive it *and* carry it out!

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To find out how long it will take your units to receive and process your orders:

- ☞ Select the HQ commanding the force you want to issue orders to
- ☞ Open its Force Data dialog
- ☞ Select the Cmdr Tab on the Sidebar
- ☞ The Force Delay field tells you roughly how long it will take, in minutes, for all the units commanded by that HQ to receive an order and start moving.
  - ⊕ When you form a new battlegroup the Force Delay value will not be valid until the boss of the battlegroup has processed its orders.



Learning how long it will take for units to carry out an order to completion is a bit trickier. In part, it comes from experience – practice issuing orders and noting down the time at which they were received, how long it took your units to move and how long it took them to finish the order. You can use a couple of very rough rules-of-thumb to estimate movement speeds for units moving in formation (these depend on the Mobility Type of your forces – see [Mixed-Mode Movement](#)):

- ⊕ Motorised Units – average normal speed is 12 km/h on good roads
- ⊕ Non-Motorised ( Foot ) Units – average normal speed is 3 km/h on good roads

Tired units move slower. Contact with the enemy will make moves a lot slower!

To see how to coordinate orders from different HQ's so that they execute at similar times see [Set Start, End, and Assault At times](#).

- ⊕ Note that units routing or rout recovering do not process orders.

Learning to work with order delays often means issuing new orders before the current set have fully completed. For example, an attack has been largely successful and is in the final reorg or the exploit beyond the objective phase, you might consider issuing new orders for the defensive formation, footprint, and facing at this point. However, one of the worst times to issue new orders is in the middle of an attack.

### Avoid Causing Replans

When the situation changes significantly, a HQ will **replan** – it starts from scratch, makes an estimate of the enemy and friendly situation, the terrain, its task, and the time available – and reissues orders to all its subordinates. This process understandably takes a lot of time and the resulting orders will be subject to orders delay. Some replans are unavoidable; a force ordered to Attack, that finds itself thrown back by a strong defence, will need to replan before trying to attack again. However, some are caused by player actions and can be prevented from happening, thus saving some time.

Bear in mind that if a force is in the middle of carrying out an order, and you make a change that causes the force to replan, the subordinate units are likely to keep moving until they receive the new orders. This can cause your units to become spread out, increasing delays, and possibly leaving you open to attack. You will have to weigh this possibility against the risk of letting your forces go ahead with a not-quite-perfect plan. Sometimes changing your orders can make things worse!

### Changes that Cause a Replan

**Adding units** to a force, or **taking units away** (by issuing orders directly to those units, including them in a new force group, or by reattaching them if they were not an organic subordinate of the force) will cause the force to replan. Changing allow Basing will incur a delay because it will modify the force groups.

Changing an **order location ( ObjLoc )**, or the **FUP** of an Attack/Probe , will always cause a replan.

Unchecking Allow Attacks while an attack is underway will cause a replan.

If you set a moving force to **In-Situ** formation, it will incur orders delay; the component units of the force won't halt until they have received the change. If you set a force halted with In-Situ formation to another formation type, it will replan (incurring orders delay) and units will not start moving until they have received the change. When you change an order to In-Situ (or change an In-Situ order to some other formation), no other changes to the order will be processed until after the force has conducted the replan.

### Changes that Don't Cause a Replan

**Bombard** orders don't cause a replan, because artillery units operated their own radio nets and used procedures that were capable of producing almost instant responses to fire orders. Because artillery generally required time to set up, artillery units on the move may still require some time to get deployed and actually start firing, even though they act on the order immediately.

**Fire** orders don't cause replans either.

**Intermediate Waypoints** can be moved without causing a replan – so if you are looking to bypass any resistance on a Move, or during the Move to the FUP phase of an Attack, it's a good idea to plot the route using waypoints every 1000-2000m and send a single unit to scout ahead. When the scout discovers enemy defences, you can move the waypoints to bypass the enemy. You can also add and delete waypoints without incurring delay – as long as you don't change the order location or attack FUP in the process.

Changing the task options to allow Attacks, Bypass, Ambush and Stragglers generally do not incur orders delay. However a delay will be incurred, if an attack is already underway and you uncheck allow Attacks. Changing allow Basing will incur a delay because it will modify the force groups.

Some other situations which generally don't cause replans or incur orders delay are listed below. The list isn't complete, so there is still room for you to experiment and discover some of this for yourself, but in general anything not specifically mentioned below will probably incur orders delay.

## COMMAND OPS 2

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### **Move or Defend Orders**

- ⊕ Changing Speed, Route, Aggro, ROF, and Losses
- ⊕ Changing Frontage, Depth, and Facing
- ⊕ Changing Formation, except for In-Situ, which does incur orders delay

### **Attack or Probe Orders**

- ⊕ Changing Speed, Route, ROF, and Losses
- ⊕ Changing Frontage, Depth, or Facing
- ⊕ Changing Formation (except for In-Situ) during the move to FUP, or sometimes (but not always) during the assault

# Understanding Game Elements

## The Map

Comparing CO2 to the game of Chess, the map is the playing board while the units are the playing pieces.

The Battlemat is a vector drawn (2D) representation of the battle area. In most cases it has been produced from digital scans of a variety of WWII tactical maps. In general the maps are accurate to within 8m, although built up areas have been abstracted, rather than representing each building. Further, to reduce clutter, not all roads and tracks are displayed – their effects have been abstracted into the other terrain types.

Because the game uses a 100m movement grid, some roads which run a few metres alongside rivers have been relocated 100m away to ensure that the river cannot be crossed. Similarly, some of the bridges have been lengthened a little to ensure that they do allow movement across the major rivers. Apart from these minor functional abstractions, we have endeavoured to draw the most accurate maps possible.

Terrain features are drawn in layers, each overlaid in a specific order for presentation purposes. However, regardless of the order in which they are displayed, all layers still retain their effects on movement, combat and visibility. See [Annex E – Terrain Effects Chart](#) for details.

To determine the dominant terrain at any location, see [Identify Terrain Types](#).

In general, bridges, roads, rail, water, forts and urban terrain take precedence – in other words if they are present their effect will be used to the exclusion of others. However, roads and rail only apply if moving in road column, and streams act as a modifier on the underlying terrain type rather than replacing it.

A complex algorithm is used to determine the terrain effects on visibility and direct and indirect fire. In general, visibility is reduced by a certain percentage as specified in the Terrain Effects Chart (TEC) each time a line of sight traverses the terrain ( see [Night, Weather and Visibility](#) ). The TEC also specifies the percentage modifiers applying for each terrain type to direct and area fire ( see [Combat](#) ).

Altitude layers correspond to map contours and are shaded from light to dark, with dark being the higher altitudes. Altitude can block or enhance line of sight and hence visibility ( see [Spotting and LOS](#) ). Further, units get a hit bonus when firing down on targets and suffer a negative effect when firing up at a higher target.

Overlying the terrain layers are various grids for movement, side control, firepower and so on. The only one you can see represented is the 1km map grid that is used to give you an idea of scale and distances. To hide / show the map grid see [Miscellaneous Buttons](#).

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## Units

These represent the various military organisations of the Axis and Allied armies that took part in the battle. The standard unit size is a company of 120 – 150 soldiers ( though some may be weaker and some may be up to 300 men strong ). Other supporting units may be smaller ( platoons and troops ) or larger (battalions and regiments). These are the playing pieces you use to achieve your objectives.

## Combat Class

Units are always one of six combat classes – HQ, Line, Line Support, Support, Base, or Static.

**HQ** units are responsible for commanding other units.

**Line** units are the primary fighting elements of the force; infantry, recon and armoured units are always Line, as are specialised assault engineers. Their role is to engage in direct combat with the enemy.

**Line Support** units are expected to engage in direct combat with the enemy but in a supporting role. This includes elements like anti-tank gun platoons, machine-gun infantry, or ordinary engineers.

**Support** units are units that are not generally expected to engage the enemy directly but are instead intended to provide a specific support capability. Units like indirect-fire artillery and specialised construction engineers fall into this category.

**Base** units are those responsible for the management, stockpiling, and distribution of supplies. They are not expected to engage in combat. Each Base unit has an integrated Depot and supply dump.

**Static** units are garrisons assigned to a specific, permanent defensive position. They are expected to engage in combat if attacked and will stand until destroyed or forced to surrender. They cannot be issued orders.

## Military Structure

As discussed in the tutorials, CO: BFTB accurately models the hierarchical command structure employed by armies to allow commanders to effectively wield large numbers of men, guns and vehicles in battle.

Each level of the structure has a particular name (although these names can vary a little depending on the army or branch).

⊕ In general, the names used in this manual are those of the United States Army

At the very top are Army Groups and Armies, both of which will rarely appear in the game. Corps (sometimes called Army Corps) are the highest level usually found in the game and have two or more Divisions assigned plus a lot of supporting units like extra artillery and engineers. Each Division contains three Regiments plus more supporting units like artillery battalions, recon battalions, engineers and so on. Regiments each have two or more Battalions, each of which has between three and five Companies. There may also be a number of assorted support units like anti-tank guns or mortars, in even smaller groupings like Platoons or Troops, or company-sized support units like engineers, assigned to battalions and higher headquarter units.

The table below shows the main levels of the structure and their corresponding names and composition. There are a couple of levels that aren't listed on the table because they are not common – the German Brigade (Bde), which fits between the German Regiment and Division; and the British Detachment (Det), which is usually half or a third of a tank or artillery Section.

Table 7 - Military Structure Names and Sizes

Symbol	Unit Size	Men (Approx)	British Infantry	British Armor	British Artillery	United States	German - SS
XXX	2+ Divs	20000-40000	Corps	Corps		Corps	Corps
XX	2-3 Bdes	10000-20000	Div	Div		Div	Div
X	2-3 Bns	1000-2000	Bde	Bde			
III	2-3 Bns	1000-2000				Regt	Regt
III	3-5 Sqns / Btys	400-800		Regt	Regt	Cavalry Gp	
II	3-5 Coys	400-800	Bn			Bn	Bn / Gp
I	3-4 Pls	100-160	Coy	Sqn	Bty	Coy / Sqn / Bty	Coy / Sqn / Bty
III	2-4 Sects	30-40	Pl	Tp	Tp	Pl / Tp	Pl
I	5-10 men 3-4 vehicles 3-4 guns	5-10	Sect	Sect	Sect	Sqd	Sqd

### Organic and Attached Units

Except for the most senior unit, each unit has a superior – the unit that it ‘belongs to’ or is assigned to – its boss. It may also have subordinates that are assigned to it.

Military forces routinely train in these organisations and will establish groups of companies, battalions, brigades that are used to operating together. This is called the **organic structure**, and a unit’s boss in this structure is called its **organic superior**. Similarly, a unit that is commanded by a HQ in the organic structure is an **organic subordinate** of that HQ. Sometimes, however, units may need to be shifted from one command to another. When this happens, the unit is **detached** from its **organic superior** and **attached** to its new commander. This is known as the **player structure**. In some cases, two HQs may actually ‘trade’ units – for example, a tank battalion may swap one of its tank companies for a company of mechanised infantry.

The organic structure is permanent. It does not change throughout the game. However, the player structure is dynamic and changes each time you create a new group of units ( see [Group and Ungroup Units](#) ), or when your computer controlled commanders reassign units to accomplish particular tasks (eg. a divisional HQ may temporarily attach its own organic engineer unit to one of its brigades).

Because units train for battle in their organic structure, organic subordinates place less load on their HQ when playing with orders delay. You can achieve quicker response times by keeping your units in their organic structures as much as possible; balance this against the advantage of infantry-armour cooperation possible with cross-attachments.

It is possible to create a group of units that does not contain a HQ! In this case, the most senior unit will take command, becoming the battlegroup commander, to whom the other units in the group are attached. This is not usually desirable since non-HQ units lack the staff of an HQ and will take longer to process orders for the group.

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### Units Under Your Direct Command

When you give an order to a unit, you effectively tell it to develop a plan for it and all its current subordinates, which will include all of its non-detached organic subordinates plus any other attached units. So if you order a battalion to Move to X location, the battalion will move there along with all its companies. In giving the order to the battalion you are detaching it from its organic superior and placing it under your direct command. When this happens the colour of the command bar on its unit icon will change to white.

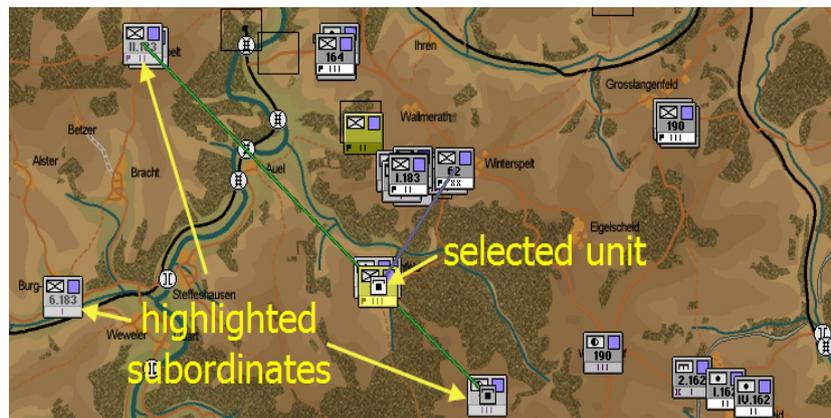


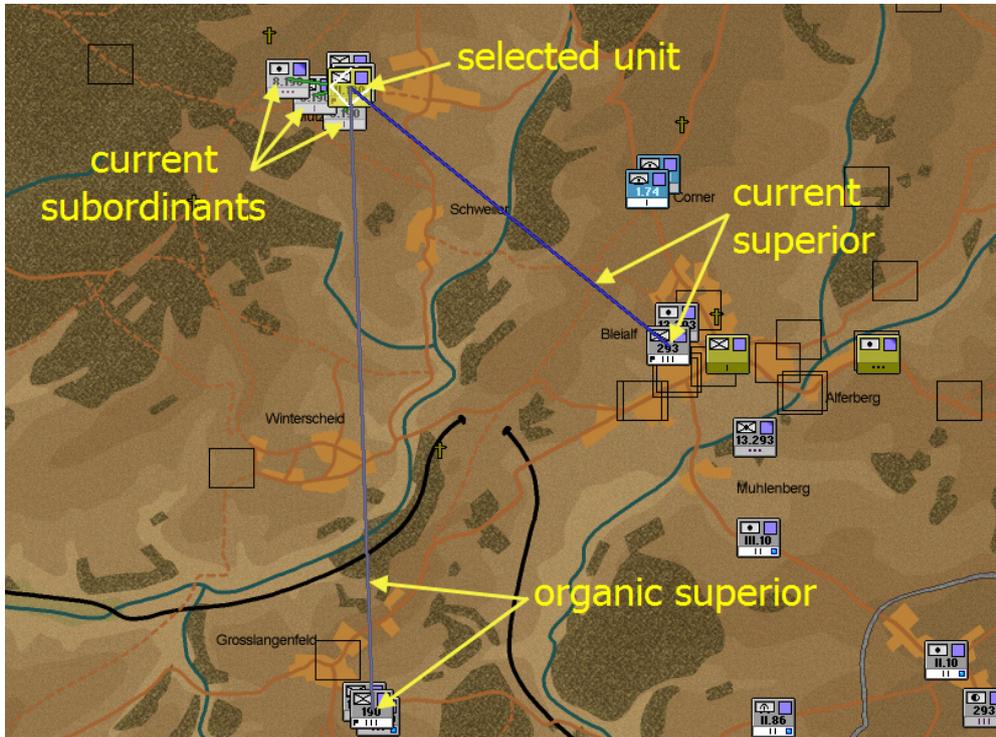
If you were to select another unit, say an engineer company, along with the battalion and then gave the group an order, you are attaching the engineer unit to the battalion and detaching it from its current superior. The engineer company's command bar would not turn to white as it is not under your direct command, only the battalion HQ unit is.

### Command Lines and Highlighting

If you have Command Lines ( see [Command and Supply Lines](#) ) turned on and the current OB display is set to 'Player' ( see [Force Structures](#) ) then whenever a single unit is selected, green **command lines** are drawn from the unit selected to its direct subordinates. If the unit is currently under the command of another unit, then a blue command line is drawn to its superior. If you have given the unit a command directly, then a grey command line will be drawn to its organic superior. When you give a direct order to a unit, the Command Bar at the bottom of the unit icon will change colour to white – see [Command Bar](#) for details.

Whenever one or more units are selected, all the subordinates of all selected units will be half highlighted (the colour of their icon will be a lighter shade).





Note in this example that if the current Force Structure was Organic, the line drawn between the selected unit and organic superior would be blue and there would be no line between the selected unit and the current superior.

As you can see, HQs are a vital part of the command structure. Their staff capability and experience in organising their subordinates are what enables the efficient execution of the commander's wishes – your orders!

HQs are identified in the game by a flag symbol on their unit icon ( see [Unit Icons](#) ).

### Degree of Freedom of HQs Under Player Command

Once you have issued an order, the senior HQ or battlegroup commander has a certain amount of leeway in planning how to carry it out. He can choose any setting (such as Formation Type, Route, or Frontage and Depth) that you have left as Unspecified or Auto. He will plan his route between the waypoints you have set, depending on either the route type you have ordered, or his own choice of route if you have left it up to him. In an Attack or Probe, if you have not specified a FUP ( see [Seize an Objective](#) ), then your battlegroup commander will choose one himself based on his estimate of the terrain and enemy.

One thing your commanders do not have the authority to do, is to change or abandon their orders. If ordered to Move, they will not Attack instead. If ordered to Attack, they will continue to do so until they either take the objective or you call them off! There are only two exceptions to this; Probes (where your commander can decide to bunker down – see [Launch a Probe](#) ); and [Secure Crossing](#) / [Deny Crossing](#) orders, which may be abandoned when the crossing is blown.

So it is important to monitor the progress of the forces under your direct command and where necessary to modify or issue new orders to cater for the situation.

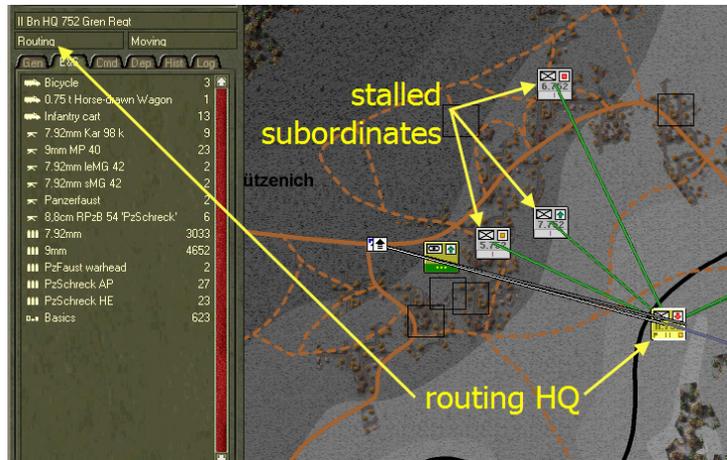
## COMMAND OPS 2

### Retreating and Routing HQs

Your HQs are worth protecting. If an HQ is forced to retreat, or even worse, to rout, it will be unable to process orders from you until it is fully recovered. It will also be unable to organise its subordinates, so whatever the battlegroup was doing, will almost certainly become disorganised and bog down.

### Destroying HQs

If a HQ is destroyed, command of its subordinates will go to the next senior unit. Eg, if a Bde HQ is destroyed command of the brigade will go to the most senior Bn HQ in the brigade. If a Bn HQ is destroyed, command will go to the senior company within the Bn. Needless to say, the new commanding HQ/unit will not be as well equipped to manage the force. A Bn HQ staff will be adversely penalised when other Battalions are placed under command and likewise for companies commanding other companies.



### Unit Names

To allow easy recognition of each unit's place in the organic structure, each army and branch adopted a naming standard for their units. Some armies (particularly the newer ones like the US and Germans) used a more systematic standard (based almost totally on letters and numbers.) The British forces, with their longer traditions, tended to use more unique names and had more 'exceptions to the rule'.

For CO: BFTB the naming conventions have been more or less standardized. The "st", "nd", "rd" and "th" has been dropped from the unit's designation such that "second" will be represented by a "2", "fifth" will be simply a 5, etc. With a few exceptions, battalion headquarters display the "HQ" after the battalion name or number designation followed by the regiment designation. Otherwise the "HQ" is placed at the end of the unit name.

### British Forces

British infantry battalions were named according to their traditional parent 'regiments' (usually these were based on a particular recruiting area) – the battalions of each infantry regiment would be allocated to different brigades and divisions, however, and would usually be deployed to completely different theatres of war so that no recruiting region could lose all its young men in a single battle. The battalion would be referred to by its position in the regiment and the regiment name:

- ⊕ 6 Bn HQ Royal Welsh Fusiliers – the HQ of the 6th battalion of the Royal Welsh Fusiliers, allocated to 160 Infantry Brigade of the 53 (Welsh) Infantry Division.
- ⊕ 4 Bn HQ Welch Regt – the HQ of the 4th battalion of the Welch Regiment, allocated to the 160 Infantry

### Brigade of 53 (Welsh) Infantry Division.

Most British armoured battalions were reclassified as regiments after WWI. They were also referred to by number and name:

- ⊕ 3 RTR HQ – the HQ of the 3rd Royal Tank Regiment, allocated to 29th Armoured Brigade.
- ⊕ 4 Bn HQ Gren Gds – the HQ of the 4th battalion of the Grenadier Guards Regiment, allocated to 6th Guards Tank Brigade.

British infantry and armoured companies were lettered in sequence within each battalion or regiment. Armoured companies were generally classified as squadrons. Infantry battalions included a HQ Company made up of support weapons platoons like mortars and machine-guns; these are either distributed among the other companies or, in the case of mortars, they are shown as a platoon with the battalion name and / or number.

- ⊕ B Coy 2 Monmouth – the second infantry company in 2nd battalion of the Monmouthshire Infantry Regiment.
- ⊕ B Sqn 3 RTR – the second tank squadron in 3rd Royal Tank Regiment.
- ⊕ Mor Pl 6 RWF – the mortar platoon of 6th Battalion of the Royal Welsh Fusiliers Infantry Regiment.

British artillery battalions were also called regiments, and were referred to by a number and either the letters RA (Royal Artillery), RHA (Royal Horse Artillery), or RM (Royal Marines). Generally, RHA units were allocated to armoured formations and RA units to everyone else. RA units equipped with normal artillery guns could be Field (Fd), Medium (Mdm), or Heavy (Hvy) Regiments depending on the size of their guns. Specialist artillery units like anti-tank (AT), heavy anti-aircraft (HAA), and light anti-aircraft (LAA) would have these letters included in their names as well. Unless otherwise noted in the name, all RHA units were field regiments.

- ⊕ 81 Field Regt RA – an RA regiment, equipped with field guns, in the 53rd Infantry Division
- ⊕ 87 Bty 25 LAA Regt RA – a light anti-aircraft regiment in the 53rd Infantry Division

RA batteries were numbered but not always in sequence (for example 64<sup>th</sup> Mdm Regt, RA had two batteries: 211<sup>th</sup> and 234<sup>th</sup>. Sometimes artillery batteries would be amalgamated and the new unit would take both numbers; for example, 15<sup>th</sup>/40<sup>th</sup> AT Bty, which was an amalgamation of 15<sup>th</sup> AT Bty and 40<sup>th</sup> AT Bty. The RHA batteries were originally lettered across all the regiments but by 1941 most batteries had been amalgamated; for example, 2<sup>nd</sup> Regt RHA contained H/I Bty and L/N Bty.

- ⊕ 25/26 Mdm Bty 7 Mdm Regt, RA – an amalgamated battery of medium guns in 7th Medium Regt RA
- ⊕ 284 Bty 71 AT Regt RA – a towed 17-pdr anti-tank gun battery in the 71st AT Regt, RA

British Engineer companies were numbered, although not in any particular sequence. There were two types: Field Companies, which handled most of the construction tasks, and Field Park Companies, which acted mainly as an

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equipment pool for the Fd Coys but could conduct engineering tasks on their own if needed. British engineer companies are identified by their number and the letters RE (Royal Engineer). Engineer companies in armoured formations were classified as squadrons instead of companies.

At the higher level, British brigades and divisions were numbered (not in any particular order) and referred to by their role as armoured or infantry.

### German and American Forces

The Germans and Americans identified their divisions by role and numbered the divisions of each role more or less in sequence. When naming the divisions, the Germans put the role first and the number last, and the Americans did the opposite. For simplicity, the American naming standard is used in CO: BFTB.

- ⊕ 9 Pz Div HQ – the HQ of the German ninth Armored (Panzer) Division
- ⊕ 2 Armored Division HQ – the HQ of the American 2nd Armored Division
- ⊕ 12 Volksgrenadier Division HQ – the HQ of the 12th Volksgrenadier (people's infantry) Division

Like the United States, the Germans used the regiment as their main tactical group within the division. Both named their regiments by role and numbered the regiments with each role in sequence.

- ⊕ 12 SS Panzer Regt HQ – the HQ of the German 12th SS Armored (Panzer) Regiment, allocated to 12th SS Panzer Division.
- ⊕ 48 Grenadier Regt HQ – the HQ of the German 48th Infantry Regiment, allocated to 12th Volksgrenadier Division
- ⊕ 23 Infantry Regt HQ – the HQ of the American 23rd Regimental Combat Team, allocated to 2nd Infantry Division

Within each regiment, companies were numbered (if German) or lettered (if American) in sequence and referred to by their number and role (exception: the Americans did not have an “H” Coy.) Starting with the first company in each regiment, every three to five companies were grouped into battalions, which were numbered in each regiment with Germans using Roman numerals and Americans using standard numbering. In most German regiments the last few companies were heavy-weapons units left out of the battalions and commanded directly by the regiment HQ. Some of these companies were normally broken up and a platoon allocated to each battalion in the regiment; for simplicity these have been named after the battalion they are allocated to and the company number has been dropped.

- ⊕ II Bn HQ 9 FJ Regt – the HQ of the second battalion of FJ Regt 9
- ⊕ 9 Coy 26 SS PG Regt – the ninth company of 26th SS Armored Infantry (Panzergrenadier) Regiment, falling into the third battalion of the regiment, which was allocated to 12th SS Panzer Division.

- ⊕ 2 Coy 48 Gren Regt – the 2nd company of 48th Grenadier Regt, falling into the first battalion of the regiment, which was allocated to 12th Volksgrenadier Division
- ⊕ 13 (IG) Coy 48 Gren Regt – the 13<sup>th</sup> company 48th Grenadier Regt, equipped with infantry guns (a light artillery piece) and directly under command of the regiment HQ
- ⊕ 1 Coy 277 PzJg Bn – the motorised Panzerjaeger (anti-tank) Company of the 277th Volksgrenadier Division's Panzerjaeger Bn

In some battalions, the last company was a heavy-weapons or machine-gun unit. The platoons of these companies are usually either broken down among the infantry companies or represented in CO: BFTB as a single platoon with the same number as the battalion. In these regiments you will see that some company numbers are skipped between battalions – the missing numbers belong to the companies that have been broken up in the game. For example, in 15 FJ Regt, there are three battalions, each of three FJ companies, a mortar platoon, and an infantry gun platoon. The companies in I Bn 15 FJ Regt are numbered 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>; in II Bn you have 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup>; and in III Bn you have 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup>. Directly under regiment control is the 13<sup>th</sup> mortar Coy and Pak (anti-Tank) Platoon. So where are the 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> companies? They are the heavy weapons companies, each comprised of four heavy machine-gun squads, an infantry gun platoon and a mortar platoon. The heavy machine-guns are allocated to the FJ Coys in each battalion, and the remaining mortar and infantry gun platoons have been simply given the same number as the battalion. The PzJg Coy – comprised of one anti-tank gun platoon and 3 panzerschreck platoons – has been broken up and its panzerschreck platoons allocated to each of the companies and the anti-tank gun platoon remains as the 14th company in the Regiment.

- ⊕ Mortar Pl 4 Coy 15 FJ Regt – the mortar platoon of the first battalion of FJ Regt 15; this actually belonged to the fourth, heavy-weapons company of the regiment which is not represented as a single company in the Battalion.
- ⊕ Pak Pl, 14 Coy 15 FJ Regt – the anti-tank platoon allocated to FJ Regt 15; this actually belonged to the PzJg company of the regiment which is not represented as a company.

Artillery units in CO: BFTB are usually battalions and were numbered generally the same way as armour and infantry battalions. Allied artillery were named with the size of gun they used, Germans used roman numerals to roughly identify the class (I = light, II, III = Medium, and IV Heavy).

- ⊕ 905 Fd Arty Bn (105) – the 905th field artillery battalion, equipped with 105mm field guns or Howitzers and allocated to the US 80th Infantry Division.
- ⊕ IV Bn 406 VAK – the fourth battalion of the 406 Volksartillery regiment, equipped with heavy (>105mm) guns.

German engineer companies were called *Pioniere*. Most German and American divisions had a battalion of engineers; usually these were employed as individual companies so the battalion HQs do not appear in the game.

- ⊕ 1 Coy 47 Pioneer Bn – the 1st engineer company of Pioneer Bn 47, allocated to LXXXV Korps and

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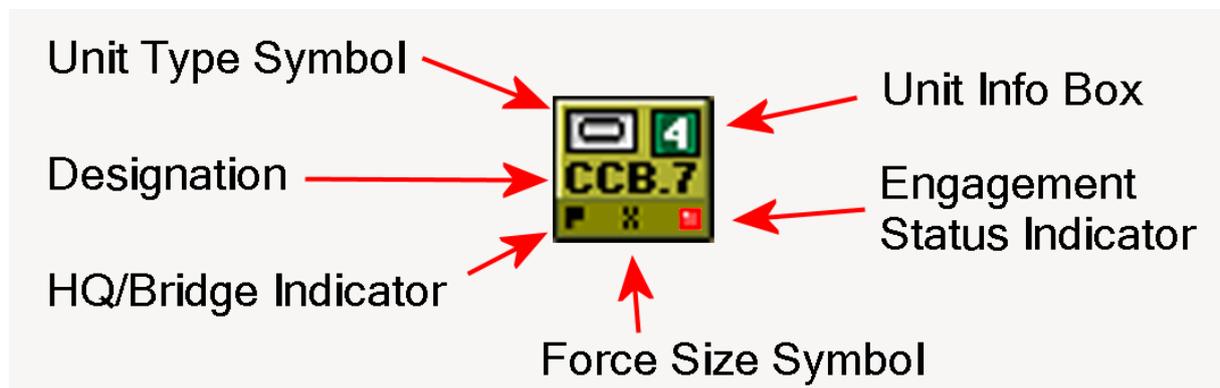
employed as an individual company

- ⊕ C Coy 101 Eng Combat Bn – Company C of the 101st engineer combat battalion, allocated to the US 26th Infantry Division.

The Germans also employed a formation called a *Brigade* which was effectively a mini-division, consisting of several battalions of different types which were sometimes organised into regiments within the *Brigade*. There are 3 formations of this type in CO: BFTB, the *Führer Begleit Brigade*, *Führer Grenadier Brigade*, and Otto Skorzeney's ad hoc *150th Panzer Brigade*. All of them had an armored battalion and various infantry and support units attached.

### Unit Icons

Each unit is represented on the Battlemat by an icon. This has a symbol at the top left representing the type of unit it is (infantry, armour, artillery etc), a unit designation drawn across the centre (for example, "CCB.7", for Combat Command B of the 7th Armoured Division), a command bar at the bottom, a size symbol on the command bar, a flag if it is a HQ, a coloured box indicating its engagement status if engaged in battle, and an Info Box in the top right which is used to dynamically display summary data about the unit.



**Side / Service / Branch**

The background colour of the icon indicates which Country and/or Service the unit belongs to. The colour of the designation text indicates a sub-branch within that country or service.

Table 8 - Unit Icon Colours

Background	Text	Service and Branch
Grey	Black	German Army
Black	White	German SS
	Olive	German Greif Combat troops
	Orange	Dutch SS
Blue	Light Blue	German Air Force
Blue	Black	German Airborne
Dark Blue	Light Blue	German Navy
Olive	Black	United States Army
Dark Olive	Cream	United States Airborne
Light Brown	Dark Red	British Army
	Cream	British Guards
Red	Yellow	British Airborne
Light Grey	Red	Polish Airborne
Orange	Black	Dutch Army
Red	Yellow	Belgian Army

**Type**

The Unit Type symbol can be displayed either as a picture or as a NATO-style military symbol. The different types of symbols provide different information. For example, the picture symbols differentiate between mortars, artillery, and infantry guns; while the military symbols provide more information about whether a unit is on foot, motorised, or tracked.

A list of all the symbols of both types and what they refer to is in [Annex D – Unit Types and Symbols](#).

**Designation**

The Designation of each unit is printed across the middle of the icon and is an abbreviated form of the unit name ( see [Unit Names](#) ). Usually the designation will show the letter or number of the unit and the letter or number of its parent unit. The parent unit is usually the same as the organic superior but in some cases the organic structure already includes some cross-attachments (such as where a tank company is allocated to an infantry battalion). In these cases the parent unit will be different from the organic superior – in this case, the parent unit will be the tank battalion HQ rather than the infantry battalion HQ.

Some designations will not include a parent designation, either for reasons of space or, for higher formations like

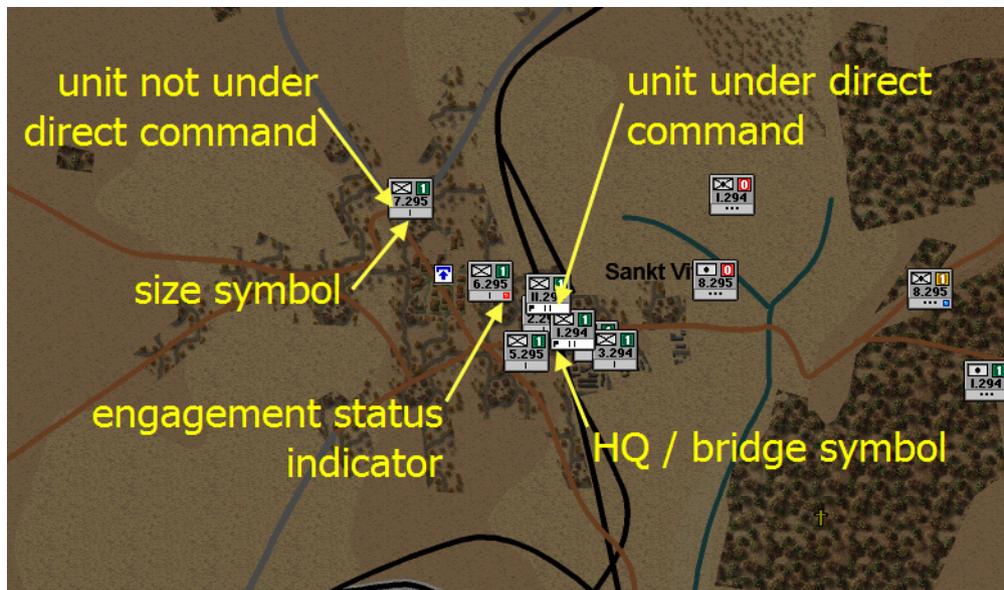
## COMMAND OPS 2

brigades, because these did not have a parent organisation but were instead simply allocated to divisions or corps on a semi-permanent basis.

In unit designations the period (.) is used between subordinates and their parent Battalion or Regiment/Brigade HQs. For simplicity this was used as the standard designation throughout all nationalities represented in CO: BFTB.

### Command Bar

The colour of the Command Bar shows whether the unit is currently under your direct command, or under the command of an AI-controlled unit. For units you have given orders to, the command bar will be white; for units under AI control (including the subordinates of a unit to whom you have given orders), the command bar will be olive drab or grey, depending on the side you are playing.



Additional symbols are displayed on the Command Bar:

- ⊕ A symbol showing the command level/size of the unit is shown in the centre of the command bar; see Table 5 - Military Structure Names and Sizes for a list of the symbols
- ⊕ For HQ units, a small flag is displayed on the left end of the Command Bar
- ⊕ For engineer units, a small bridge symbol is displayed on the left end of the Command Bar to indicate that the unit has bridge building capacity available; when the unit runs out of bridge building capacity, the bridge symbol will disappear from the unit icon

### Engagement Status Indicator

When a unit is engaged in combat its engagement status is indicated by a small coloured box at the right of the command bar. The box will show the following conditions:

- ⊕ White – surrendering to the enemy
- ⊕ Red – taking casualties
- ⊕ Orange – receiving fire
- ⊕ Blue – firing



Items at the top of the list replace the ones below. Eg. a unit both firing and receiving fire will show an Orange Engagement Status indicator instead of a Blue one. Note that surrendering here does not necessarily mean the entire unit, rather that some of the personnel from the unit are surrendering.

### Info Box

The Info Box, displayed at the top right of a unit's icon, can provide an overview of the status of all your units at a glance ( see [Unit Info Filter](#) ). For detailed information about a particular unit, refer to its Unit Info Display in the Sidebar.

- ⊕ The current Info Box setting is shown on the Unit Info button of the toolbar

Only one type of information can be displayed at any time. The different types of information you can display in the Info Box are:

**Task ( F1 )** shows the orders or task each unit is carrying out, using the same symbols as the Orders Tab commands. Units with a blank Info Box have no orders. If you have turned orders delay on, a pink background in the Info Box tells you that orders have been sent to a unit but it has not received them yet. See [Command Your Units](#) and [Objectives, Orders, and Tasks](#) for more information about orders and tasks.

**Rout Status ( F2 )** shows if the unit is carrying out its orders or not. See [Rout Status](#).

Table 9 - Rout Status

Icon	Status	Meaning
	OK	Units actively carrying out orders
	Halted	Units temporarily stopped due to enemy resistance
	Retreating	Unit pulling back to safety due to heavy enemy fire
	Retreat Recovery	Retreated unit preparing to return to the advance
	Routing	Unit fleeing in disarray with broken morale
	Rout Recovery	Routed unit recovering morale, preparing to rejoin battle

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**Strength** ( F3 ) shows how close the unit is to its theoretical full strength in personnel and equipment. **Green** is close to full strength, **yellow** is about half strength, and **red** means the unit is almost burned up. Note that units often start a scenario understrength and hence this is not a good indication of losses since the scenario start. See [Strength and Losses](#) for more information.

**Combat Power** ( F4 ) The number indicated (0 – 9) is an approximate measure of how powerful a unit is compared to other units. It factors in firepower, strength and effectiveness values. A combat power of 9 is twice as powerful as an 8, which in turn, is twice as powerful as a 7 and so on. The background colour in the Info Box reflect the rout status of the unit: green is OK or halted, brown is retreating or retreat-recovering, and red is routing or rout-recovering. A unit with a combat power of zero had best not get involved in any shooting!

**Deployment** ( F5 ) indicates how well dug-in your units are (if at all). See [Deploy, Dig-In, Entrench, and Fortify Your Units](#) and [Deployment](#) for more information.

Table 10 – Deployment Status

Icon	Deployment Status
	Undeployed (standing or walking)
	Taking Cover
	Deployed
	Dug-In
	Entrenched
	Fortified

**Facing** ( F5 ) is the direction the unit is heading or deployed towards. The long side of the bracket represents the front of the unit and the open side the rear. Facing is also indicated by the white coloured deployment or occupied area box drawn over or around the unit icon when it is selected – see [Select Units](#) and [Footprint and Facing](#).

**Morale** ( F6 ) indicates your units' will to fight. Units with high morale will have a **light green** info box; units with a **dark green** info box have had enough of the fight. See [Morale, Fatigue, and Cohesion](#) for more information.

**Cohesion** ( F6 ) shows the degree of organisation in the unit. **Light blue** indicates a well-organised unit; **dark blue** shows a complete shambles. See [Morale, Fatigue, and Cohesion](#) for more information.

**Fatigue** ( F6 ) shows how tired your troops are. A **Light red** colour means your troops are fresh; **dark red** units are exhausted. See [Morale, Fatigue, and Cohesion](#) for details.

**Ammo** ( F7 ) shows how much ammo a unit has relative to its normal stock requirements. **Light grey** means their ammo level is high, **dark grey** means empty.

**Arty Ammo** ( F7 ) is useful to get a quick picture of your artillery reserves. Only units able to bombard (like field artillery, mortars and rockets) will display this item; other units will show a blank info box when it is selected. Artillery units with a **light blue** info box have close to their full complement of shells, bombs or rockets; units with a **dark blue** box have run out and will only be able to engage enemies they can hit with their personal weapons.

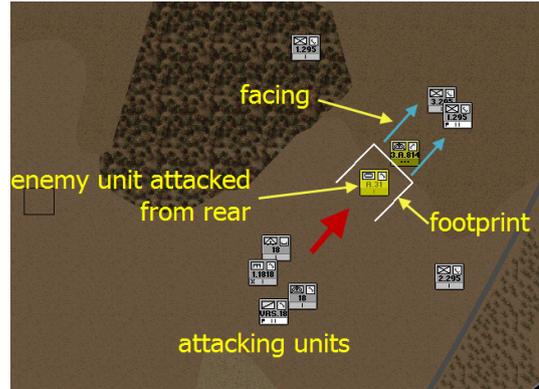
**Basics** ( F7 ) shows how much food, water and other equipment a unit has relative to its normal stock requirements. **Light brown** means they have plenty, **dark brown** means they go hungry.

**Fuel** ( F7 ) shows how much fuel a unit has relative to its normal stock requirements. Only units that require fuel will display this item. **Light blue** means the fuel tanks are full, **dark blue** means they have run dry.

## Footprint and Facing

When a unit is selected or highlighted, a white perimeter box will show that unit's footprint – the rough outline of the area occupied by the troops of that unit. The open side of the perimeter box indicates the rear of the unit. This is useful for checking that units are deployed into covered terrain, that they do not overlap, or that the gaps between units are not too large. It is also handy for making sure your units are facing the most important enemy threat.

Units firing in a direction other than their facing have their firepower reduced. Also, this usually means that they will suffer more casualties from enemy fire due to their formation effects. So it's a very good idea to try and assault an enemy on its flank or rear. Units suffer a loss in cohesion each time they adjust their facing.



## Force Data Display

When you select one or more units and open the Force Data dialog, their information will be displayed in what is referred to as the **Force Data Display**. At the top of the display are the Name, Task/Reaction and Action/Deployment fields. Below this are the six tab views, one of which is viewable at any time: **Gen** ( general status ), **E&S** ( equipment and supplies ), **Cmd** ( command ), **Dep** ( depot ) **Hist** ( history ) and **Log** ( event log ).

The Force Data Display is also shown when you select an enemy **intel report** and open the but not all tabs will contain information and the information that is presented can be very inaccurate (depending on how good the sighting is).

### Name

See [Unit Names](#) for an explanation of these.

### Task / Reaction

The **Task / Reaction** field indicates either what order or task the unit is carrying out (such as Moving, Defending, or Assaulting), or if the unit is not carrying out an order or task this will display the reason (such as Retreating, Bunkering Down, or Waiting).

### Action / Deployment

The Action / Deployment field either shows the unit's current action (like Firing or Moving) or its deployment status (like Taking Cover, Deployed, or Entrenched).

## COMMAND OPS 2

### General ( Gen ) Tab

#### Dynamic Indicator Bars

The **Gen** tab has a number of indicator bars used to show how strong, effective or suppressed the unit is relative to its theoretical full strength (and in the case of Personnel, Equipment and Morale relative to the original value at the start of the scenario), plus exact values for its current strength and firepower. If you select several units, the values shown on the progress bars will be the average of the values of each unit.

**Personnel** – the **light blue** indicates how close to full manning the unit is currently; the **dark blue** shows what its condition was at the start of the game.

**Equipment** – comprises all weapon systems and principal vehicles – those items which directly contribute to the unit's ability to move and fight. Like Personnel, this progress bar shows the current condition in **light blue** and the starting condition in **dark blue**.

**Morale** – indicates your units' will to fight. The morale of your units at the start of the scenario is shown in **dark blue**; their current morale is shown in **light blue**. See [Morale, Fatigue, and Cohesion](#) for more information.

**Cohesion** – shows the degree of organisation in the unit. See [Morale, Fatigue, and Cohesion](#) for more information.

**Fatigue** – shows how tired your troops are. Try to keep this value as low as possible. See [Morale, Fatigue, and Cohesion](#) for details.

**Suppression** – when units are under heavy fire they become suppressed. They become less able to spot or fire at enemy units, direct artillery fire, or move. If your forces are becoming heavily suppressed, the enemy is winning the fire fight and you should either withdraw or allocate extra firepower to overcome his advantage. Suppression is a very temporary effect and when units are no longer under fire their suppression level will drop rapidly. Try to keep this value as low as possible.

#### Static Indicator Bars

The set of static indicator bars show the unit level of training, fitness, aggression and stubbornness. These values do not change during play.

Name	Task/Reaction	I Bn HQ 19 SS PG Reat		Action/Deployment
		Assaulting	Deployed	
		<div style="display: flex; justify-content: space-between;"> <span>Gen</span> <span>E&amp;S</span> <span>Cmd</span> <span>Dep</span> <span>Hist</span> <span>Log</span> </div>		
Dynamic Indicator Bars		Personnel		
		Equipment		
		Morale		
		Cohesion		
		Fatigue		
Static Indicator Bars		Suppression		
		Experience		
		Training		
		Fitness		
		Aggression		
		Stubborn		
Strength		Personnel	34 / 575	Force Values
		APVs	0 / 0	
		Non-APVs	8 / 106	
		Guns	0 / 13	
Firepower		Bridges	0 / 0	Deploy to Fire symbol
		Anti-Persnl	14 / 279	
		Anti-Armour	11 / 217	
Other Values		Bombdmt	0 / 38	Move Type symbol
		Armour	0 / 0	
		Inf Val	0 / 423	
		Eng Val	0 / 0	
Movement		Movement	15 / 15	Number of Units
Terrain		Village / Med Bridge		
Role		Units: 6		

**Experience** refers to the amount of combat experience the unit has. Given the relative short period of the battle there is only a very slight chance of a unit's experience level being increased and no chance of it being decreased (unless the unit gets destroyed, of course). Units with lots of experience are better at retaining and regaining morale, retaining and recovering cohesion, firing their weapons, changing formation and facing, deploying and digging in and processing orders.

**Training** refers to the amount of military instruction and exercising the unit has undertaken. This will not vary during the period of the battle. Highly trained units are better at retaining and recovering cohesion, firing their weapons, changing formation and facing, deploying and digging in and processing orders.

Training complements experience. In some ways one can compensate for the other. The best units are both highly trained and seasoned veterans.

**Fitness** reflects the physical stamina and conditioning of the troops. Fit units move faster, tire less and recover freshness quicker. Some elite units, like paratroopers and mountain troops, were extremely fit and are capable of marching further and faster with less sleep than ordinary troops.

It is not a good idea to issue orders with the **Speed** set to **Fastest** to units with very low fitness.

**Aggression** ( aggro ) refers to how aggressive or assertive the unit is and how much initiative the unit is likely to exercise. Units with high aggro lose less morale and are more likely to fire or attack.

**Stubbornness** refers to how stubborn the unit can be in defence and to how determined the unit can be to fulfil its order. When you need to hold a location under attack, then look for a very stubborn unit. However, these units are not what you want when you want to break contact and withdraw.

### Strength Values

These show the current quantity of **Personnel**, **Armoured Fighting Vehicles (AFVs)**, **Non AFVs**, **Guns** and **Bridges**. AFVs include tanks, half-tracks, armoured cars and so on, while Guns refers to any mortar, howitzer, gun or rocket launcher (basically every weapon heavier than rifles, machine guns, and very light mortars).

If you select several units, the Strength Summary will show the total figures for all the selected units. If you select a HQ, the HQ's own status will be shown in the left column; the combined strength of the HQ and all its current subordinates will be shown in the right column.

### Firepower Values

Firepower comes in three types, anti-personnel (**APerFP**), anti-armour (**AArmFP**) and bombardment (**BombFP**). These values are used to determine the number of hits / kills on enemy units. A unit will use its APerFP to fire at non-armoured units such as infantry. It will use its AArmFP to fire at armoured units such as tank companies. It can use its BombFP to conduct bombardments against any unit (only units capable of bombarding will have a BombFP, all other units will have zero for this value).

If a significant proportion of firepower comes from weapons that must be deployed to fire, then the **Deploy to Fire** symbol will appear to the right of the value. This means the unit/force will only have that firepower value when deployed – it will be significantly less while moving.



Guns	2
Bridges	0
Anti-Persnl	91
Anti-Armour	70
Bombdmt	0

Deploy to Fire symbol

See [Combat](#) for more information about how the firepower values work in the game.

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### Other Values

**Armour** is a measure of both how many and how well armoured your AFVs are. A single light armoured vehicle (like the US M3A1 halftrack) is worth very little – about 1.0 per vehicle. Most light-medium armoured vehicles, like the German or US Armoured Cars, are worth between 3 and 6 per vehicle. Medium tanks like the German PzKw IVs or the US M4 Shermans are worth around 10 per tank, Heavier mediums like the PzKw V Panther are worth 15-20, while the most heavily-armoured tanks (like the German PzKw VI Tiger tank) are worth 20-25.

See [Combat](#) for more information about how armour values work in the game.

**Infantry** is a measure of how much infantry personnel you have – ie troops that can engage in front line infantry work. As a rough rule of thumb most line infantry companies will get one point per person. Armour units will have none. Recon companies that contained a platoon of infantry will get approximately 33% of their total personnel. This value is used in allocating forces – eg. when a mixed force of infantry and armour assaults covered terrain like orchards, a unit with high infantry value will be allocated to the centre or advance guard.

**Engineer** is a measure of engineering capacity. Field engineer units will get roughly one point for every 12 persons. Again this is used in allocating forces and in construction tasks to determine how long it will take to complete.

### Movement

This is the current speed modifier ( percentage ) that applies to this unit traversing the terrain in its current location. It is derived from the unit's movement type and the terrain effect of its current location. As a general rule foot movement types will have a value of 100% on highways, 67% in clear, 45% in village, 38% in town etc while Motorised ( mot ) units will move through clear terrain at 33%, village at 24% etc.

But remember motorised units have a higher base or nominal speed. Eg Foot units with a base speed of 6kph will move across clear terrain at 4kph ( 6 x 67% ) while a mot unit with a base speed of 24kph will move at 8kph ( 24 x 33% ).

To the right of the value is a symbol indicating the movement type – a boot for foot and a wheel for motorised. Note that a mixed force will show a wheel – ie motorised – as this is the most restrictive mode – ie motorised units are prohibited from entering more type of terrain than foot.



### Terrain

Shows the terrain types the unit is currently occupying. This is blank if you select more than one unit.

### Role

This refers to the role the unit is performing within its superior's formation – ie what subgroup type it is doing. In general these are divided into guards and fillers. A guard is usually occupied by line units, while support units usually end up in filler roles. A road column formation will have an advance guard, followed by a main guard, then the hub ( which is the superior unit ) followed by one or more filler groups, with the rear guard at the end. A force assaulting in Line will have left, centre and right guards up front, followed by the hub and further behind will be the fillers.

Fillers come in two types – Support and Line. Support fillers contain only support units. Line fillers will contain at least one line unit. You only get Line Fillers when there is a surplus of line units to man the guards.

Retreating and routing guard groups will often trigger reassessments by their superior and will increase the probability of nearby units also reacting.

### Equipment and Supply ( E&S ) Tab

The E&S tab shows a list of the unit's equipment and supplies and the current quantities of each. **Equipment** is listed in the order AFVs, non-AFVs, weapons and bridges. If a unit is supposed to have a particular item, but has lost all of it, the item will be greyed-out. You can display a picture, description, and other data of an equipment item by double-clicking on the item in the E&S display. If the item is a vehicle, then double-clicking on an entry in its Armaments list will open its data. Hit the Close button to return to the list.

Supplies come in three varieties – fuel, ammo and basics. Each type of ammunition is recorded separately. So you can run out of ammunition for your guns (and often do) while still having ammo for small arms. Fuel and basics are handled as consolidated items and are not broken down into their derivatives (petrol, diesel and kerosene are all counted as fuel and food, water, clothing etc are all counted as basics).



Motorised units that run out of fuel cannot move but do not abandon their vehicles. Units that run out of basics will tire very quickly and as a result lose combat effectiveness. Units that run out of ammo cannot fire their weapons that use that particular ammo type.

- ⊕ Units will try and conserve ammo once they get down to around 20% of their normal requirement, by reducing their rates of fire

### Command ( Cmd ) Tab

The **Cmdr** tab displays the name and rank of the commander of the unit. It also has a number of indicator bars displaying the commander's ratings for leadership, aggression, determination, efficiency and judgement plus two other indicator bars showing the quality and efficiency of the commander's staff. Below these are fields displaying the command capacity and load and the orders delay periods applicable for the unit and its force. For the more interesting and important officers, some brief biographical details are also provided

#### Indicator Bars

**Leadership** refers to the commander's ability to inspire his troops to follow him in battle and to how well he can organise and deploy his forces tactically – i.e.. fight a battle. A well-led unit is less likely to suffer reductions in morale and cohesion and



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will be quicker to rally from retreat or rout and quicker to reorganise.

**Efficiency** – refers to how organised and quick the commander is in processing orders. Efficient commanders can process orders quicker and are quicker to react to enemy actions.

**Determination** – refers to how motivated the commander is to fulfil his orders. A determined commander is less likely to abandon a task, more likely to initiate an attack to take the objective or to attempt to blow the bridge he has been ordered to deny the enemy. A determined commander also reduces the probability of a force losing morale or surrendering.

**Aggro** – refers to how aggressive or assertive the commander is and to how much initiative he is likely to exercise. Aggressive commanders are more likely to initiate attacks, less likely to bypass enemy opposition and reduce the probability of their unit suffering morale loss.

Note that commanders of units you have directly ordered are restricted in using their initiative. They cannot launch attacks nor bypass. You must order them.

**Judgement** – refers to how sound the commander is at making decisions. A commander with good judgement is more likely to pick the best option, the best assault approach, the best advance route, the best formation, the best facing. He is more likely to break contact at the correct time when ordered to delay and more likely to determine the best time to blow a bridge.

**Staff Quality** – refers to the ability of the HQ staff to turn the commander's decisions into formal orders and transmit those to their subordinate units, and to their ability to provide accurate intelligence and situation reports to the commander. HQs with high staff quality will process orders faster and will cope well with attached units; HQs with poor staff quality are slow to respond and may have trouble organising their organic subordinates, let alone any attachments.

### Orders Delay Summary

If you are playing with Orders Delay turned off, these values will be irrelevant. With Orders Delay turned on they become pretty important when you try to synchronise the operations of your units. See [Work With Orders Delay](#) and [Orders Delay](#) for more information.

**Capacity** – this refers to the ability of your unit (especially HQs) to command subordinates. Each additional point of capacity means the HQ can command one more organic subordinate of the level below the HQ. For example, a Battalion HQ with a Capacity of four can command four organic subordinates of company size.

**Load** – this is the current strain on your unit's staff generated by organic and attached subordinates.

**Unit Delay** – this is the time it will take for the unit itself to receive and process a new order.

**Force Delay** – this is the approximate time it will take for the unit **and all its subordinates** to receive and process their new orders – in other words how long before the force starts moving as a whole. These values can take some time to update when you first create a new battlegroup.

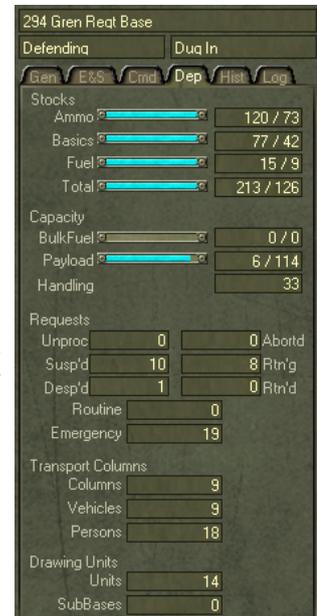
### Depot ( Dep ) Tab

For units other than Bases this displays the unit's supplying Base/Depot. To go to the Supplying Base:

☞ Click on it's icon in the tab view

This will select the Base unit on the Battlemap and display its Depot data in the Force Data dialog.

For Base units this tab shows a wealth of information on its stocks on hand, transport and handling capacity, resupply requests, transport columns and drawing units. For details see [Review Depot Data](#).



### History ( Hist ) Tab

The **Hist** tab shows a brief history for the more interesting or important units, otherwise it will be blank.



### Event Log ( Log ) Tab

The **Log Tab** displays a list of entries of major events or changes in status that affect the unit. These are recorded as they occur, or every 15 minutes of game time for the more common events. Unlike the scenario message logs, the unit logs are saved when you save a game.



## Combat Effectiveness

Although all aspects of a unit's condition have an impact on its battle performance, some are more important than others. For more information about the effects of these values see [Combat](#).

### Strength and Losses

Every type of unit has a theoretical full strength, or Establishment ( Etab for short ), which lists the personnel, equipment and supplies that should be held by the unit. A unit at full strength would have a solid bright green Info Box when displaying Strength ( F3 ) and it would have full indicator bars on the Gen Tab for Personnel and Equipment. Units rarely achieve this full strength, even when not in combat, since they will have equipment down for maintenance and personnel sick or away on leave or courses. Once a unit is in combat, it will usually suffer

losses that will further reduce its strength.

As units become weaker, their morale will drop and they become less combat-capable. A single company near full strength may be more effective in battle than two or three companies that are almost used up! Try to keep units that have low strength out of major combat, and don't rely on them for anything critical unless you have no choice.

### Firepower and Armour

Firepower and armour values are important for a couple of reasons. Firstly, they give a good indication of your units' ability to deal out punishment, and to withstand enemy fire; secondly, if you are playing a scenario that includes Exit Objectives (see [Exit Your Units Off the Map](#) and [Exit Objectives](#)), the force you exit will be scored using its firepower and armour values.

**Armour** is most easily understood as being the number of AFVs in the unit multiplied by the thickness of their armour. A unit with many weakly-armoured vehicles may have a higher Armour value than one with a few, heavily-armoured tanks. It is important to keep this in mind since many anti-armour weapons will only be effective against a certain thickness of armour; AFVs with heavier armour than this will be invulnerable to those weapons. Units with high Armour values can be very useful in assaulting infantry or support units in open country, since they exert a **shock effect** at close range that can reduce infantry morale. Conversely, infantry units will inflict a similar shock against armour units at short range at night or in close country like towns or woods.

**AArmFP** is pretty comparable to Armour; it roughly represents the number and armour-thickness of AFVs the unit could destroy in a minute of fire at close range in perfect conditions. It is a product of the armour-penetrating capability of the unit's weapons and their rate of fire. Remember that some weapons (like 20mm anti-aircraft guns) have a very high rate of fire but a very low armour-penetrating capability. Units equipped with these guns may have high AArmFP values but will still be unable to damage medium or heavy tanks. Against a unit equipped with lightly-armoured vehicles, however, these weapons can be devastating.

**APerFP** represents the ability of your unit to kill infantry at close range. It equates to the number of men the unit could kill in one minute of fire at 100 metres against a 120-man company, in the open, standing up. In general, when using your infantry to attack enemy infantry, you should aim for a 3:1 ratio of friendly APerFP to enemy APerFP.

**BombFP** represents the power of your units to deluge an unseen area with high-explosives and shrapnel. The higher the BombFP of your units, the more effective their bombardments will be; not only at killing personnel and destroying vehicles, but also in suppressing the enemy, increasing their fatigue, and eroding their morale. Note that BombFP is very effective at suppressing the enemy. Eighty percent of all casualties from WW2 were caused by artillery fire. While it may often break up an enemy attack and force them to retreat, there is no substitute for close range direct fire. So to repel the enemy assault you need both indirect artillery fire and direct fire from line units.

Remember to always exercise caution in using these values to form your plan. The values are a summary only, and you need to consider the types and capability of weapons and vehicles in your units. Some units will have high firepower values, but are limited by short range; these units will be vulnerable at a distance to an enemy with lower firepower values but longer range weapons. Likewise, as well as looking at overall AArmFP and Armour values, consider the thickness of armour on your AFVs and the armour-penetrating capability and range of your anti-tank weapons.

### Morale, Fatigue, and Cohesion

Because morale measures the will to fight of your units, it is a key value. Units with poor morale are unhappy with their lot and are more likely to retreat or even rout when fired upon. Morale is lowered as units suffer casualties and are fired upon. The rate of decrease is greatest for poorly trained and inexperienced troops. Morale level can increase (albeit slowly) if the unit is pulled out of the line and rested. Units also recover some morale by inflicting heavy damage on enemy units.

Fatigue is also an important consideration in your planning. Tired units (i.e. those with high Fatigue) move slower, fire slower and less accurately and are more likely to have their morale and cohesion lowered. Fatigue increases as units move and to a lesser degree fire. Units moving by foot fatigue faster across rough terrain. They also fatigue faster than motorised units when moving. Units become fatigued quickly if they are force-marched (by selecting the **Fastest** move rate for a task) and when moving at night. Unfit units fatigue faster. Fatigue can be reduced whenever a unit is stationary. It is reduced quickest if they are ordered to Rest. Managing your units, so that they do not all become severely fatigued, can create an edge over the enemy that you can use at a critical point. The best way to do this is to maintain a reserve, which rests.

Cohesion is important because it too has a significant effect on unit activities. Units with poor cohesion are more likely to stop and Reorg rather than obey their assigned order, at least until they have recovered a modicum of organisation. Units with low cohesion will also be more vulnerable to enemy fire and are less able to return fire effectively. Cohesion is lowered as units are fired upon, suffer casualties, force march, change formation and change facing. The rate of decrease is greatest for poorly trained and inexperienced troops. Cohesion is recovered when units remain stationary. It is recovered quickest if they are ordered to Reorg.

### Rout Status

Displaying **Rout Status** in the Info Box lets you quickly track the progress of the battle. Where your units are mostly OK, you are progressing well; if you see a lot of Retreating, or even worse, Routing units, you may need to take steps to avoid a defeat. See [Reactions](#) for more information.

Units behave differently when retreating and routing. Retreating units will attempt to maintain formation and will keep facing the enemy as they fall back. They will retain some cohesion and combat capability. Routing units will abandon their formation and turn their backs on the enemy; they become much more vulnerable to enemy fire and are unable to effectively engage enemy threats. Routing units will move away from the enemy as fast as they can (because they are fleeing for their lives, they move faster than other units).

Generally, retreated units will recover much faster than routed units and will be more effective once they have recovered.

Retreating units are less likely to fire at enemy units – routing units even more so. Similarly, when it comes to selecting targets to fire at, your units will tend to give priority to non-retreating and non-routing enemy units.

If unit is moving in formation, is part of a guard subgroup ( see [Formations](#) ), and is forced to retreat or rout, then the rest of the force will not be able to continue moving until that unit recovers or the commander re-generates his formation and places the retreating unit in a filler subgroup.

In some cases, where a unit is already located in good cover, it may retreat or rout in place – ie without moving; in effect the unit is cowering. Apart from moving, the other effects of retreating and routing apply to units doing

so in place.

### Deployment

The deployment status of your units is important because it has a significant effect on their vulnerability and effectiveness.

An **Undeployed** unit is moving, with dismounted troops standing up. It is easy to spot from a long distance away and is very vulnerable to artillery and direct fire. Some crew-served heavy weapons (like artillery guns, mortars, or heavy machine guns) that have to be set up in order to fire will not be available. The unit will also suffer penalties in accuracy and rate of fire when firing at the enemy.

When a unit is **Taking Cover**, its troops will go prone and start to seek cover, and its vehicles will move towards hull-down positions. It is a little harder to spot than an Undeployed unit and a little less vulnerable to enemy fire. The unit will also suffer penalties in accuracy and rate of fire when shooting at the enemy and crew-served heavy weapons will still be unavailable.

When a unit **Deploys**, it has spread out into battle formation, its soldiers are prone in whatever cover is available; and vehicles are all hull-down. All crew-served heavy weapons are also set up and able to fire. This improves the effectiveness of your unit, makes it harder to spot, and protects it from enemy fire. Deployed units suffer no penalties when firing at the enemy.

**Dug-In** units have dug slit trenches and vehicle scrapes to improve their cover and concealment.

**Entrenched** units have roofed over their slit trenches to provide protection from artillery fire and are even better protected and concealed.

**Fortified** units are occupying an existing heavy fortification, like a castle or reinforced concrete bunker system. They are well-protected from artillery and direct fire and are very hard to shift.

### Unit and Commander Quality

To find out which are your elite troops, look at Experience, Training, Fitness, Aggro and Stubbornness. These are static values, so you can do this at the start of a scenario or when reinforcements arrive. However, even elite troops can rout if their Morale is low and this can happen as a result of combat and casualties.

The quality of your commanders and their staff is also important. Good commanders/staff will react faster to your orders and will carry them out more competently. Poor commanders/staff will take longer and need more specific direction, and should not be relied on for critical tasks.

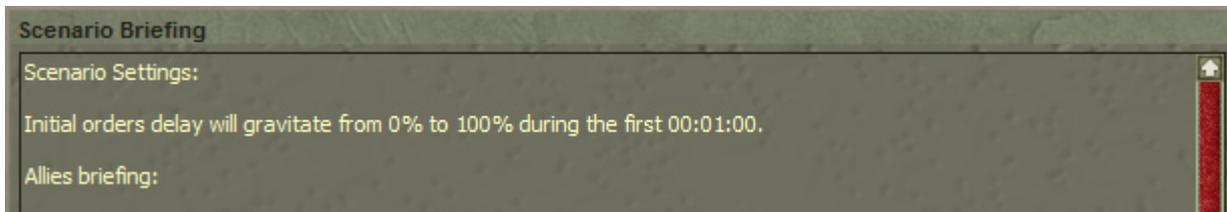
### Orders Delay

If you are playing with Orders Delay turned on ( see [Set Scenario Options](#) ), then command **Capacity**, **Load**, **Unit Delay** and especially **Force Delay** values become very important. These values tell you how well your HQs are coping with the units they have to command, and how long it will take for your orders to take effect. The At-Start delay is given in each side's Briefing.

Orders Delay models the time required for decisions to be turned into orders, and for orders to be turned into

plans. It is based on the size of the HQ issuing the order (so a brigade HQ takes longer than a battalion HQ to send an order down the chain). This is modified by the movement type of the sender and the receiver and the distance between them. Finally, one-third of the duration is modified by the quality, condition and staff load of the receiver, while two-thirds of the duration is modified by the quality and condition of the effective sender and either the staff load on either the on-map boss (for orders issued by the human player) or on the sender (for tasks issued by the AI).

Some scenarios have an Initial orders Delay modifier that magnifies the orders delay sometimes several times longer than normal. This represents the side being caught completely by surprise and cut off from communications to the upper HQ (like the Americans were on December 16th in the battle of the bulge.) The effects of this added delay can be significant - your units may not respond to your commands for several hours. This % multiplier will be greatest at the beginning of the scenario and get less and less over time until finally only the normal ( 100% ) delay applies. The initial orders display is shown at the top of the side's briefing.



Don't worry; you don't have to work this out for yourself! Not only can you see how long a particular unit will take to receive an order (it's shown in the Unit Delay field on the Gen Tab), you can even see an estimate of how long it will take a particular HQ and all its subordinates to get moving on a new order by looking at the Force Delay field on the Gen Tab. However, it is quite useful to understand how what you do in the game will affect the orders delay your units suffer.

### Who Sends Orders?

When you issue an order, the game will determine who the effective sender is. This is important because the force size of the sender (battalion, brigade, and so on) is used to determine the base delay period. The condition and effectiveness of the sender, in particular the Staff Quality, are also used to modify two-thirds of the base delay.

- ⊕ The sender is the most immediate organic superior, of at least two levels up, within Command Range for that force size

If you issue an order to a company, if that company's brigade HQ is within 8000 metres then it will act as the sender. If the brigade HQ is more than 8000 metres away, but the company's divisional HQ is within 16 000 metres, then the divisional HQ will act as the sender.

These command ranges are only a guide and will vary from unit to unit for a whole range of factors. For example, if either the sender or receiver is non-motorised, then the Command Range is reduced by one-quarter and the total orders delay is increased by one-third.

Table 5 - Standard Orders Delay

Force Size	Mot Duration	Non-Mot Duration
Army Group	150	200
Army	120	160
Corps	80	110
Division	60	80
Bde/Regt	40	60
Bn	30	40
Company	20	30
Platoon	20	30
Squad/Section	20	30

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Because the base delay increases as the force size of the effective sender goes up:

- ⊕ Keep your units near their organic superiors, even if you are issuing orders directly to them.

### Distance

Another factor in Orders Delay is distance. The further away a unit is from its HQ, the longer it will take to receive orders. Distance has more of an impact if the HQ issuing orders is not motorised (either tracked or wheeled), because motorised units generally have more powerful radios – and more of them! Foot and horse-drawn units often have to rely on runners to get orders through so their subordinates need to keep closer.

Distance is always calculated between the receiver and the effective sender. This is another reason to:

- ⊕ Keep your units near their organic superiors.

Table 6 - Standard Command Range

Force Size	Mot	Mot	Non-mot	Non-mot
	Eff Range	Max Range	Eff Range	Max Range
Army Group	60,000	80,000	45,000	60,000
Army	37,500	50,000	28,000	37,500
Corps	18,750	25,000	14,000	18,750
Division	12,000	16,000	9,000	12,000
Bde/Regt	6,000	8,000	4,500	6,000
Bn	3,000	4,000	3,000	3,000
Company	1,500	2,000	1,125	1,500
Platoon	750	1,000	550	750
Squad/Section	375	500	280	375

### Staff Capacity and Staff Load

Exercising command over another unit requires a certain amount of attention. There are orders to write, reports to read, and administration to take care of, amongst other things. For this reason there is a limit to how many units any given HQ can effectively command, before the amount of work involved starts to overwhelm the staff available to do it. In the game, the **Staff Capacity** of a HQ (shown by the Capacity value in the Orders Delay Summary) indicates how many other units can be commanded before the HQ staff become overworked and inefficient. The **Staff Load** (shown by the Load field in the Orders Delay Summary) indicates how much work is already being done by the HQ.

The staff load each unit applies to its HQ differs depending on where it fits in the organic structure:

- ⊕ If a unit is directly subordinate to the HQ (for example, a company under its organic battalion HQ) it causes 1 point of load
- ⊕ If a unit is indirectly subordinate to the HQ (for example, a company under its organic brigade HQ) it is worth 2 points of load
- ⊕ If a unit is directly or indirectly subordinate to the HQ's superior (for example, a company attached to a battalion HQ from another battalion in the same brigade) it causes 2 points of load
- ⊕ If the unit is none of the above, it will cause 3 points

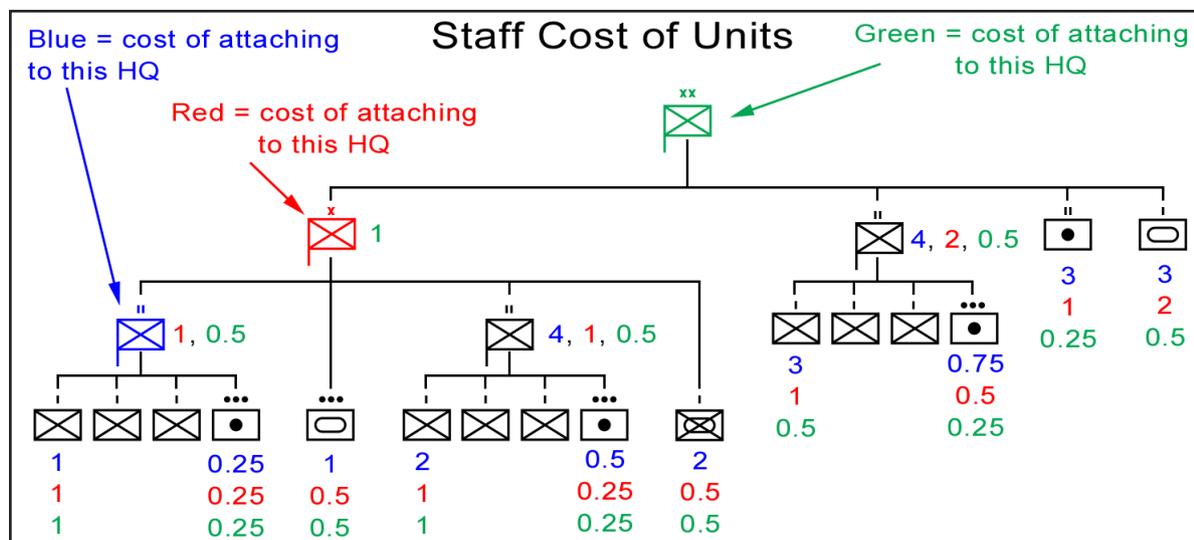
This load is then modified by the size of the HQ and the size of the unit being commanded:

- ⊕ If the unit is the same size as or larger than the HQ (for example, a company attached to another company, or an artillery battalion attached to a company) then its cost is doubled
- ⊕ If the unit is two levels or more smaller than the HQ (for example, a company or platoon, attached directly to a brigade HQ) then its cost is halved

The load is then modified by the type of the unit:

- ⊕ If the unit is neither Line (infantry, armour, or assault engineer) nor an HQ, its cost is halved

The final result is then capped between 0.25 and 4.



Once again, you don't have to work this out for each unit. The Capacity and Load fields will give you a good idea whether a particular HQ can handle additional attachments, and where possible, you should attach units that are near-by in the organic structure.

- ⊕ When you issue an order directly to a unit, the staff load of that unit is always applied to the on-map boss, so the more units you give direct orders to, the greater the load on your most important HQ

The Staff Capacity and Staff Load of the receiver, the effective sender, and (for orders issued by the player) the on-map boss, are all major factors in orders delay. Remember that for orders you issue, the staff load placed on the on-map boss is twice as important as that on the receiver – in fact if your on-map boss is badly overloaded, your orders can take twice as long to get through! For tasks issued by the AI, the same thing can happen if the sender is overloaded. If your receiver is overloaded, the order delay may increase by up to one-half; if both receiver and effective sender or on-map boss are overloaded, your orders could take up to three times as long to be carried out.

### High or Low?

Because your orders will need to pass down through several HQs if you issue them to a senior unit (like a divisional HQ or a brigade HQ), it usually takes longer for your units to start moving when you do this. On the other hand, when you issue orders to lower HQs (like battalions) the response is often quite fast, so there can be some benefit to giving orders directly to lower HQs. However, when you issue a lot of orders you increase the staff load on the on-map boss (which can drastically increase the orders delay experienced by all your units), and you make it harder to coordinate the activities of your units.

### Orders Delay Free Period

There may be an orders delay “free period” at the start of a scenario, in which units can process orders without any delay. The default free period is 60 minutes. However, the scenario designer may set this free period to zero or several hours for one or both sides in the ScenMaker. This is used in some scenarios to simulate the fact that one side has gone in with a ready plan of action while the other has been taken by surprise.

All reinforcements are free of orders delay for the first 60 minutes after their arrival. This simulates the issuing of preliminary orders.

### Mixed-Mode Movement

The performance of a unit across different types of terrain is determined by the unit **Mobility Type**.

#### Unit Mobility Type

Every unit in the game has a Mobility Type that determines how fast it can move over different types of terrain. There are two Mobility Types:

- ⊕ Motorised – this includes all units that can be completely transported in the unit’s own trucks, tracked vehicles, or on motorcycles
- ⊕ Non-Motorised – all other units, including foot infantry, horsed cavalry, and horse-drawn units

Many units that have some vehicles (but not enough vehicles to carry all the personnel in the unit) are classed as Non-Motorised. Each Mobility Type has advantages and disadvantages. Motorised units move faster over most terrain types than non-motorised ( see [Annex E – Terrain Effects Chart](#) ), suffer less fatigue ( see [Morale, Fatigue and Cohesion](#) ), and have larger command ranges and reduced orders delay ( see [Orders Delay](#) ). However, non-motorised units can reach more areas, climb slopes greater than 30°, cross minor rivers, and enter forests and marshes that are impenetrable to motorised units. Motorised and mechanised infantry units will dismount when in contact with the enemy. However, they are treated as motorised and restricted accordingly even when dismounted.

## Force Mobility Type

When a Battlegroup contains both motorised and non-motorised units, it will move using only terrain that both types can traverse. When motorised and non-motorised units travel in formation, there is often some shuffling of positions due to the faster movement speed of the motorised units.

You need to be aware of this when issuing orders to your units. Some objectives may be located in areas that motorised forces cannot reach, so you will need to ensure that only non-motorised units are assigned to secure these locations.

- ⊕ If you order a force to move to an area that it cannot reach, the order location will snap to the nearest reachable location

You will also receive a ( routine ) message warning you that the order location has been adjusted. See [Identify Impassable Terrain](#).

If you create a temporary battlegroup using both motorised and non-motorised units, and the non-motorised units are currently located on terrain that is impassable to motorised movement, the battlegroup will designate a point on the route where the motorised units can join the formation. The non-motorised units will then move in one group to this location, while the motorised units move there in another group. Once the force is all together, it will move off in formation.



In cases where a particular unit cannot reach much of the locations along the superior's route, the AI may decide that is better for that unit to move independently to the ObjLoc rather than trying to move in formation.

## Formation and Movement

When a unit is moving in Road Column formation, it will gain movement bonuses from roads (and for non-motorised units, tracks as well) on its path. When it is moving in any other formation, it will not receive any benefit from roads or tracks. Instead, its movement rate will be determined by the characteristics of the terrain underneath the road or track. Units may automatically change out of road column if threatened and thus slow down dramatically.

## Objectives, Orders, and Tasks

**Tasks** are the building block on which all commands are given and plans developed. In essence they are a set of instructions consisting of a Subject ( who is performing the task ), an action or Task Type ( the type of action to be performed ) and an objective or Location ( the destination or place on the map where the action is to be performed – this is often referred to as the objective location or ObjLoc and not to be confused with Objectives as described below ).

There are also other parameters to a task, such as formation, speed, route etc.

**Objectives** are those tasks that each side must achieve in a scenario in order to secure victory. In effect, these are orders given to you, the player, before the scenario starts. They are created in the ScenMaker by the scenario designer.

**Orders** are those tasks you issue to your units during a game to have them carry out actions like moving, attacking, firing or defending.

**Unit Tasks** are those tasks created by the AI for each and every unit. These are the actual task they perform and they may differ from your orders. For instance, you may order a unit to Defend at location X, but the unit is currently at location Y, so it must first Move there. Once there it will then Defend. You don't need to issue two orders, just the one Defend order. The AI manages the rest.

## Objectives

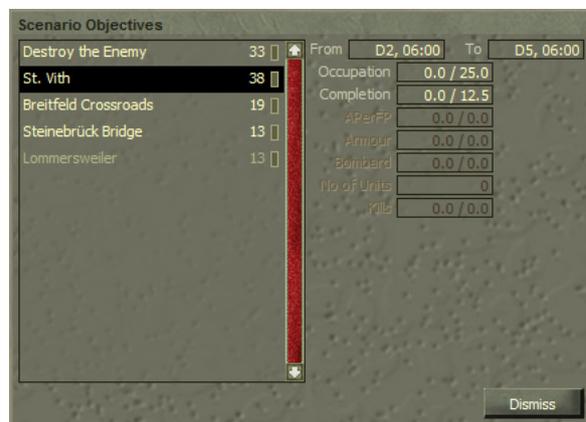
Objectives are those tasks you have been ordered to complete. Their Battlemat icons are coloured blue on a white background. Upon selection the background changes to yellow and a yellow perimeter is drawn around the objective icon, indicating the area that must be secured. For details on how to see a list of your objectives in the Sidebar refer to [Display the Objectives List](#).

Note that **inactive** objectives (those finished, yet to start, or no longer relevant) are not displayed on the map, but will be in the Objectives (OBJ) dialog. You can show their icon and perimeter on the map by selecting them from the Objective list.

Each objective is worth a certain number of Victory Points or VPs ( see [Victory](#) ) that indicates how much achieving it will contribute to your success. The maximum VPs available for each objective is shown in the Obj Tab, next to the name of each objective. Small vertical progress bars are also shown next to each objective, and as VPs are attained, these will fill up.

Each objective type has slightly different achievement conditions; as listed below.

Objectives have Start and End times associated with them. When you select an objective in the Obj Tab, the **From** field indicates the objective start time and the **To** field indicates its end time.





Some Objectives may cause the Game to **automatically end** once they are completed. These will have the letters “AE” inserted before their VP amount in the Objective List. The game ends no matter what the current VP total is, so be wary about exiting all your forces only to discover that you needed to also secure an on-map objective to secure that decisive victory.



Other objectives are linked meaning that you only have to achieve one of these to secure the assigned points. In other words you have a choice of alternatives. In some cases though it may be wise to secure more than one of the choices, just in case.

Note that objectives are not necessarily symmetrical. Just because one side has to secure a location doesn't mean the enemy side has to. Each side has its own list of objectives with their own weighting of priority and VPs. One of the things to consider in conducting your at-start appreciation is discern the enemy's objectives. The briefing will usually give you a pretty good idea. But good commanders watch the flow of battle to see which locations the enemy is heading for. Remember that you must not only maximise your VPs you must minimise the enemy's VPs.

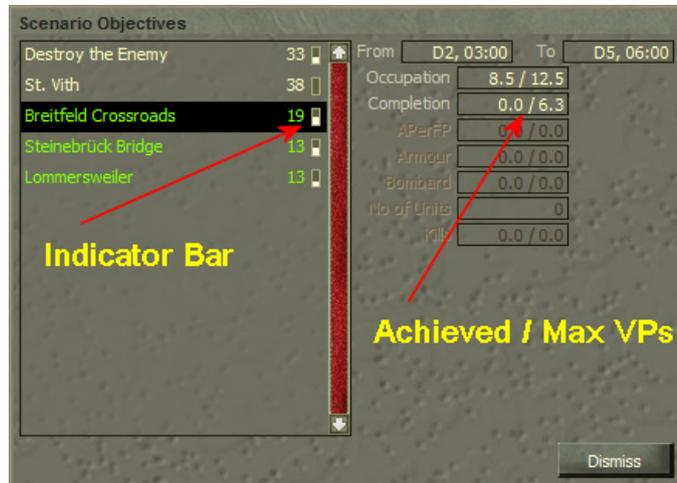
Another thing to do in your at-start appreciation is to see if there is any pattern in which objectives are active and for how long. In a number of scenarios the designer has set the objectives such that they are grouped with one group being required for a certain period or “phase” while others for a subsequent period or phase. Phases can help you organise time and the allocation of resources. Plan ahead to ensure that you secure vital objectives on time to maximise your VPs.

## COMMAND OPS 2

### Completion and Occupation

There are two ways to get VP for achieving an objective. Some objectives will require you only to achieve them by the time they end; the points you get for this are called Completion VPs and the number available for the selected objective is shown in the Completion field on the Obj dialog. For example, if an objective is worth 10 Completion VPs and ends at D2, 12:00, then you must be in control of that objective at that time to get the points.

Other objectives will require you to gain and maintain control of them from the start to the end time to get the maximum points available. This kind of points are called Occupation VPs and you will get a proportion of them for each minute you control the objective between its start and end times. For example, if an objective is worth 10 Occupation VPs, starts at D1, 12:00, and ends at D2, 12:00, you need to control the objective continuously for that whole time to get the full 10 points. If you control the objective from D2, 00:00 until it ends, then you would get 5 points (since you've controlled it for half the required time).



### Secure Objectives

To achieve a **Secure** objective, you need to fulfil all the following conditions:

- ☞ Have at least one unit within the objective perimeter
- ☞ Have a 10 : 1 superiority in Combat Power over the enemy within the objective perimeter

Routing units of either side do not count for the purpose of achieving a Secure objective.

### Defend Objectives

**Defend** objectives are very simple – to achieve a Defend objective:

- ☞ Have at least one unit within the objective perimeter

There are no Defend objectives in the official scenarios.

### Secure Crossing Objectives

To achieve a **Secure Crossing** objective, you need to:

- ☞ Prevent the closest crossing being blown

- ☞ Secure the objective perimeter (as for a Secure objective)

You don't need to unprime a crossing to secure it (but it's a good idea anyway!). If the enemy demolishes the bridge then you need to rebuild it to the original level. Until that is done you will not get any points for occupation or completion.

### **Construct Bridge Objectives**

To achieve a Construct Bridge objective:

- ☞ Build a bridge on the closest crossing point
- ☞ Secure the objective perimeter (as for a Secure objective)

Once you have built the bridge, the objective type will revert to Secure Crossing.

In some cases you may have a Secure Crossing objective where the bridge starts off demolished. In this case, you will need to rebuild the crossing before getting any victory points. The objective icon in this case will still appear as the normal Secure Crossing icon, but you will notice that when you secure the area you will not achieve the objective.

### **Deny Crossing Objectives**

You will have a **Deny Crossing** objective where your role is to prevent the enemy using a particular bridge. To achieve a Deny Crossing objective, either:

- ☞ Secure the objective perimeter (as for a Secure task) while the crossing is still intact, or
- ☞ Blow the crossing and prevent the enemy constructing a new one

Note that you cannot demolish a bridge directly. You need to prime it and wait for the enemy to approach and pray your nearest unit is successful at blowing it.

## COMMAND OPS 2

### Exit Objectives

You get points for Exit objectives by ordering your units to exit at the objective perimeter, where they will be removed from the map. As each unit of the force enters the objective radius, it will disappear and you will get a message telling you it has exited. Once exited those units are gone and you can't get them back.

The force you have exited will be compared to the required force to calculate your point score. The score is determined by three values: APerFP, Armour, and BombFP ( see [Firepower and Armour](#) ). If you meet or exceed the objective requirement in each of these areas, you get the full value of any completion points for that objective.

Exit objectives do not have occupation VPs.

- ⊕ Once you have exited the required amount of units, you cannot get any more points from an Exit objective

You can exit a larger force than is required at an exit objective. You won't get any credit for this, however, and you can't make up for a shortfall in one value by exiting extra in another (for example, you can't make up for missing APerFP by exiting extra Armour or BombFP).

You can check the force requirements for each exit objective:

- ☞ Select the objective in the Obj Tab on the Sidebar

The force requirements will be listed under the objective list.

In the official scenarios, there will also be an item in the Side Briefing for every side that has an exit objective telling you roughly what kind of force you need to get off (for example, "exit one battalion of tanks and two battalions of motorised infantry").

**Auto-End** - If an Exit objective has the "AE" letters appearing in the list on the Obj Tab this means that the game will automatically end once the objective has been completed – ie enough units have exited to satisfy the requirements. It will end regardless of whether you have achieved other objectives or not.



## Destroy the Enemy

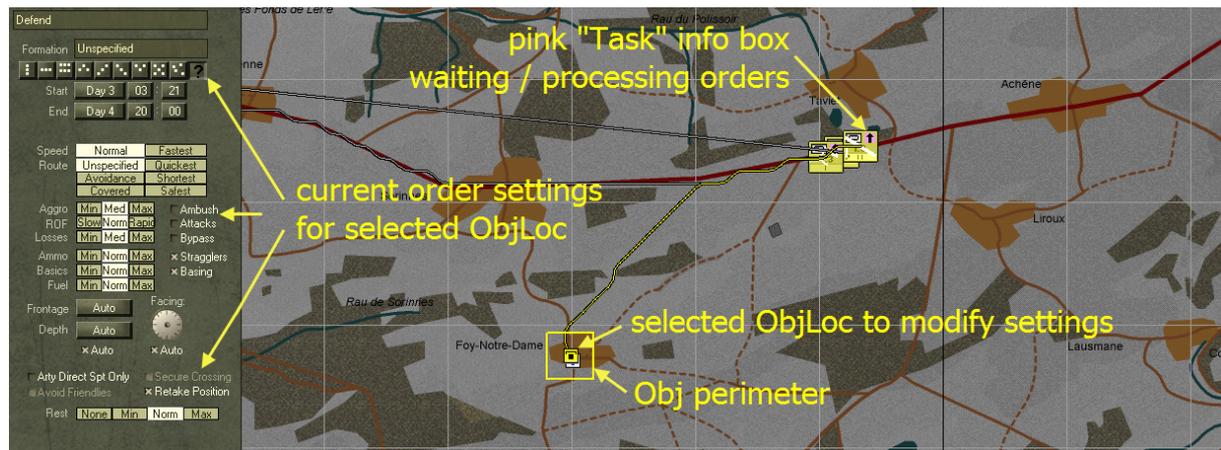
The **Destroy the Enemy** objective does not appear on the map. For this objective, you receive VPs for destroying enemy personnel, armoured fighting vehicles (AFVs) and artillery (guns). The amount you receive for each man, vehicle or gun destroyed depends on the starting enemy strength and on the scenario; in some scenarios you will have to nearly wipe out the enemy force to get the full Destroy the Enemy VPs, but in others you can do so by eliminating even a small proportion of the enemy. The proportion of the enemy required to achieve the VPs is specified as “% of Kills”.

If the Destroy the Enemy objective has 0 VPs, then no VPs will be awarded for destroying enemy units. In this case, the territorial objectives are everything. Remember that the enemy may well receive VPs for damaging and destroying your units – so keep your own casualties to a minimum.

## Orders

Orders are instructions you assign to your units. Issuing an order to a single unit places that unit under your direct command. Where you issue one order to multiple units, you place the senior unit under your direct command and it will control the others. Units under your direct command are indicated by the Command Bar on their unit icon being coloured white.

If you have Orders Delay turned on, it will take some time for your orders to reach units and be carried out. When you issue an order, if the unit info filter on the Display Toolbar is set to show Tasks ( ie F1), the Info Box background will go pink until the unit has received and processed the order. See [Info Box](#), [Work with Orders Delay](#), and [Orders Delay](#) for more information.



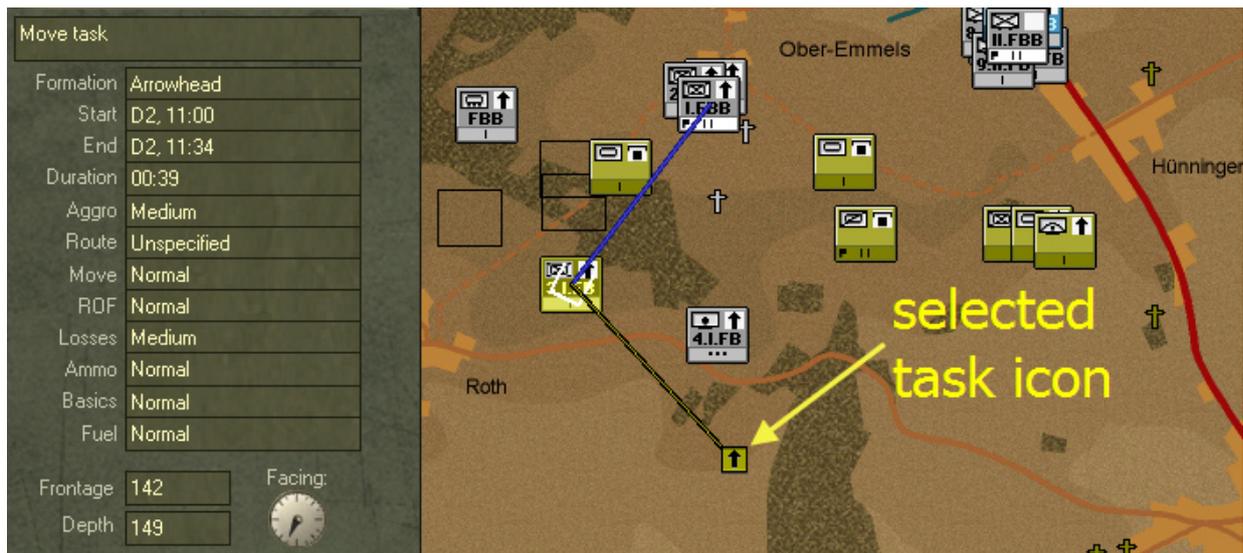
You can issue different types of orders and you can modify a number of settings that control the way your units will carry out those orders. See [Command Your Units](#). For every order, you will set an Order Location ( often referred to as the objective location or ObjLoc ) which is the map location at which your units will carry out the order (whether this means moving there, attacking that location, or firing a bombardment onto that location). For most orders you may also set Waypoints, which are points through which your units will move as they head to the order location. In fact, the Order Location or ObjLoc is the last waypoint in the order's list of waypoints.



## Unit Tasks

Unit Tasks are those instructions that units generate for themselves and their subordinates to carry out the orders they have been given. For instance, a unit ordered to Defend a location some distance away, will generate a Move task so that it can get to the order location and then it will generate a Defend task at the order location.

Tasks are displayed using the same icons as orders and waypoints, but these are distinguishable by their black on grey colour. If you select a task icon, information for that task (including start and end times and various settings like formation, speed, and routes) will be displayed in the Sidebar.



- ⊕ You cannot change the settings for unit tasks; you can only edit the orders that caused the tasks to be generated

To select a unit task see [Select a Unit Task](#).

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# Understanding Game Processes

## Planning

Planning lies at the heart of the CO: BFTB's artificial intelligence (AI) system. The basic premise is that you, the player, should be able to give orders to subordinate forces, knowing that they will develop and execute a reasonable plan of action. The next premise is that your subordinates in turn will send orders down the line, and at each level the commander will develop and execute a reasonable plan.

You should not rely on your computer-controlled commanders to come up with the perfect plan. They may surprise you at times and at times they may get it wrong – just like real commanders!

The third premise is that individual units should be relied on to react in a credible manner to enemy contact and actions – to take cover when fired upon, and to fire and move when in contact.

The fourth premise is that your units should organise their own logistics, requesting supplies as needed and (for bases) allocating supplies and truck space in accordance with reasonable priorities and as far as enemy action allows.

With these premises in place you can focus on what a good commander should be doing – determine objective priorities, assessing the situation, enemy intentions and likely reactions, determining the best approach and method, developing a plan with detailed instructions for one or two levels down, and reacting to enemy developments which impact on your plan. You should also keep in mind the need for secure supply lines and the overall logistic state of your troops – without needing to count bullets and beans!

## Getting Orders and Issuing Tasks

So how does the AI do all that? First off, let's look at the procedure for giving and receiving orders. When you give orders to a unit, the unit will process those orders. This involves determining if these contain new tasks or modifications to existing ones, determining if it is still feasible to achieve the task and determining if a new plan needs to be developed.

A force may **abandon** an order if it physically cannot be achieved – the bridge is blown, it can't find a valid route to the order location, or there is insufficient time remaining in the scenario. In such a case, the subordinate commander will send you a message advising that he has abandoned your order. He will then hold position and await new orders.

Where a completely new plan needs to be developed the unit commander does so. Otherwise, the modifications to the existing plan (for example, an adjustment to timings) are made.

In either case, the commander then determines if any subordinates need to be issued tasks to carry out the order. If so, he then sends those tasks to his direct subordinates – i.e. those on the next level down. For example, a brigade commander would send tasks to his battalion commanders and to any other support troops under direct command, such as an artillery battery.

Depending on your settings, there may be a delay built in before the subordinates receive their orders ( see [Orders Delay](#) ). In the meantime, the subordinates will keep on carrying out their current tasks, until the new ones arrive. They in turn process the new tasks and the cycle repeats.

### Developing the Plan

Developing a plan, is fairly straight forward. The factors are noted, the available options determined, the best option chosen, resources allocated, timings worked out etc. However, the exact method varies according to the task type and the particular circumstances.

Most orders are fairly simple, involving just one or two tasks. If you order a force to Move to a location, it will usually create one Move task for the force to get there, and on arrival, it will create Defend tasks to secure the immediate area. If the force is widely separated and cannot readily move as one group, it may create multiple Move tasks.

Where the order is for a static task – like Defend – and the force is not already at the order location, a preliminary Move task will be performed. Upon arrival, the force will then perform the static task. Attacks and Probes are more complex, involving multiple concurrent and sequential tasks ( Advance to FUP, FUP Reorg, Assault, Final Reorg, Defend for the Reserve, and so on ). For details see [Seize an Objective](#).

### Routes

One of the more complex routines in developing plans is the determination of the best route. CO: BFTB uses a number of route-finding algorithms corresponding to the different route types that you can select when giving your order ( see [Change Formation Type](#) ).

The **Shortest** path is a direct line from start to end, unless this path traverses blocking terrain. Where the blocking terrain is a waterway it will take a direct line to the closest crossing and from there to the destination. Where it is some other terrain like forest, which is impassable to motorised units, it will take a direct line to the blocking terrain and then skirt around it.

The **Quickest** path is the one that will take the least amount of time, ignoring any effects for enemy units or firepower influence.

The **Avoidance** path is the default method and is the route that will be the quickest after factoring in enemy units and firepower influence.

The **Covered** path is a line that will be the quickest while sticking, where possible, to covered terrain (such as woods or urban areas), but ignoring any effects for enemy units or firepower influence.

The **Safest** path is the one that will be the quickest while sticking, where possible, to covered terrain (such as woods or urban areas), and avoiding enemy units and firepower influence.

Note that the intelligence you have on enemy units and firepower influence is updated periodically (each minute ) according to what your units can see. You cannot avoid an unseen enemy (see [Intelligence](#)).

Note that route finding is one of the major means by which the AI can be “smart”. Often they are the means to determine the optimum course of action. When developing an attack plan for instance there are many routes

calculated. However, calculating routes is CPU intensive and can take a long time. Occasionally the game may pause during planning while extremely long routes are generated. This is perfectly normal - don't panick.

### Formations

The formation adopted by a force can have a major impact on its performance and the achievement of its task or orders. Formation determines where subunits will be deployed and hence what ground they will cover, what enemy units they will detect and be able to fire upon. It also determines how visible and vulnerable they will be.

The usual default formation type is Unspecified, which means that the commander will determine which is the best type when he develops his plan or reassesses. In doing so, the commander will factor in the need for speed, security, frontage and firepower with the nature of the terrain and known enemy threats. Each type of order or task, and each formation type, has its own bias toward speed, security, frontage and firepower.

A formation with a wide frontage (line, arrowhead, or echelon left and right) can be used to sweep an area and / or to provide maximum firepower to the front, but usually does so at the expense of speed and control.

**Road Column** is the default for Move tasks. Once enemy contact has been made, a more balanced formation type like **Arrowhead** may be chosen.

**Line** is the default for Assault tasks. But if there are significant enemy forces to the left or right, **Echelon Left / Right** may be chosen to provide greater security to the threatened flank. If attacking on a narrow front, or when mixed forces are attacking into covered terrain, **Successive Lines** may be chosen to provide maximum depth and protection to the assault.

**Vee** is the default for Defend and most static tasks. **All Round Defence** may be chosen when a force is confronted with enemy threats from multiple directions. **In-Situ** is the default for Rest and Reorg and is used when a force is already well deployed (dug-in or better).

For details see the [Annex B – Formation Effects](#).

After determining the type of formation, the commander will then allocate his subunits to each of the **formation subgroups**. Subgroups come in four varieties: Hubs, Guards, Line Fillers, and Support Fillers.

The commanding unit will in most cases become the Hub subgroup. The other subgroups take their positions from the Hub.

For most formations there are three Guard subgroups. In Road Column there will be an Advance Guard, a Main Guard, and a Rear Guard, while most other formation types have Left, Centre and Right Guards. The Guards are the parts of a formation that are intended to do the bulk of the fighting and are positioned to that end.

Only HQ, line and line-support units can be allocated to Guard subgroups. If there are insufficient units to populate all three Guards, then the number of Guards will be reduced. If there are excess line and line support units, these will form Line Filler subgroups (positioned between the Guards), while support-types units will form Support Filler subgroups, located behind the Guards and (hopefully) out of direct contact with the enemy.

Certain Guard subgroups will have particular priorities for force allocation. Recce units are favoured for the Advance Guard for Road Column formation, while armoured and infantry units are favoured for the Centre Guard of Line formation.

### **Resource allocation**

In allocating units to tasks and formation groups, the AI will take into account unit capabilities, type, combat class, strength, proximity, firepower and effectiveness. It will avoid allocating non-line units to assault tasks and to formation guard groups (though it may assign line-support units). It will not allocate units to a task if they do not have the capability to carry out the task.

In general, it will try and allocate the best unit to the highest priority task / group. The best unit for one task will not necessarily be the same as for another task. For instance, the best unit for an assault may be a fresh line infantry company with good anti-personnel firepower, while for a bombard task it may be an artillery unit with high bombardment firepower, regardless of fatigue.

When a replan is done, a different force might be allocated to a particular task or formation subgroup. This is why, from time to time, you may see units reshuffling from the rear guard to the advance guard as tired or depleted units are rotated back to have a rest and a stronger or fresher unit moves up to take the lead.

### **Time and space**

When you issue an order to a force, it will normally run from the current game time to the end of the scenario. Fire and Bombard orders are an exception and by default run for just 10 minutes. However, when your subordinates develop their plan they will estimate the duration required and set their tasks to run for a specific period. During reassessments, they may determine that they need more or less time, in which case they will either advance or set back the timings of their tasks as required.

For instance an attacking force that reaches its FUP early will often “crib” or bring the timings forward so that it starts the Reorg and subsequent Assault as soon as possible. Similarly, if the allotted time for the Assault looks like running out it will “slip” or set back the end time so as to provide more time to achieve the objective.

## Reassessment

Periodically throughout the game commanders will reassess their plan, taking into account changes such as enemy threats, blown bridges, tired units and so on.

The period between reassessments varies. The main factor is force size – a Division may only reassess twice a day, while a company may do so every 2 hours.

Commander efficiency and judgement also affect the duration between reassessments. Motorised units tend to reassess more often. Moreover:

- ⊕ a reassessment may be brought forward if an unexpected enemy threat develops or a subordinate reacts.

As a result of the reassessment, the commander may modify his existing plan, develop a new one or abandon it. For instance he may decide to bypass enemy ahead by regenerating his route. If he is behind schedule, he may order his forces to force-march. If he was ordered to delay, he may decide to withdraw from his current blocking position because the enemy has outflanked his force. If the bridge is blown, he may abandon his Deny Crossing task.

- ⊕ Forces under your command will not launch Attacks or Probes on their own initiative; you will have to order them to do so

Forces under your command will not call off an Attack unless they break (retreat or rout) or you order them to. They may reassess that the attack is not going well; in this case they may decide to conduct a full replan, including withdrawing to the FUP and starting the whole assault again. However, a force ordered to Probe may **Bunker Down** – Defend nearby – if it decides during a reassessment that it is seriously threatened.

## Reactions

As your units carry out your orders they will at some point come into contact with the enemy. At this point, they will start to react – sometimes in ways you may not want! As they encounter enemy units they become more cautious. They may **halt** temporarily before pressing on. They may **fire** at the enemy and **call in artillery support**, if available.

After suffering casualties their morale may drop, they might decide that discretion is the better part of valour, and **retreat** a short distance. In doing so, they will try and retreat to the safest nearby covered terrain. There they will **recover** before continuing. If a unit is in good defensive terrain, such as a town, and to retreat would force it to move out into the open where the enemy firepower is strong, it may instead **retreat in place**. In which case it will stay put and its rout status will go straight to Retreat Recovery. If things get really bad, they may **rout** in panic and head for the hills or the woods or the town or any safe place a long way away from the enemy. After a much longer period they will rally and recover. See [Rout Status](#) for more information about these reactions.

If a unit cannot continue with its order, it may **bunker down**. This can happen when a Probe encounters stiff opposition, when a bridge gets blown, or when a force cannot reach its order location. In these cases, the force will

Table 11 – Standard Reassessment Times

Unit Size	Reassessment Time ( hours )
Army	24
Corps	24
Division	12
Brigade	6
Battalion	4
Company	2

temporarily Defend in a safe nearby location. When this occurs, the words “bunkering down” will appear in the left text box under the unit’s name in the Side Bar.

To review how a unit has reacted:

- ☞ Select the unit
- ☞ Open its Force Data dialog
- ☞ Select the Log Tab.



## Intelligence

One of the first things you will note when you play CO: BFTB is that you do not have perfect knowledge of your enemy’s dispositions and movements - far from it!

Each minute of the game, all units check to see if they can spot enemy units. If so, and the quality of their sighting is sufficiently high enough, they may update the intel database of enemy units for the side. This is then reflected in the enemy unit icons and the info displayed in the Side Bar when you select an enemy unit icon.

It is important to remember that:

- ⊕ the information provided in the intel reports are **ONLY ESTIMATES**.

The accuracy of the estimate depends on the age and reliability of the report – see [Assessing a Sighting](#).

## Spotting and LOS

Before an intel report can be generated, one of your units has to first spot or see the enemy unit. This requires a line of sight (LOS). A LOS is a straight line, traced from the forward edge of the spotter to the forward edge of the enemy unit. A LOS is blocked if it traverses solid ground or terrain features such as dykes or embankments. So if you want to maximise your chances of spotting the enemy, deploy your units on top of high ground.

The probability of detection is reduced as the LOS traverses covered terrain – vegetation, urban, factories, and so on. Dense cover (like woods and cities) will quickly reduce visibility to the point where the LOS is blocked – you may see an enemy unit at the edge of a wood, but you are unlikely to see one a few hundred metres within.

The probability of detecting the enemy is also reduced if his unit is deployed or better, thus making the best of the available cover. On the other hand, it is increased if the unit is moving and even more so if it is firing ( see [Deployment](#) ).

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The condition of the spotting unit also affects the probability of detection. It is reduced if your spotting unit is suppressed, routing, moving or resting and also if it has poor effectiveness (cohesion, freshness, morale). See [Combat Effectiveness](#) for more information on these factors.

Bad weather and darkness will also reduce the probability of detection ( see [Check the Weather](#) ).

Spotting is therefore not necessarily reciprocal. For instance, a fresh, well-organised unit with good morale that is deployed in a village on a hill may readily spot a tired enemy unit advancing a 1000m away in the valley below, while itself remaining undetected.

See [Assess Line of Sight \(LOS\)](#), [Check for Enemy Threats](#), and [Night, Weather and Visibility](#) for more information.

### Assessing a Sighting

Sightings of enemy units are rated by **Age** and **Reliability**. Age is given as either Current (sighted within the last five minutes), Recent (sighted within the last hour), or as the number of hours since the enemy unit was last sighted. Reliability is displayed as either Excellent, Good, Poor or Vague.

Some of the things which may be inaccurate about an unreliable or outdated intel report are:

- ⊕ The location
- ⊕ The type of unit (a mechanised infantry unit may be reported as a tank unit)
- ⊕ The size of unit (a platoon may be misreported as a company)
- ⊕ The strength of the unit and its equipment
- ⊕ The state of the unit (deployment status, rout status, current activity, fatigue, morale and so on)



### Age

If no update on a sighting has been received for a while, the report on that enemy unit will become stale and eventually will be discarded as worthless. When the report becomes stale its icon becomes partially “greyed out”. When it is discarded, its icon is removed from the Battlemap.

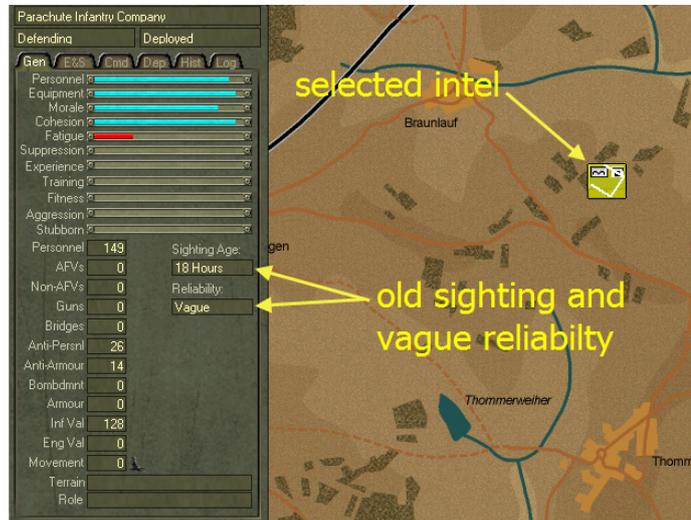
The amount of time it takes for a report to go stale depends on the quality of the sighting and what action the enemy unit was reported to be doing.

Reports on moving enemy units age quickly and may go stale after only an hour and be removed after around two hours. Reports on defending enemy units may remain active for many hours.

You can filter out old reports – see [Intel Filter](#).

### Reliability

Spotting an enemy unit is one thing, assessing what type of unit it is, how strong and effective it is and what it is doing is yet another.



The amount of details you get about a spotted enemy unit depends on the quality of the sighting, the proximity of friendly units and the judgement of commanders. Spotting an enemy unit deployed in woods from a distance of 2000m is likely to provide you with the location, the approximate force type and a poor estimate of its strength.

After advancing towards the enemy unit and receiving fire from it, your intel on the enemy may be updated to provide an exact force type and a much better estimate of its strength.

During the final assault onto the enemy, as your units capture enemy soldiers, investigate bodies etc, the intel level will be enhanced to the point where you may know the specific identity of the unit, along with a very good estimate of its strength and effectiveness.

The amount of details you may know about enemy units at the start of a game depends on what the scenario developer has set. Sometimes you may have no knowledge whatsoever. Other times you may have pretty good intelligence.

# Supply

## Ammunition

When ammo levels get low a unit will ration its expenditure and reduce both its rate of fire and the probability that it will engage long-range targets.

If a unit runs out of ammo of a particular type, then it cannot fire those weapons that use that type. It can still fire other weapons that do have ammo remaining. It is not uncommon for mortar, artillery and rocket units to run out of HE ammo for their guns. These units carried only a very limited amount.

You can **conserve ammunition** by setting the Rate of Fire to “Slow” when you order your units. Remember, that gun type units ordered to defend may be called upon to provide **on-call-support**. To prohibit this, you will need to order your artillery units directly to Rest instead of Defend. In this way they stay under your direct command and will not be called upon to provide on-call-support.

## Fuel

If a motorised unit runs out of fuel, then it cannot move – no gas, no go!

## Basics

Units that run out of basics, fatigue quickly and recover freshness slowly. Their morale drops and overall effectiveness is reduced, thus reducing their combat capabilities and making them more likely to run away or surrender.

## Resupply

Resupply is modeled on a push-pull system.

### The Push Side ( supply )

Supplies are pushed onto the map in accordance with the resupply schedule set by the scenario designer in the scenario editor application ( ScenMaker ). To review the supply arrival schedule within the Game see [Review Supply Arrival Schedule](#).

They enter via **Supply Entry Points** ( SEPs ). If these are road SEPs then they are transported directly to the on-map Bases that draw directly on the SEP. The transport capacity for this comes from off-map ( it is assumed that the higher echelon Bases off-map provide this ). If the SEP is an airfield or airdrop SEP, then the supplies are offloaded at the SEP and remain there in a Dump until transported using the transport capacity of the drawing on-map Bases.

All supplies arriving from off-map do so in bulk – ie they are measured in kilos/litres of ammo, fuel and basics. Fuel and Basics remain in litres and kilos throughout the resupply system, even at the unit level. However, once

ammo supplies are delivered to a unit it is converted into rounds of a particular type – eg 2000 kilos of ammo may end up equaling 200 rounds of 81mm HE for mortars plus 5000 rounds of 7.92 ball for rifles and machine guns. It is assumed that the logistic staff manage this minutiae.

Supplies are delivered to the top echelon of on-map Bases and accumulate there until resupply is requested from their drawing units and subordinate Bases.

### **Bases, Depots and Dumps**

Each Base has an integral **Depot** that manages the resupply requests, transport columns and stockpiling of supplies at its integrated supply **Dump**. A Base can stockpile an unlimited amount of supplies at its Dump. However, it has a limited capacity to move these. If forced to retreat it will lose half its current stocks automatically plus any excess it cannot transport. So:

⊕ forcing an enemy's Base to retreat is good while having your own Base retreat is bad.

To review the current data for a Depot see [Review Depot Data](#).

### **The Pull Side ( demand )**

Each unit manages its own supplies. These are expended as and when required. Basics are consumed every minute regardless of activity. Fuel is consumed each time a unit moves. Ammo is consumed each time it fires – see [Review Unit Supplies](#).

Resupply is affected by requesting it from the unit's Supplying Base – see [Determine Supplying Base](#). This is done routinely at least once per day during the **Resupply Determination Event**. This occurs twice per day at 06:00 and 18:00. However, the scenario designer may specify that a side is only to have one of these per day at 18:00. This reflects the case where a side without air superiority chooses to limit the losses from interdiction and resupply only at night.

During the Resupply Determination Event all units submit their routine resupply request to their Supplying Base. Its Depot then prioritizes these and starts processing them one at a time. A maximum of one request is processed per minute of game time. The delay between processing can be longer than a minute. This way the dispatch of supplies is spread out throughout the day.

In processing the request the Depot will assess a number of factors including the amount of supplies requested, current stocks available, any rationing in force, available transport and handling capacities, and whether a valid supply route can be traced. If it cannot fulfill the request at that time it will either reject or suspend it. A suspended request stays in the queue and may get processed later.

If accepted, a transport column is raised, personnel ( drives/loaders) and vehicles assigned to it along with the amount of supplies it is providing ( these may be less than that requested ). A supply route is determined and a Supply Transport Event scheduled.

To reduce the processor load, the transport column is not managed like a regular unit. So it does not move along the route each minute. Rather, when its scheduled Supply Transport Event occurs it reviews the situation at that time and determines whether or not it can get through to the unit. If not, it will abandon and try to return to the Base. If it can get through, it determines any losses due to enemy threats to the route and deducts these from the

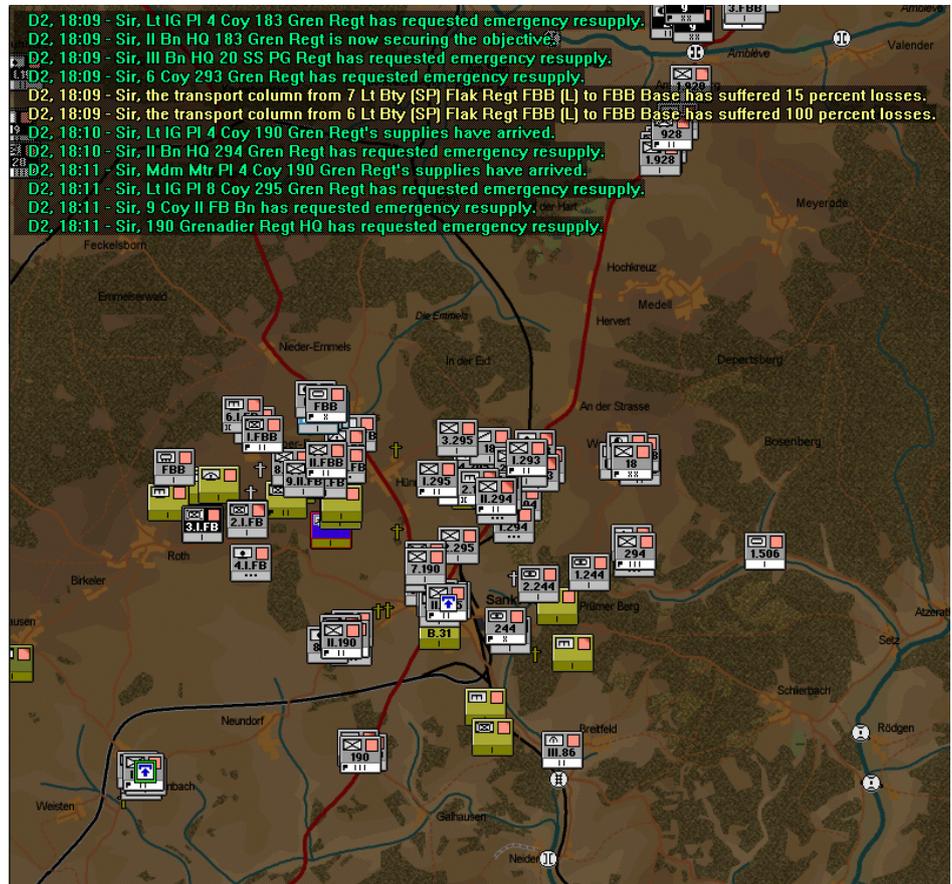
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assigned personnel, transport and supplies. It then delivers the supplies to the unit ( converting ammo into actual rounds as appropriate ).

At this time you will receive a message on screen ( or in the Message Log dialog if you have that open ) informing you of the delivery. This will be a routine message if all goes well. However, if it suffers losses it will be upgraded to Urgent and if it's abandoned altogether it will be Flash.

It then determines if it can return safely to the Base ( ie there is a safe valid route ). If so, it schedules another event at which time its personnel, transport and any undelivered supplies will be absorbed back into the Depot. If not, it will either wait around, provided no enemy units are about, or be lost. If it waits around, it will schedule another event at which time it will again assess if it can return.

In addition to the routine requests, a unit can also place an emergency request if its current supply levels fall below a certain threshold. This is set at 50% of its usual standard requirements for ammo and fuel and 33% for Basics. **Emergency Requests** are given priority over routine ones by the Depot processing them. So if a unit runs out of ammo in the middle of the day, it will put in an emergency request and hopefully receive new ammo as soon as possible.



### Rationing

If there is insufficient supplies to meet all current requirements or there is insufficient handling capacity ( ie the ability to load the supplies on the trucks ) then a Depot may ration or limit the amounts it dispatches to its drawing units. When this occurs each request will only receive a proportion of its requirements. Emergency requests will get a greater proportion than routine requests.

To check how much supplies your units have, what their supply and supply line status is and how best to get them back in supply see [Resupply Your Units](#).

## Movement

When a force receives a Move task, it will determine the best route to the next specified waypoint or the order location – see [Routes](#). It will also determine the best formation, frontage and depth, and assign its subordinates to the formation subgroups ( see [Formations](#) ) and will normally assign itself to the formation hub.

### Formation Movement

The subgroups will use the hub's location as a reference to determine where they should be at any point in time. The subgroups in fact are assigned their own destinations, which is offset from the hub's destination according to the type of formation, the size of the force and the terrain.

The hub and the guard subgroups must stay in formation. They will stop moving if the others are not in their correct positions. There is a small margin allowed so at times you may see the hub close up a little when the advance guard halts due to enemy ahead.

### Single-Unit Movement

Each minute before a unit moves, it checks to see if it should react to enemy threats instead. As a result it may take cover and defend, fire, or even retreat ( see [Reactions](#) ). Otherwise it will continue to move along its route.

The distance a unit moves in a given minute is dependent on its speed. This is determined by whether the unit is moving by foot or vehicle (and if by vehicle, then on the speed of the vehicle). It is then modified by terrain, the unit's fatigue level and the visibility effects due to time of day and weather.

As the unit moves, its fatigue increases, its vehicles consume fuel, its facing is adjusted to point in the direction of movement and its cohesion may be adjusted according to the formation type it is in. Each formation type has a cohesion level. When a unit starts moving its cohesion level gravitates towards the level of its formation type. Road column has the highest cohesion level for moving. Arrowhead is the next best. Echelon and Vee are mid-to-poor, while Line is the worst. [Annex B – Formation Effects](#) lists the effect of different formations on cohesion.

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# Combat

The combat routines are very complex. The following is only an outline of what goes on.

## Direct Fire

Direct fire is conducted by first determining which of the firing unit's weapons is going to fire and how many rounds they are each going to fire. This depends on the target type (no use firing rifles against tanks), range to target, the task's rate of fire, the weapon's rate of fire, the firing unit's facing, the availability of crew to man the weapons, ammo to supply them and the effectiveness of the troops who will fire them.

Then each eligible target from the target unit is determined – personnel for anti-personnel fire and AFVs for anti-armour fire. Anti-personnel fire is resolved in a separate process to anti-armour fire. So a unit consisting solely of AFVs will only be affected by anti-armour fire and a unit without any AFVs will only be subjected to anti-personnel fire. A unit with both, such as a German mechanised infantry unit, will undergo both types of fire.

## Anti-Personnel Fire

Anti-personnel fire is resolved for each weapon type fired, by first determining the hit probability and then the number of personnel casualties or kills.

Factors affecting the hit probability include weapon accuracy given the range to target, the firing unit posture and effectiveness ( see [Combat Effectiveness](#) ), crew available, rounds available, visibility, terrain, target density, posture and facing. There are also grenade bonuses if the target is very close, and height modifiers (a bonus if firer is higher than target or a penalty if vice versa).

The number of kills is equal to the product of the rounds fired times the hit probability times any burst effects for larger calibre weapons.

Once the number of kills has been determined, personnel casualties are deducted and a corresponding amount of losses in equipment and supplies taken from the unit on a random basis. Then the effects of suppression and reductions in effectiveness (cohesion, fatigue and morale) are determined and applied to the target unit. The firing unit may also have its morale increased if it inflicts heavy losses. The firing unit also expends ammo supplies.

## Anti-Armour Fire

Because the probability of a hit and a kill are so dependent on the relation between the effectiveness of the firing weapon and the characteristics of the target AFV, anti-armour fire is processed by matching individual weapons against individual AFVs and then resolving each round fired.

Most of the factors mentioned in anti-personnel fire are used to determine the hit probability, but the size of the target is also factored in, so that larger AFVs are easier to hit (but not necessarily to kill).

For each round that hits the target, the probability of penetration is assessed. The main factors here are the weapon's penetration for the engagement range vis-à-vis the thickness and slope of the target AFV's armour. Generally when a round penetrates, the target AFV will be destroyed.

If destroyed, the AFV is removed from the target unit and a proportion of its crew deducted from the target unit's personnel. Again, the target unit may have its suppression level increased and suffer reductions in its effectiveness. As for anti-personnel fire, ammo is expended for the firing unit, and its morale may be increased if it has inflicted

substantial casualties.

### **Area Fire**

Area fire differs from direct fire by virtue of its scope. It includes bombardments (indirect fire) and airstrikes, both of which involve shells, bombs or rockets bursting, causing blast effect and spraying shrapnel over an area some distance from the point of impact. A single round can therefore hit more than one target. Area fire is therefore processed somewhat differently from direct fire.

### **Bombardment**

To conduct area fire a unit must have the bombard capability specified in its Estab. Usually this is given to those units with mortar, artillery or rocket tubes that normally fire in the indirect role. Certain units that have area fire weapons but which were primarily used in the direct fire role will not have a bombard capability – eg some anti-tank units.

The process of bombardment involves first determining which of the firing unit's weapons are going to fire and how many rounds they will each fire. This depends on the task's rate of fire, the weapon's rate of fire, the availability of crew to man the weapons, ammo to supply them and the effectiveness of the troops who will fire them.

### **Bombardment Zone**

For each type of firing weapon, the **Bombardment Zone (BZ)** – the area affected by the bursts – is determined. This depends on the number of tubes firing and the calibre and type of shell; the larger the calibre, the bigger the BZ. When you order an artillery unit to Bombard, the yellow order perimeter indicates roughly how big the BZ will be.

The units that are under the BZ are then identified, and the intersection area of their occupied areas and the BZ is calculated to produce the targets. Targets are divided into AFVs and personnel.

### **Registration**

Before an artillery unit can bombard with all its guns, it must first register the target. This involves one gun firing a series of single rounds with an observer adjusting the fall of shot until it is on target. This is not displayed on the map. Then the unit is ordered to fire for effect with all its guns/tubes. This is displayed on the map. This process takes time. It's longer the further the distance from the observer ( the requesting unit ) to the target. Typically it can take between 1 and 10 minutes.

### **Friendly Units in the BZ**

During the bombardment, artillery unit will not fire while friendly units are within the BZ unless the player toggles this feature off. The reason will be displayed next to the unit in the FireSpt tab. Other reasons why an artillery bombardment may not take place include the firing unit being too suppressed, out of ammo, out of range, too close, not deployed, not ready or not yet registered on the target.

### **Bombarding AFVs**

In resolving bombardment against AFVs, the number of hits is determined based on the density of AFVs within the

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BZ, the number of rounds being fired, and the terrain effects within the BZ. Hits are then applied randomly across the AFVs. For each AFV hit, whether or not it is destroyed is based on the number of hits received, the shell weight and the AFV's armour protection.

### **Bombarding Personnel**

Bombardment against **personnel** is resolved en masse. The number of personnel casualties is determined by factoring in the number of rounds on target, the lethal area of each round, the number of personnel actually within the BZ, the terrain effects and the deployment status and effectiveness of the target unit. Consequent equipment losses are then determined and taken from the target unit.

### **Other Effects of Bombardments**

After casualties and equipment losses have been taken from the target units, their suppression level and effectiveness values are adjusted ( see [General \(Gen\) Tab](#) and [Combat Effectiveness](#) ). Ammunition is expended from the firing units.

The suppression effect of a bombardment can be quite substantial. It can take some time for a unit to fully recover from suppression, during which it's ability to move and fire can be heavily restricted.

### **Airstrikes**

These are resolved in a similar manner to bombardments. In determining the BZ, the point of impact and the direction of strike are also factored in. Aerial bombs are much bigger than artillery shells and so can have quite a large burst radius. Fortunately for the target, there are usually fewer bombs in an airstrike than there are shells in the average bombardment!

### **Characteristics of Airstrikes**

As a general rule each airstrike delivers approx 1000 kilos of bombs and / or rockets. This equates to around 40 medium howitzer rounds. It has an effective bombardment radius of 100m from the point of impact. This can be up to 50m away from the specified target location. So to be safe ensure friendly troops are at least 150m away from the target location!

- ⊕ Unlike artillery, there is no friendly observer to call a halt to the airstrike once committed – friendly units in the wrong place may suffer damage as a result

### **Effects of Airstrikes**

Airstrikes have a very severe affect on the target's effectiveness values. Historically, units suffering airstrikes took a long time to recover and regroup. The shock effect was more dramatic than any actual damage inflicted. That is why they were so effective at breaking up attacks and dislodging otherwise resolute defenders.

## Night, Weather and Visibility

The main impact of both night and adverse weather conditions is on visibility. Visibility in turn affects the spotting of enemy units and the rate of movement. The poorer the visibility, the less reliable your reports of enemy units become, and the slower your units move.

In clear weather, visibility is worst at night, about 50% at dusk and dawn and maximum during the day. Rain, Snow and Fog also reduce visibility from a little to a lot, depending on how heavy the rain or snow is and how thick the fog is.

⊕ To avoid detection move formations at night

However, moving units at night fatigues them faster than it does during the day. Poor ground conditions such as snow and mud reduces movement rates of all units.

## Victory

Victory in CO: BFTB depends on your success in achieving your Objectives ( see **Objectives** ). Victory is measured in terms of **Victory Points (VPs)**. These are awarded for completing an objective, for occupying an objective, for exiting units and for destroying the enemy. However, victory is relative – your successes can be diminished or even surmounted by those of the enemy.

Your current progress is shown on the **Victory Meter** ( see **Victory Meter** ). Each minute of the game, your VP total is determined and then compared with that of the other side to determine the current victory level and this is then shown on the Victory Meter. In doing so, it presumes you will be awarded completion VPs ( see **Completion and Occupation** ) for any currently held objective – in other words, it reflects the level of victory you would be awarded if the game ended this minute. Of course things rarely stay the same in a battle situation.



⊕ Where the enemy is gaining Occupation VP from an objective, the Victory Meter will often show an over-optimistic picture of your situation

A maximum of 100 VPs can be gained, even though the total available may exceed 100. This may mean you do not have to achieve all assigned objectives. Which objectives you focus on is up to you!

The victory level is determined by subtracting the enemy’s VP total (capped at 100, just like yours) from the friendly VP total. The result determines your level of victory in accordance with the following table:

Table 12 - Victory Levels

Victory Level	Your VP minus Enemy VP
Decisive Victory	51 to 100
Marginal Victory	16 to 50
Draw	-15 to 15
Marginal Defeat	-16 to -50
Decisive Defeat	-51 to -100

During the game, an AI-controlled enemy may offer to surrender if it believes it has decisively lost and it has negligible chance of recovery. Conversely, you can offer to surrender to your opponent.

⊕ The side that surrenders will receive no VPs; the other side will receive 100 VPs

For details on surrendering and accepting offers of surrender see **Offer or Accept Surrender**.

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# Interface – Screen by Screen

## Startup Screen

At the lower right of the screen there are four options – **New Game**, **Load Game**, **Host Game** and **Join Game**. Moving the mouse pointer over the text of each option highlights the text in red. Click on it to select it.

Select **New** to start a new scenario, **Load** to load a saved game, **Host** to host a multiplayer networked game and **Join** to join a multiplayer networked game.

Select **About** to view the About Box and **Quit** to exit the application.

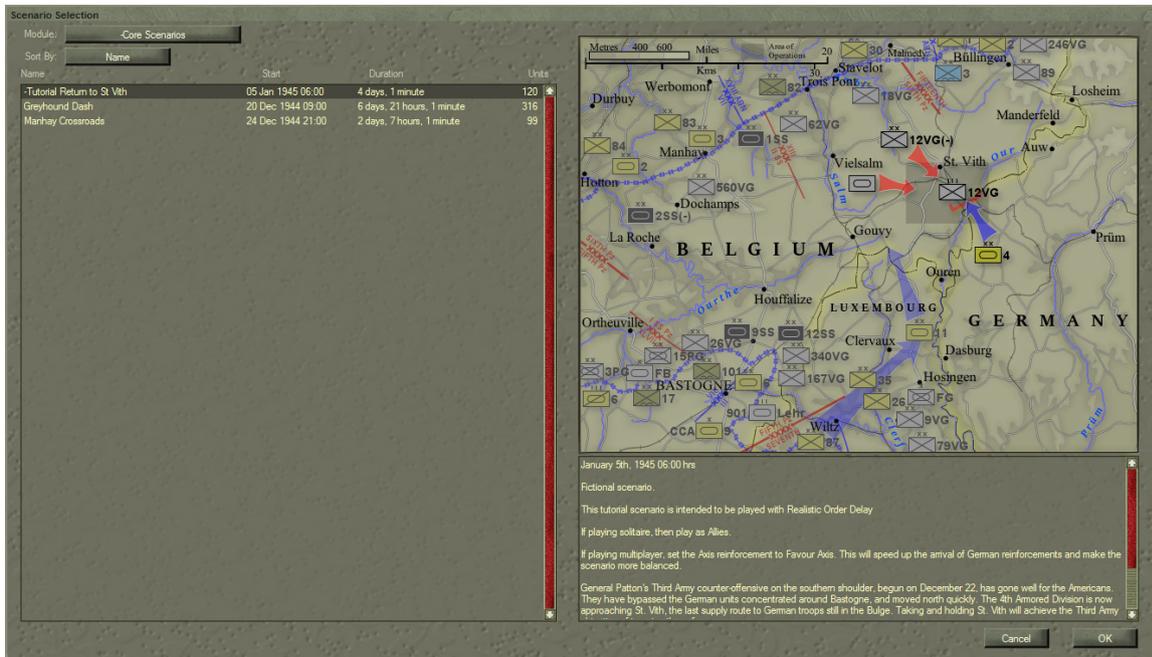
See [Basics](#) for more details on the Startup Screen.



## Single-Player Windows

### Scenario Selection Window

This appears after you click the New button on the Startup Screen. Select a scenario from the list and its details will be listed in the scrolling text box below. Select **OK** to confirm. See [Select Scenario](#) for more details.



### Game Options Window

Click on the **Play As** button to select the side you wish to play. The **Begin Scenario** button will begin the game – surprise, surprise! – while the **Cancel** button returns you to the Startup Screen. The other controls on this window allow you to set up the scenario options – see [Set Scenario Options](#).

### Weather Options

Click one of the four weather option buttons to select that option. **Historical Weather** recreates the same weather conditions that were historically experienced. **Seasonal Weather** provides weather conditions that are the norm for the period and place of the battle.

**Better Weather** will mean less rain, fog, and snow, while **Worse Weather** will mean more adverse weather.

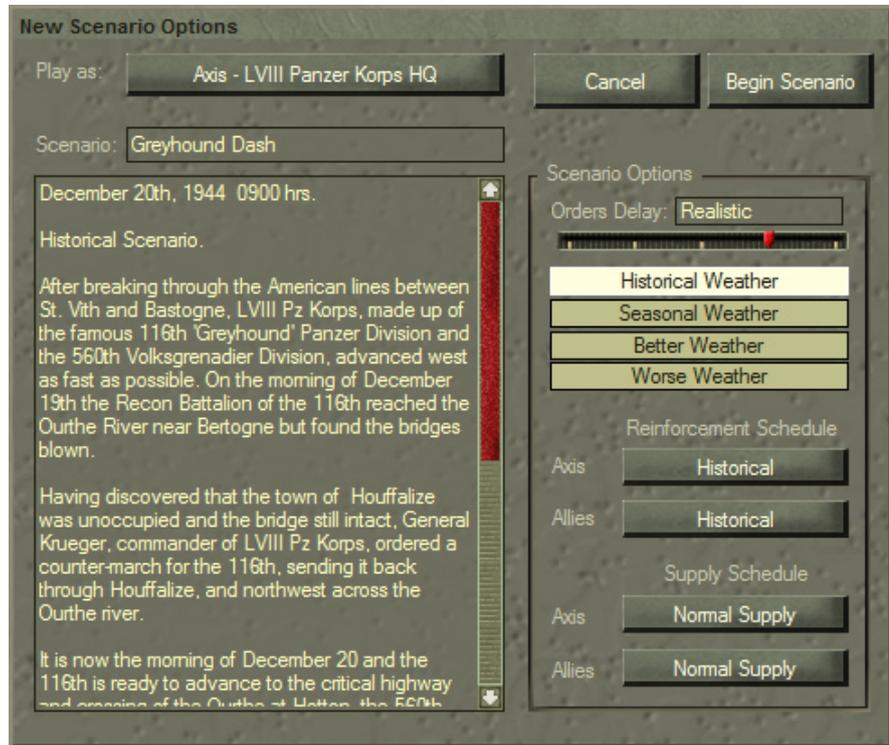
### Reinforcement Options

Select the reinforcement option for each side by clicking on the Axis and Allies Reinforcement buttons. There

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can be up to four options for each side's reinforcements – **Standard**, **Favour Axis**, **Favour Allies** and **No Reinforcements**.

In historical scenarios, the Standard option reflects the historical arrival times and strengths of units. In other scenarios, the Standard option attempts to be evenly balanced. Selecting Favour Allies for the Allied reinforcement option will add extra Allied units, or make them arrive earlier; selecting it for the Axis reinforcement option will remove or delay the Axis reinforcements. The same pattern applies to the Favour Axis option. The No Reinforcements option means exactly that, no reinforcements.



For each option, there may be multiple schedules (created by the scenario developer). Having selected an option the computer will then select a schedule at random from the appropriate list of schedules. You will not know which schedule you have until the game starts, and even then, you will only know the schedule for your side. This keeps you guessing and adds to the replay value of the scenarios. Even in the historical scenarios, even though the Standard schedule only reflects the historical arrival times and locations, the Favour Allies and Favour Axis schedules will often mix things up to provide an extra challenge.

### Supply Options

Select the supply option for each side by clicking on the Axis and Allies Supply buttons. In general, there will be three options for each side's supply – **Historical**, **More Supply** and **Less Supply**.

As you can imagine, the Historical option provides the amount of supplies the side historically received, while Less Supply means less ammo, less fuel and less food and More Supply means more of everything.

Regardless of which supply option you select, your base units will still have to stockpile, manage, and distribute supplies to your force.

## Multiplayer Windows

See [Play a Multi-Player Game](#) for more information about using these windows.

### Multiplayer Host Setup

This appears after selecting Host from the Startup Screen. Enter the name you want displayed to your opponent and hit **OK**.



### Multiplayer Client Setup

This appears after selecting Join from the Startup Screen. Enter the name you want displayed to your opponent, the IP address of the Host and hit **OK**. For details on obtaining the IP address see [Get Connected](#).

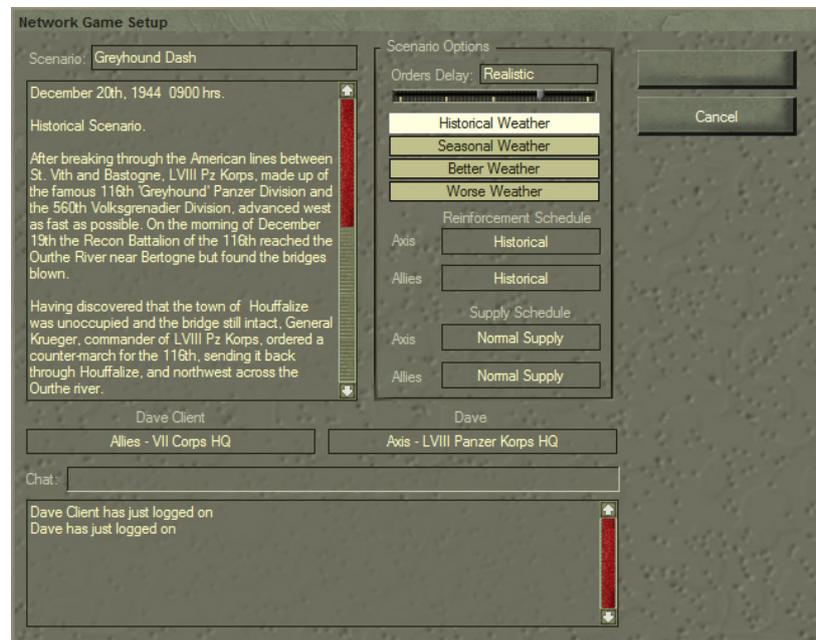


### Network Game Setup

This will vary according to whether you are the Host or Client. Essentially, only the Host can choose and configure the game and determine which side each player will control. Hence, the Client has no active buttons, except for **Cancel**.

Both players can communicate by messages while on this screen – see [Exchange Chat](#).

The Host can select **Choose Scenario** or **Choose Saved Game** to select the scenario or saved game you want to play (see [Setup Multiplayer Game](#)). Select the desired weather, reinforcement and supply schedules to configure the game. This is just like setting up a single-player game; see [Set Scenario Options](#) and [Game Options Window](#) for details.



Set the sides each player will control by clicking on the **Side Selection** buttons. Either button will swap sides.

The Client must wait for the Host to set things up.

When the Host is ready, the Host hits **Begin Game** to start.

## Battlemap

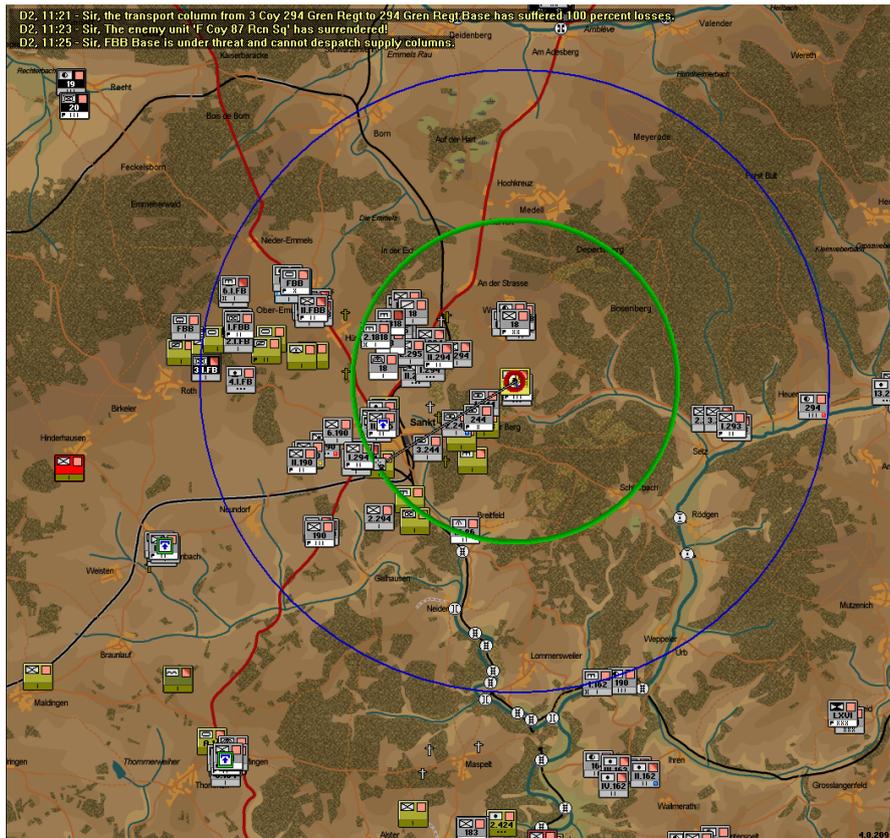
The Battlemap displays map terrain features. See [Use the Battlemap](#) for information on how to overlay a 1km grid to give you an idea of scale, zoom the map in and out and scroll around it, check the terrain type at any location, and check the visibility between locations.

On top of the map are displayed the unit icons – see [Unit Icons](#). When you select a unit, its task, routes, waypoints and occupied area will be shown. Your side's objective icons can also be displayed.

**Range rings** will also appear around the select unit when you select the Fire or Bombard orders or set them to display using the Display Toolbar. The green ring represents the max anti-personnel firepower (APerFP) range. The red ring represents the max anti-armour firepower (AArmFP) range. The blue ring is the max bombardment range and the black ring is the minimum bombardment range.

As units fire, you will also see yellow, red, and grey **fire lines** emanating from the unit firing toward the target. The yellow lines are for APerFP, the red for AArmFP, and the grey lines for indirect fire. Thicker lines indicate heavy fire.

**Messages** will also appear in the top left of the Battlemap. Normal priority messages have yellow text, while high priority messages have red text. You can select messages and the units that send them – see [Navigate Messages](#).



## Dialogs

Dialogs come in two types, standard dialogs and data dialogs. The main difference is that data dialogs require a selected game entity from the map to display anything - ie a selected force icon, order icon, plan task icon or crossing icon. Whereas a standard dialog does not require a current selection. We will start with the standard dialogs.

### Controls Dialog

#### Stratmap and Zoomer Control

The Stratmap provides a snapshot of the whole map area. Units appear on the Stratmap as brightly coloured dots – green for friendly units and red for enemy units. The area of the Battlemat currently displayed is indicated by a white/black **Viewable Area** rectangle in the Stratmap.

The Battlemat has six different scales or zoom levels. The red notch on the Zoomer Control indicates the current zoom level. To change levels, simply click on one of the other notches. Alternatively, click on the + or - magnifying glass buttons at either end of the Zoomer Control to zoom in or out one level. You can also zoom in/out using the central mouse scroller or the Zoom tool,

which is activated by holding down the Alt key  and left clicking to zoom in and right clicking to zoom out.

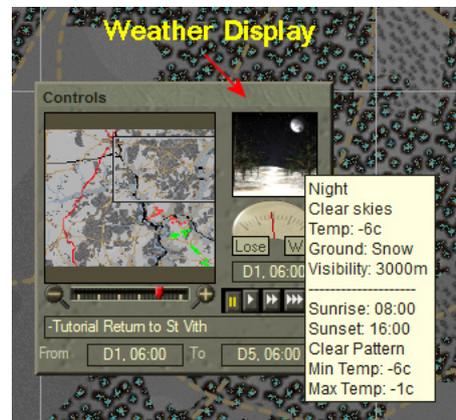
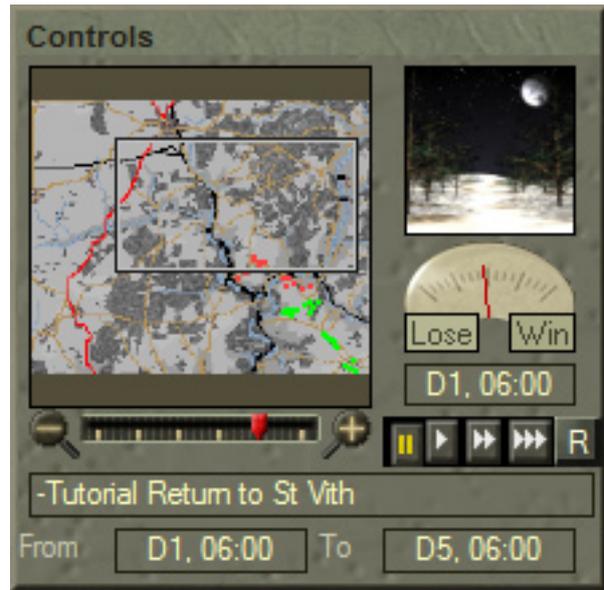
You can use the Stratmap and the Zoomer Control just below it to navigate around the Battlemat – see [Pan and Zoom the Battlemat](#).

#### Weather Display

This displays the ground and air conditions prevailing at the current time. Hold your mouse over the display to get extra information ( see [Check the Weather](#) ).

#### Victory Meter

This gauge indicates the level of victory you would obtain if the game were to end now. When the needle is near the middle notch, it is a Draw. The notches either side mark a Minor Defeat or Minor Victory, while the extreme left notch is a Decisive Defeat and the extreme right one a Decisive Win – see [Victory](#).



## COMMAND OPS 2

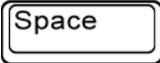
### Day/Time

This displays the current game time. “Day #” indicates the number of days since the start of the scenario, while “##:##” is the time, expressed in the 24 hour format. Roll over the mouse to get a full date/time display,

### Run Buttons



The five **Run Buttons** are (from left): **Pause**, **Run Slow**, **Run Normal**, **Run Fast** and **Run Until**. If you find the pace a little too fast to react and give your orders, then hit the Run Slow button or Pause if you need time to do a full replan. See [Set Game Speed and Pause](#).

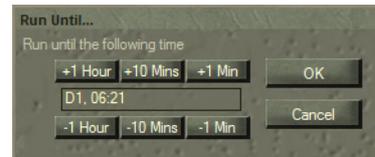
Pressing Space key  while running will pause the game. Pressing it while paused will start the game running at whatever the previous speed setting was – i.e. the space bar toggles between pause and play.

Pressing the < key  will decrease the speed by one level. Pressing the > key  will increase it one level.

A multiplayer game will run at the slowest speed set by the players –if you set it to Normal, but your opponent sets it to Slow, the game will run at Slow. If your opponent ups the speed to Fast, the game will run at Normal ( since that’s what you have set ). See [Speed in Multi-Player Games](#).

### Run Until Window

Use the Run Until button to specify a time that the game will run to using the fastest possible speed. This will reduce the number of refresh frames. In smaller scenarios this may appear a little jerky. For details see [Run Until](#)



While running both the Fastest and the Run Until buttons will be depressed. Roll over the Run Until button to see the time specified – ie at which time it will pause the game.

### Orders Dialog

This contains the buttons for each **Order** type on the left. These will only be highlighted when you select a unit and only those that the unit has the capability to perform. Selecting one of these changes the mouse pointer to the specific order cursor. Use this to issue an order to the selected unit(s) – see [Issue Orders](#)

In the centre at the bottom is the **Reattach** button, which is highlighted if the selected unit is not under direct command of its organic superior. Use it to reattach the unit to its organic superior. See [Reattach Units](#).



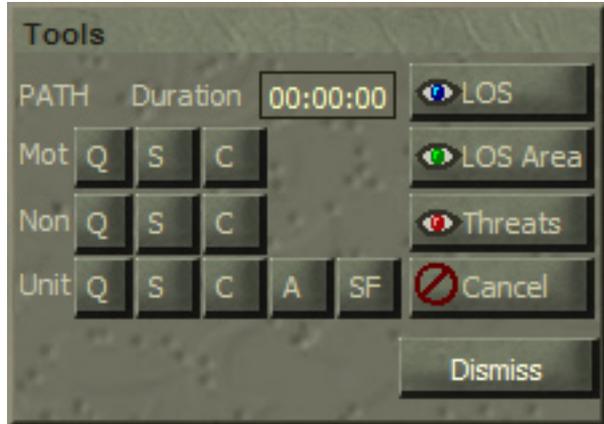
At the top right is the **Airstrike** button, below which are fields that show the minimum and maximum time

remaining when strikes are available. The Airstrike button displays the number of strikes currently available. Select it to launch an air strike – see [Target an Airstrike](#).

At the bottom right is the **Cancel** button used to revert the mouse pointer to the default Arrow cursor used for selection. Hold the mouse pointer over a button to see a **Tool Tip** showing the keyboard shortcut for that button.

## Tools Dialog

This contains three rows of **Path** tools on the left. The top row is for generating quickest ( Q ), shortest ( S ) and covered ( C ) paths for motorised units. The second row does the same for non-motorised or foot units and the third row does the same for the currently selected unit. In addition it also has two additional path tools for generating avoidance ( A ) and safest ( SF ) paths. There is also a Duration box that provides an estimate of how long it will take to complete the path. For details on how to use these see [Determine Best Path](#).



The **LOS** button enables the Direct line of sight tool while the **LOS Area** button enables the Area line of sight tool. See [Assess Line Of Sight \(LOS\)](#).

The **TLOS** button enables the Threat Line Of Sight tool. See [Check for Enemy Threats](#).

The **Cancel** button is used to revert the mouse pointer to the default Arrow cursor used for selection.

Hold the mouse pointer over a button to see a **Tool Tip** showing the keyboard shortcut for that button.

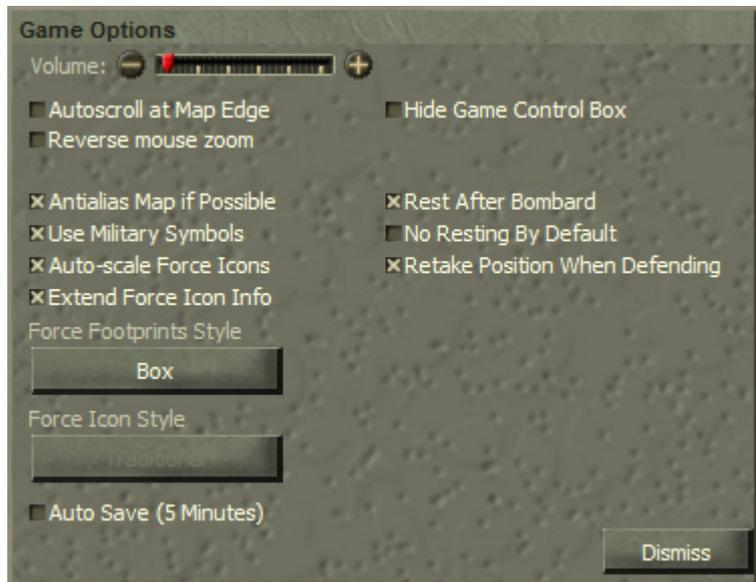
## Options Window

Use the Volume control to adjust the in-game sound volume ( see [Set Sound Volume](#) ).

Use the checkboxes to turn on or off the various options.

**Autoscroll at Map Edge** – when checked, the map will scroll if you move the mouse pointer to the edge of the screen.

**Reverse Mouse Zoom** – when checked the map will zoom in when the centre mouse wheel/button is rotated towards you and zoom out when rotated away from you. When unchecked it works in the opposite direction.



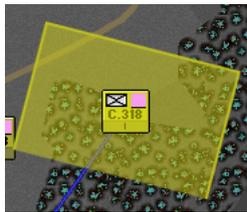
## COMMAND OPS 2

**Antialias Map if Possible** – will draw the map using anti-aliasing. This makes for smoother lines. On some low-end machines, this may slow down the game. If so, uncheck it.

**Use Military Symbols** – when checked displays the standard military symbols on the unit icons. When unchecked it replaces these with picture symbols.

**Auto Scale Force Icons** - when checked, unit icons will get smaller for lower level units as you zoom out - eg platoons and companies may appear as small icons when the whole map is in view. Zoom in and they will scale up to their full size.

**Extended Force Icons** - when checked and the map is zoomed in units will have additional Unit Infor Boxes drawn to the right of their normal icon.



**Force Footprint Style** - choose either box, filled box, rounded, filled & rounded to set the way the unit footprint is drawn on the map.

**Force Icon Style** - is not active at the moment and can be ignored.

**Auto-Save** – will automatically save the game every 5 minutes of real time. You may notice a slight pause when this happens. It will save up to ten saved game files numbered #1 to #10 and then cycle back through these overwriting the earlier save.

**Hide Game Control Box** - is redundant and can be ignored,

**Rest after Bombard** – when checked, artillery units will switch to Rest after completing a Bombard order. If unchecked, artillery units will switch to Defend after completing a Bombard order, in which case the unit may then be automatically tasked to provide On Call support. See [Provide On Call Support](#) and [Manage Fire Support](#).

**No Rest by Default** - when checked sets the default Rest type for orders you issue to be “No Rest”.

**Retake Position When Defending** - when checked, if you issue a defend order the Retake Checkbox will be checked by default.

### Objectives (Obj) Dialog

The **Obj** dialog shows a list of the objectives you need to achieve to win the game. The text is coloured green if the objective is currently achieved. At the end of each line in the list is the maximum number of victory points ( VPs ) that you can earn for this objective along with a vertical progress bar, used to indicate how much of this total you have achieved to date.

When you select an objective from the list, its data is displayed on the right. This consists of the timings and a

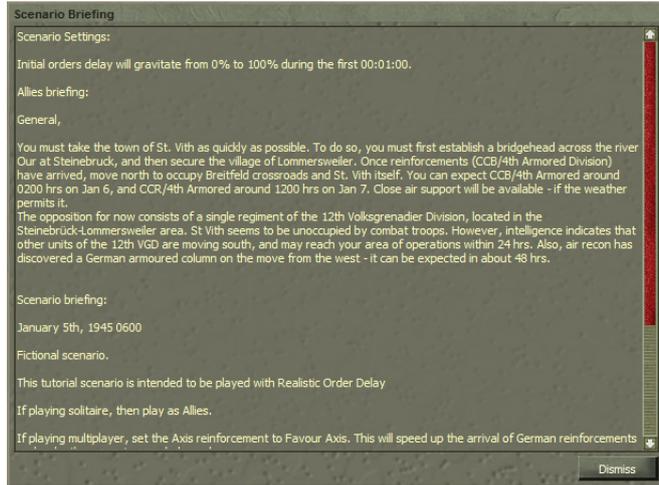
Scenario Objectives		From	To
Destroy the Enemy	33	D2, 06:00	D5, 06:00
<b>St. Vith</b>	<b>38</b>	Occupation	0.0 / 25.0
Breitfeld Crossroads	19	Completion	0.0 / 12.5
Steinebrück Bridge	13	APerFP	0.0 / 0.0
Lommersweiler	13	Armour	0.0 / 0.0
		Bombard	0.0 / 0.0
		No of Units	0
		Kills	0.0 / 0.0

Dismiss

breakdown of the VPs currently held and potentially available for occupying and / or completing the objective. See [Work Out What You Have to Do to Win](#) and [Objectives](#).

## Briefing ( Brf ) Dialog

The **Briefing Dialog** displays the scenario briefing. Normally this will contain the **Initial Orders Delay** that applies, a **Side Briefing** (containing information not available to the other side), followed by a **Scenario Briefing** ( which is visible to both sides ). If no Side Briefing is provided by the scenario designer, then there will be just the Scenario Briefing ( see [Review Your Briefings](#) ).

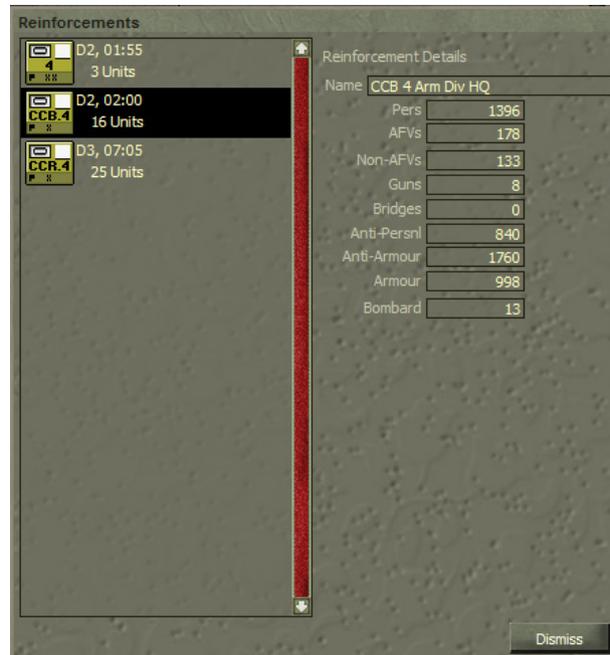


## Reinforcement ( Reinf ) Dialog

The **Reinforcement Dialog** contains a list of each reinforcement group that is scheduled to arrive for your side. Each entry displays the unit icon for the senior unit of the group, the earliest and latest arrival times and the method of arrival ( i.e. by parachute, glider, aircraft or ground ).

When you select an entry in the reinforcement list, its data is displayed below ( number of Personnel, AFVs and Guns to the left and the anti-personnel, anti-armour and bombardment firepower values to the right ) – see [Identify Your Reinforcements](#).

If you double click the entry an icon will be drawn on the Battlemat showing where it arrives ( if need be the Battlemat will be automatically scrolled to display the arrival location ).

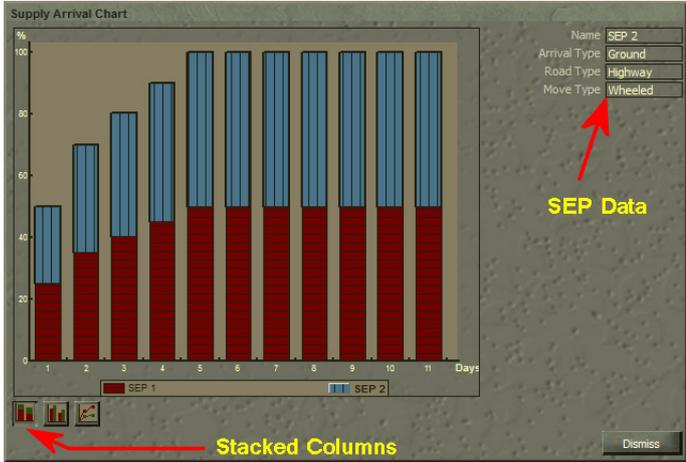


# COMMAND OPS 2

## Supply ( Sup ) Dialog

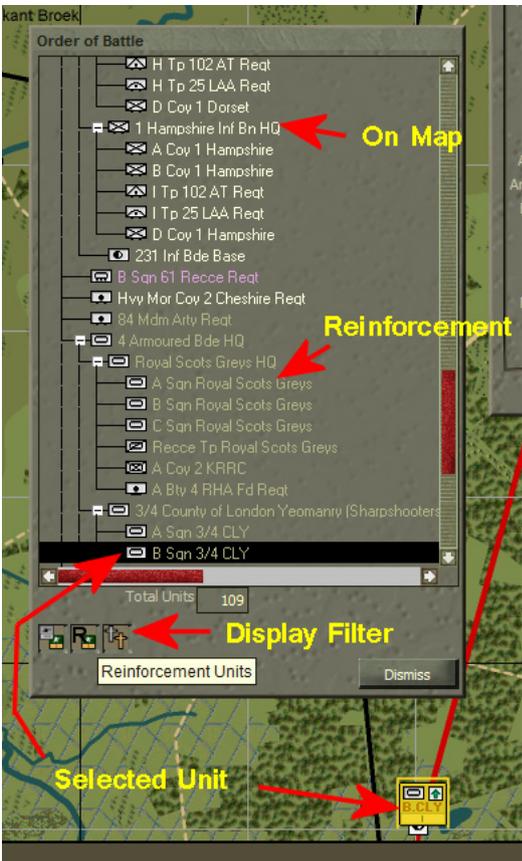
The **Supply Dialog** displays a graph of the daily supply schedule. This shows how much of the side's daily resupply requirements are going to be met. This can be viewed in three ways using the Graph Type buttons below the graph.

For details see [Review Supply Arrival Schedule](#).



## Fire Support ( FS ) Dialog

The **FireSupport Dialog** contains a list of all bombard capable artillery units under your direct command. Selecting a unit from the list displays its data below. Use this to quickly locate and order your fire support units. See [Bombard the Enemy](#).



## Order of Battle ( OB ) Dialog

The **Order of Battle Dialog** contains a tree list showing all your units currently on the map in their organic command structure. The more senior a unit is, the closer to the root level it will be shown. You can use the + [F] and - [F] symbols to expand and collapse branches in the display, and you can select units from the display and issue orders to them. The structure displayed depends on the Force Structure type set on the Display toolbar - Organic, Player or Current. See [Use the Order of Battle \( OB \) Display](#).

## Message ( Msg ) Dialog

The **Message Dialog** contains a list of all messages to the player from this session of play, including those filtered out from display on the Battlemap. Selecting a message in the list will select the sender and if necessary scroll the map to bring their icon into view. Messages can be filtered by priority using the filter buttons below the list. See [View Messages](#)



## Plan Dialog

The Plan dialog displays a list of the orders the players has issued. Selecting an item in the list highlights the order on the map. Double-clicking the item will bring the order icon into view.



# COMMAND OPS 2

## Force Data View (FD) Dialog

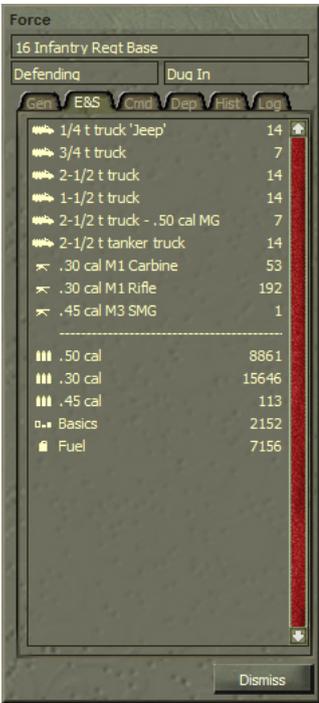
This is one of the four data dialogs that require you to select a specific game entity from the map. In this case they relate to the forces.

At the top is the unit name field. Below that on the left is the Task/Reaction field and to the right the Action/Deployment field. Below these are the six force data tab views. For details see [Force Data Display](#).

### General ( Gen ) Tab

The **General Tab** (see [Gen Tab](#)) has indicator bars for a range of dynamic and static values. Below these are the unit's strength, firepower and other values along with its current move rate, terrain and role fields. If the unit has subordinates then a second column of values will appear for the entire force.

<b>Name</b>	1 Bn HQ 19 SS PG Regt																																					
<b>Task/Reaction</b>	Assaulting   Deployed	<b>Action/Deployment</b>																																				
<b>Dynamic Indicator Bars</b>	<div style="font-size: 8px;">             Gen   E&amp;S   Cmd   Dep   Hist   Log              Personnel <input type="checkbox"/> <input type="checkbox"/>              Equipment <input type="checkbox"/> <input type="checkbox"/>              Morale <input type="checkbox"/> <input type="checkbox"/>              Cohesion <input type="checkbox"/> <input type="checkbox"/>              Fatigue <input type="checkbox"/> <input type="checkbox"/>              Suppression <input type="checkbox"/> <input type="checkbox"/>              Experience <input type="checkbox"/> <input type="checkbox"/>              Training <input type="checkbox"/> <input type="checkbox"/>              Fitness <input type="checkbox"/> <input type="checkbox"/>              Aggression <input type="checkbox"/> <input type="checkbox"/>              Stubborn <input type="checkbox"/> <input type="checkbox"/> </div>																																					
<b>Static Indicator Bars</b>																																						
<b>Strength</b>	<table style="font-size: 8px; width: 100%;"> <tr><td>Personnel</td><td>34</td><td>575</td></tr> <tr><td>AFVs</td><td>0</td><td>0</td></tr> <tr><td>Non-AFVs</td><td>8</td><td>106</td></tr> <tr><td>Guns</td><td>0</td><td>13</td></tr> <tr><td>Bridges</td><td>0</td><td>0</td></tr> <tr><td>Anti-Persnl</td><td>14</td><td>279</td></tr> <tr><td>Anti-Armour</td><td>11</td><td>217</td></tr> <tr><td>Bombmnt</td><td>0</td><td>38</td></tr> <tr><td>Armour</td><td>0</td><td>0</td></tr> <tr><td>Inf Val</td><td>0</td><td>423</td></tr> <tr><td>Eng Val</td><td>0</td><td>0</td></tr> <tr><td>Movement</td><td>15</td><td>15</td></tr> </table>	Personnel	34	575	AFVs	0	0	Non-AFVs	8	106	Guns	0	13	Bridges	0	0	Anti-Persnl	14	279	Anti-Armour	11	217	Bombmnt	0	38	Armour	0	0	Inf Val	0	423	Eng Val	0	0	Movement	15	15	<b>Force Values</b>
Personnel	34	575																																				
AFVs	0	0																																				
Non-AFVs	8	106																																				
Guns	0	13																																				
Bridges	0	0																																				
Anti-Persnl	14	279																																				
Anti-Armour	11	217																																				
Bombmnt	0	38																																				
Armour	0	0																																				
Inf Val	0	423																																				
Eng Val	0	0																																				
Movement	15	15																																				
<b>Firepower</b>		<b>Deploy to Fire symbol</b>																																				
<b>Other Values</b>		<b>Move Type symbol</b>																																				
<b>Movement</b>																																						
<b>Terrain</b>	Village / Med Bridge																																					
<b>Role</b>	Role	<b>Number of Units</b>																																				



### Equipment and Supply ( E&S ) Tab

The **Equipment and Supply Tab** ( see [E&S Tab](#) ) shows a list of the principal equipment and supplies currently held by the unit.

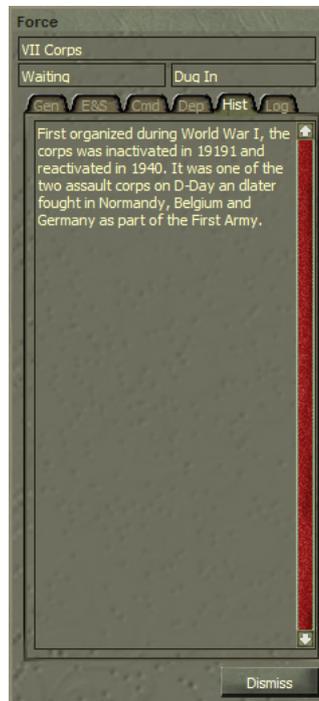
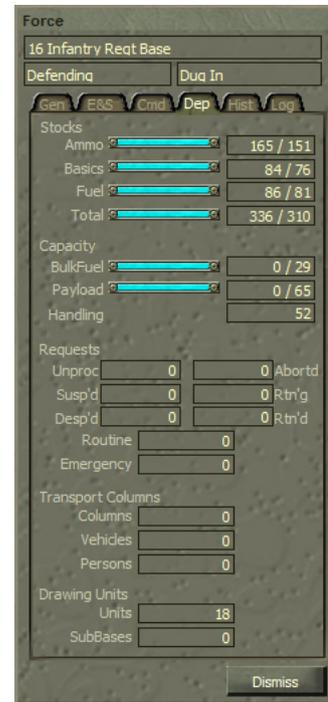


**Command ( Cmd ) Tab**

The **Command Tab** ( see [Cmd Tab](#) ) provides details about the unit’s commander and staff, including their ratings, and also contains information about the current orders delay affecting the unit and its subordinates.

**Depot ( Dep ) Tab**

The **Depot Tab** ( see [Dep Tab](#) ) either displays the unit’s supplying Base – ie the Base on which it draws its supplies – or if the unit is a Base itself it displays a whole range of data relating to its integrated Depot, including the stock on hand, transport capacity, resupply requests, transport columns and drawing units.

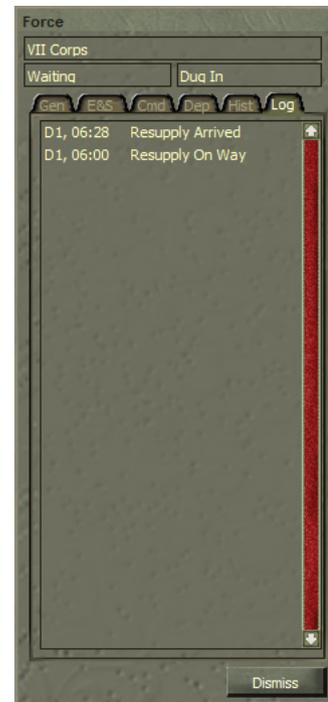


**History ( Hist ) Tab**

The **History Tab** ( see [Hist Tab](#) ) contains a brief history of the unit. This is not displayed for all units.

**Event Log ( Log ) Tab**

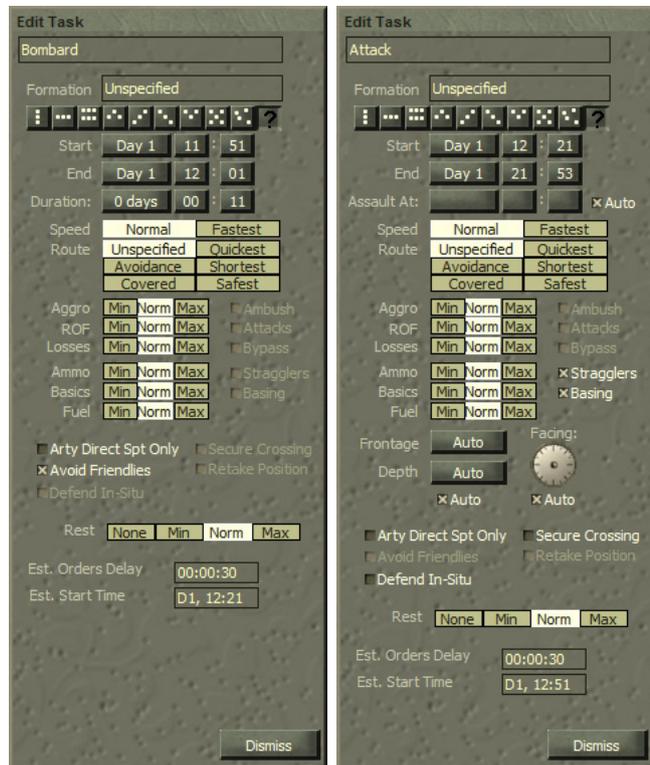
The **Log Tab** ( see [Log Tab](#) ) provides a list of recent events and status changes affecting the unit.



# COMMAND OPS 2

## Task Edit (TE) Data Dialog

To view and change the settings for an order you have given, select the force you gave the order to and then select the **Order Icon** on the Battlemat. For details see [Specify Order Settings](#) and [Select an Order](#).



## Task View (TV) Data Dialog

This is similar to the Order data but appears when you click on the grey **Unit Task** icon. This represents the task the unit is actually performing, rather than the order it has been issued (if any). You have no control over this task – so it's read only. For details see [Unit Tasks](#).



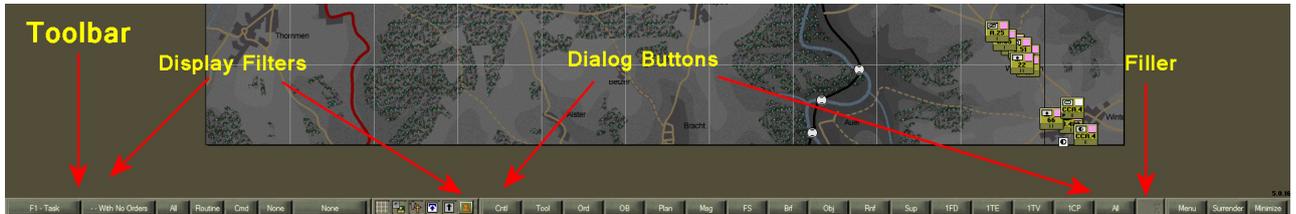
## Crossing Point (CP) Data Dialog

The Crossing Point dialog shows the type of crossing, its status and a progress bar if it being constructed or primed.



## Toolbar

The Toolbar contains various types of buttons. The display filter buttons enable you to make quick changes to the elements displayed on the Battlemat. The dialog buttons allow you to open or dismiss the various dialogs. The All button allows you to show/hide all dialogs. The Filler space varies according to the screen size but otherwise does nothing. The Toolbar also contains the Menu, Surrender/AAR and Minimise buttons. For details see [Use the Display Toolbar](#).



## The AAR/Victory Screen

This appears at the end of a game, whether you win or lose. A short message from your commander is at the top. The amount of victory points (VPs) awarded to both sides is provided along with details of each side's losses, expressed in terms of men, AFVs and guns. The number of enemy units destroyed by Fire, Surrender or Disbandment is also listed. The two other columns provide a breakdown of how your Personnel and AFV casualties were caused.

Select the **“Review Final Situation”** button to return to the Battlemat, from where you can peruse the final deployments and condition of the units. While reviewing, you can re-open the AAR Screen by selecting AAR from the Toolbar. When you are finished, select **“Leave Game”** from the Game Menu.

Note you can save the game during this review. That way you can preserve a copy of the AAR screen.

Select the **“End Game”** button to exit straight away to the Startup Screen.

End Game: Hamich Ridge

16 Nov 1944 11:53

**DECISIVE DEFEAT**

Fool!!!  
I have just been informed of the true extent of the debacle you have perpetrated in your pathetic attempt. I understand there is a junior position available in the Kabul. Pack your bags!!!

*Omar D Bradley*  
General Omar Bradley  
Commander 12th Army Group

---

Start: D1, 05:00 End: D4, 18:00  
Weather: Historical Weather  
Orders Delay: Realistic

Ended At: D1, 11:53

Axis: Computer  
Reinforcements: Historical  
Supplies: Normal Supply

Allies: Human  
Reinforcements: Favour Allies  
Supplies: Normal Supply

Axis			Decisive Victory 100 victory points						
Losses			Pers Cas Caused By			AFV Cas Caused By			
Personnel:	64	APer:	37	APer:	0	APer:	0	APer:	0
AFVs:	9	AArm:	16	AArm:	1	AArm:	0	AArm:	0
Guns:	5	Bomb:	9	Bomb:	0	Bomb:	0	Bomb:	0
Units Destroyed By:		Air Strike:	0	Air Strike:	0	Air Strike:	0	Air Strike:	0
Fire:	0	Surrender:	2	Surrender:	0	Surrender:	0	Surrender:	0
Surrender:	0	Accident:	0	Accident:	0	Accident:	0	Accident:	0
Disbanded:	1	Other:	0	Other:	1	Other:	1	Other:	1
				RPG:	7	RPG:	7	RPG:	7

Allies			Decisive Defeat 0 victory points						
Losses			Pers Cas Caused By			AFV Cas Caused By			
Personnel:	10	APer:	5	APer:	0	APer:	0	APer:	0
AFVs:	26	AArm:	0	AArm:	0	AArm:	0	AArm:	0
Guns:	0	Bomb:	5	Bomb:	0	Bomb:	0	Bomb:	0
Units Destroyed By:		Air Strike:	0	Air Strike:	0	Air Strike:	0	Air Strike:	0
Fire:	0	Surrender:	0	Surrender:	0	Surrender:	0	Surrender:	0
Surrender:	0	Accident:	0	Accident:	0	Accident:	0	Accident:	0
Disbanded:	0	Other:	0	Other:	26	Other:	26	Other:	26
				RPG:	0	RPG:	0	RPG:	0

## Modding

CO2 has been designed to support community modding in a number of key areas.

### Scenarios and Maps

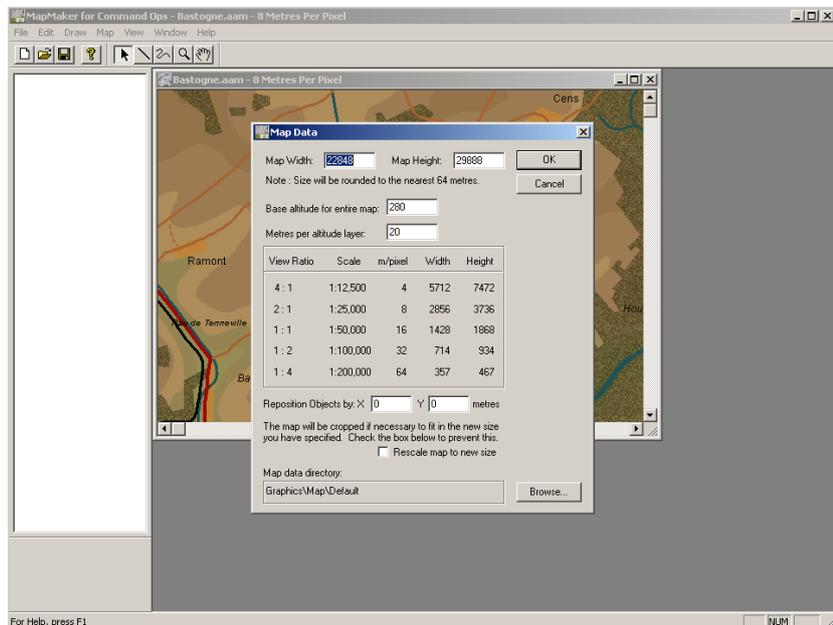
Included with the game are the professional tools used by Panther Games to create the maps and scenarios for CO2, namely the MapMaker and ScenMaker applications. Detailed manuals are also provided to help you create new battlefields and new battles!

We strongly recommend that you should not modify any of the official maps or scenarios as doing so will break your game for online play. If you want to create a new version of the official maps or scenarios, we recommend saving your work under a new name so that the original will still be available for you to battle online.

### Graphics

To modify the graphics used to display different terrain types:

- ☞ Copy the CmdOps/Graphics/Map/Default directory
- ☞ Rename it – eg My Map Graphics
- ☞ Open the MapPat.bmp, MapPatA.bmp and MapKey.bmp files, located within the new directory, in your favourite paint program
- ☞ Modify them to your hearts content
- ☞ Save them
- ☞ Open the desired map(s) in the MapMaker application
- ☞ Select Map Data from the Map menu
- ☞ Select the Browse button at the bottom of the Map Data dialog



- ☞ Navigate to and select your new directory
- ☞ Click OK
- ☞ Save the map

You can do this with no special tools; Microsoft Paint® is sufficient. The MapPat.bmp file contains the colours and shapes for the terrain graphics. The MapPatA.bmp file indicates how transparent different areas on each graphic should be. White areas in the MapPatA.bmp file indicate completely opaque areas, black areas indicate complete transparency, and shades of grey indicate partially transparent areas. The MapKey.bmp file contains the graphics displayed in the MapMaker terrain key list and in the Terrain popup used in the Game.

It is a good idea to create a backup of your original map graphics files before making modifications, so you can easily go back to the defaults if you want.

Changing the map graphics will have no negative effect on online play.

## Sounds

The sounds played by CO2 through the game are located in the CmdOps/Sounds/InGame directory. You can replace these sounds with your own. Sounds are grouped by function and type, making it pretty easy to tell what sounds go where.

We recommend that you create a backup of any sounds you want to replace, in case you later decide to go back to the originals.

Changing the sounds will have no negative effect on online play.

# Annex A – Keyboard Shortcuts

## Orders

	Attack
	Bombard
	Secure Crossing
	Defend
	Delay
	Exit
	Fire
	Move
	Probe
	Reorg
	Construct Bridge
	Withdraw
	Deny Crossing
	Rest

## Other Tools

	Cancel - revert to selection tool (also double-click on empty map space)
	Airstrike
	LOS tool Direct
	LOS tool Area
	TLOS tool
	Reattach

## Map Zoom

	Zoom in one level – zooms out if Reverse Mouse Zoom option is set
	Zoom out one level – zooms in if Reverse Mouse Zoom option is set
	Zoom in one level
	Zoom out one level

### Unit Icon Info Box Display

	Task
	Rout Status
	Strength
	Combat Power
	Deployment / Facing
	Morale / Cohesion / Fatigue
	Ammo / Arty Ammo / Basics / Fuel / Supply Line

### Friendly Unit Filters

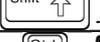
	All units
	HQ units
	Line ( combat ) units
	Support units / Bases
	Armour units
	Mech Inf units
	Soft units
	Gun units / Gun units that can Bombard
	Engineer units
	Bridge units
	Units without orders
	Units with orders
	Units with recent log entries (< 1 hour old)

### Reports

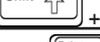
	Go to previous report
	Go to next report
	Go to last report
	Select and / or go to location of current report

## COMMAND OPS 2

### Selection

	Select superior of selected unit
	Select previous subordinate of selected unit's superior
	Select next subordinate of selected unit's superior
	Select first subordinate of selected unit
 +    	Add to selection
 + 	Add to selection
 + 	Invert selection (i.e. Selects if not already selected or deselects if already selected)
 + 	Toggle select Order/Unit
 + 	Toggle select Unit Task/Unit

### General

	Chat (multiplayer only)
	Cancel - revert to mouse selection pointer (also double-click on empty map space)
	Toggle Pause / Run (reverts to previous speed setting)
	Increase Play Speed one level
	Decrease Play speed one level
	Go to selected unit in OB Display
	Go to selected unit in Fire Support ( FS ) Tab
	Show / hide 1km Map Grid
	Show / hide units and eliminated units
	Show / hide objectives
	Cycle Intel display
	Delete currently selected task or waypoint
	Cycle through units you have given orders to
 + 	Cycle through units awaiting orders
	Copy the current screen to the clipboard
	Show small unit icons

## Annex B – Formation Effects

- ⊕ Cohn (Cohesion) is the percentage level that a unit will gravitate to when moving. No effect when stationary.
- ⊕ Front (Frontage) and Dep (Depth) is in metres per man. This is further modified by the terrain, task frontage and depth and visibility.
- ⊕ Firing refers to the percentage of the units personnel that can fire to the front ( F ), left ( L ), right ( R ) or rear ( RR ).
- ⊕ Target refers to the percentage of the units personnel that can be fired at from the front, left, right or rear.
- ⊕ Security refers to how secure (Max, Normal, Min) the unit is from an attack from the front, left, right or rear.

Symbol	Name	Cohn	Front	Dep	Firing				Target				Security			
					F	L	R	RR	F	L	R	RR	F	L	R	RR
	Road Column	90	0.1	3.0	20	30	30	15	25	80	80	25	Min	N	N	Min
	Line	70	2.5	1.0	100	20	20	33	80	30	30	80	Max	Min	Min	Min
	Successive Lines	60	2.0	1.5	60	40	40	30	40	30	30	40	Max	N	N	Min
	Arrowhead	75	2.0	2.0	60	45	45	30	50	50	50	50	Max	N	N	Min
	Left Echelon	60	2.0	2.0	70	60	20	20	60	50	40	50	Max	N	Min	Min
	Right Echelon	60	2.0	2.0	70	20	60	20	60	40	50	50	Max	Min	N	Min
	Vee	50	2.0	2.0	75	30	30	25	50	50	50	50	Max	N	N	Min
	All Round Defence	30	2.0	2.0	50	50	50	50	30	30	30	30	N	N	N	N
	In-situ	30	2.0	2.0	30	30	30	30	30	30	30	30	N	N	N	N
	Mob	10	2.0	2.0	10	10	10	10	30	30	30	30	Min	Min	Min	Min

Note Mob is used when routing. You cannot order Mob formation.

## Annex C – Understanding Military Symbols

### READING MILITARY MAP SYMBOLS

Symbols are made up of three elements combined to indicate the nature of the unit: Type, Role, and Mobility. This table shows some of the major symbols and provides example of their combined use in the game.

#### UNIT TYPE

	<b>INFANTRY</b> (ammunition bandoliers crossed over chest, worn by infantrymen)
	<b>RECCE</b> (Sam Browne sword belt worn by cavalrymen)
	<b>ARMOUR</b> (shape of WWI tank, or armoured knight's shield or visor slot)
	<b>PARACHUTE</b> (winged badge worn by paratroopers)
	<b>ENGINEERS</b> (bridge built by engineers)
	<b>ARTILLERY / MORTAR</b> (cannonball)
	<b>ROCKET</b> (rocket)
	<b>LOGISTIC</b> (unknown)
	<b>ARMOURED CAR</b> (multi-wheeled armoured vehicle)
	<b>MACHINE GUN</b> (arrow, also used to indicate a single MG post)

#### ROLE

	<b>ANTI-TANK</b> (pointed tip of armour-piercing shot; arrow / spear point)
	<b>ANTI-AIRCRAFT</b> (umbrella protecting against air attack)
	<b>MOUNTAIN</b> (mountain peak)
	<b>HEAVY</b> (unknown)
	<b>SPECIAL FORCES / COMMANDO</b> (boat used by commandos)

#### MOBILITY

	<b>WHEELED</b> (truck wheels)
	<b>TRACKED</b> (caterpillar track)
	<b>GLIDER-BORNE</b> (glider wings)
	<b>PARACHUTE</b> (winged badge worn by paratroopers)

#### COMBINED TO FORM FULL SYMBOLS

	<b>INFANTRY + ARMOUR</b> (mechanised infantry with armoured personnel carriers)
	<b>INFANTRY + WHEELED MOBILITY</b> (motorised or motorcycle infantry)
	<b>ARTILLERY + ARMOUR</b> (assault gun)
	<b>ARTILLERY + ARMOUR + ANTI-TANK ROLE</b> (tank destroyer)
	<b>INFANTRY + HEAVY ROLE + WHEELED MOBILITY</b> (motorised heavy infantry)
	<b>ARTILLERY / MORTAR + PARACHUTE MOBILITY</b> (parachute artillery / mortar)
	<b>INFANTRY + MOUNTAIN ROLE</b> (mountain infantry)
	<b>INFANTRY + MACHINE GUN</b> (machine gun infantry)
	<b>RECCE + ARMOUR</b> (armoured recce)
	<b>INFANTRY + SPECIAL FORCES / COMMANDO ROLE</b> (special forces / commando infantry)
	<b>ARTILLERY + ANTI-AIRCRAFT ROLE + TRACKED MOBILITY</b> (tracked self-propelled anti-aircraft)

## Annex D – Unit Types and Symbols

Military Symbol	Picture Symbol	Unit Type
		Army Group HQ
		Army HQ
		Corps HQ
		Recce (horse or inf / mot inf / MC)
		Glider Recce
		Mot Glider Recce
		Armour (Hvy / Lt)
		Armoured Recon
		Armoured Car
		Assault Gun
		Arty / Mor
		Mot Arty / Mor
		Self-propelled (SP) Arty
		Parachute Arty / Mor
		Glider Arty / Mor
		Mot Rocket Launcher
		SP Rocket Launcher
		Inf Gun
		Mot Inf Gun
		SP Inf Gun
		Anti-tank Gun
		Mot Anti-tank
		SP Anti-tank
		Anti-aircraft (flak) (Hvy / Lt)
		Mot Anti-aircraft (flak) (Hvy / Lt)
		SP Anti-aircraft (flak) (Hvy / Lt)
		Infantry
		Mot Inf
		Mech Inf
		Mountain Inf
		Glider Inf
		Mot Glider Inf
		MG
		Mot MG
		Hvy Inf
		Mot Hvy Inf
		Special Forces / Commando Inf
		Mot Special Forces / Commando Inf
		Parachute Inf (Para)
		Mot Para
		Engineer / Pioneer (Eng)
		Mot Eng
		SP Eng
		Mot Bridging Eng
		Base / Supply / Logistics

## Annex E – Terrain Effects Chart

- ⊕ Terrain Effects may vary from map to map and are set in the MapMaker application. The values here are taken from the Hofen map – a typical Ardennes map. Generally the maps are similar except when the tank barrier (west wall dragon's teeth) terrain type replaces the fort type since they use the same symbol.
- ⊕ Crossing icons are coloured pink when primed and light grey when unprimed.
- ⊕ Movement effects are expressed in percentage terms of a unit's current movement rate, which may in turn be affected by the unit's fatigue, formation, task movement rate and / or supply. Stream and Creek Bed are one exception – these act as a modifier on the movement rate of the underlying terrain (so if the underlying terrain has a movement rate of 60, where there is a stream the rate will be multiplied by 10%, becoming 6). Where a movement rate is 0, that terrain type is impassable.
- ⊕ Visibility effects are expressed in percentage terms, where the effect is the reduction in visibility for each 100m through which the line of sight passes. The smaller the value the further one can see through this terrain. Eg a visibility reduction value of 33% means a line of sight would be blocked after 300m. The values are based on observing a deployed person, vehicle or gun. Units moving and firing are easier to see.
- ⊕ Vulnerability effects are expressed in percentage terms and refers to the probability of hitting a deployed person within the specified terrain from direct fire (rifles, MGs, tank guns etc) and area fire (mortar, arty and rocket bombardments and air strikes). Many other factors also apply, such as the firing unit's posture and effectiveness.

	Name	Movement		Visibility			Vulnerability	
		Mot	Non	Pers	Veh	Gun	Direct	Area
Crossings								
	Empty Crossing	0	0	-	-	-	-	-
	Ford or Ferry	0	15	-	-	-	-	-
	Lt Rd Bridge	18	30	-	-	-	-	-
	Med Rd Bridge	27	40	-	-	-	-	-
	Hvy Rd Bridge	36	50	-	-	-	-	-
	Rail Bridge	0	30	-	-	-	-	-
Roads & Rail								
	Track	35	75	-	-	-	-	-
	Minor Road	70	100	-	-	-	-	-
	Road	90	100	-	-	-	-	-

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	Name	Movement		Visibility			Vulnerability	
Road & Rail		Mot	Non	Pers	Veh	Gun	Direct	Area
	Highway	100	100	-	-	-	-	-
	Railway	5	75	-	-	-	-	-
Dikes								
	Dike or Breakwater	0	20	-	-	-	-	-
Rivers & Water								
	Stream or Creek Bed	18	25	-	-	-	-	-
	Minor River or River Bed	0	5	-	-	-	-	-
	Major River or Sea	0	0	-	-	-	-	-
	Lake or Sea	0	0	-	-	-	-	-
Fort								
	Tank Barrier	0	37	25	13	6	61	50
Urban								
	Village	36	41	25	16	10	61	81
	Town	25	31	33	20	13	41	61
	City	18	20	50	34	25	20	41
	Industrial	25	31	25	16	10	41	61
	Factory	18	35	50	50	50	41	61
Vegetation								
	Heide	35	50	6	3	2	-	-
	Orchard	10	37	25	13	10	90	-
	Lt Woods	20	40	10	5	4	81	-
	Woods/Forest	0	30	50	50	50	41	115
Ground								
	Airfield	100	100	5	3	2	-	-
	Beach	7	50	25	5	4	80	80
	Marsh	0	20	10	3	2	61	61
	Broken	0	37	25	13	8	61	50
	Polder	9	35	20	5	4	41	41
	Clear	35	50	-	-	-	-	-

## Annex F – Other Tables

Table 1 – Prime Crossing Times

Crossing Type	Time to Prime
Ferry or Ford	2 hours
Light Road Bridge	4 hours
Medium Road Bridge	plus 8 hours
Heavy Road Bridge	plus 16 hours
Rail Bridge	plus 16 hours

Table 3 – Crossing Construction Personnel Cap

Crossing Type	Personnel Cap
Light Road Bridge	600 men
Medium Road Bridge	900 men
Heavy Road Bridge	1200 men

Table 2 – Construct Crossing Times

Crossing Type	Time to Construct
Light Road Bridge	10 hours
Medium Road Bridge	plus 20 hours
Heavy Road Bridge	plus 40 hours

Table 4 – Standard Stock Levels

Unit Size	Stock Level (in days)
Army	20
Corps	10
Division	7
Brigade	4
Battalion	2
Company	2
Platoon	1
Section	1

Table 5 - Standard Orders Delay

Force Size	Mot Duration	Non-Mot Duration
Army Group	150	200
Army	120	160
Corps	80	110
Division	60	80
Bde/Regt	40	60
Bn	30	40
Company	20	30
Platoon	20	30
Squad/Section	20	30

Table 6 - Standard Command Range

Force Size	Mot Eff Range	Mot Max Range	Non-mot Eff Range	Non-mot Max Range
Army Group	60,000	80,000	45,000	60,000
Army	37,500	50,000	28,000	37,500
Corps	18,750	25,000	14,000	18,750
Division	12,000	16,000	9,000	12,000
Bde/Regt	6,000	8,000	4,500	6,000
Bn	3,000	4,000	3,000	3,000
Company	1,500	2,000	1,125	1,500
Platoon	750	1,000	550	750
Squad/Section	375	500	280	375

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Table 7 - Military Structure Names and Sizes

Symbol	Unit Size	Men (Approx)	British Infantry	British Armor	British Artillery	American	German and Italian
XXX	2+ Divs	20000-40000	Corps	Corps		Corps	Corps
XX	2-3 Bdes	10000-20000	Div	Div		Div	Div
X	2-3 Bns	1000-2000	Bde	Bde			
III	2-3 Bns	1000-2000				Regt	Regt
III	3-5 Sqns / Btys	400-800		Regt	Regt		
II	3-5 Coys	400-800	Bn			Bn / Gp	Bn / Gp
I	3-4 Pls	100-160	Coy	Sqn	Bty	Coy / Sqn / Bty	Coy / Sqn / Bty
▣	2-4 Sects	30-40	Pl	Tp	Tp	Pl / Tp	Pl
▣	5-10 men 3-4 vehicles 3-4 guns	5-10	Sect	Sect	Sect	Sect	Sqd

Table 8 - Unit Icon Colours

Background	Text	Service and Branch
Grey	Black	German Army
Black	White	German SS
	Olive	German Greif Combat troops
	Orange	Dutch SS
Blue	Light Blue	German Air Force
Blue	Black	German Airborne
Dark Blue	Light Blue	German Navy
Olive	Black	United States Army
Dark Olive	Cream	United States Airborne
Light Brown	Dark Red	British Army
	Cream	British Guards
Red	Yellow	British Airborne
Light Grey	Red	Polish Airborne
Orange	Black	Dutch Army
Red	Yellow	Belgian Army

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Table 9 - Rout Status

Icon	Status	Meaning
	OK	Units actively carrying out orders
	Halted	Units temporarily stopped due to enemy resistance
	Retreating	Unit pulling back to safety due to heavy enemy fire
	Retreat Recovery	Retreated unit preparing to return to the advance
	Routing	Unit fleeing in disarray with broken morale
	Rout Recovery	Routed unit recovering morale, preparing to rejoin battle

Table 10 – Deployment Status

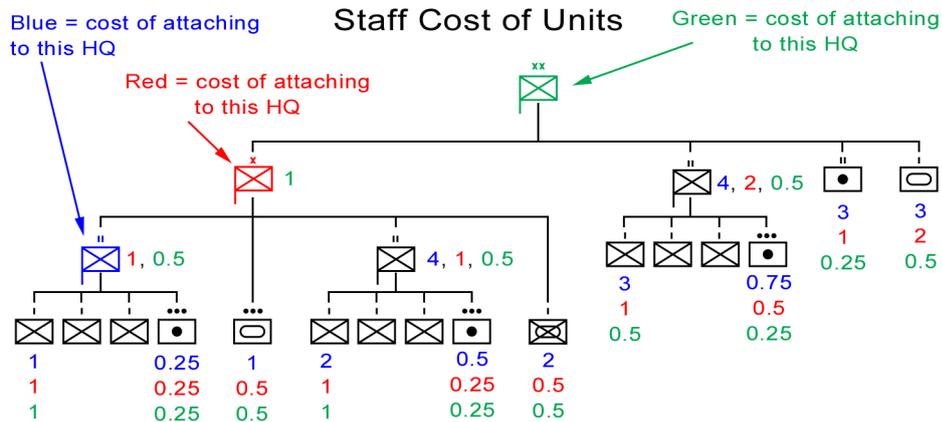
Icon	Deployment Status
	Undeployed (standing or walking)
	Taking Cover
	Deployed
	Dug-In
	Entrenched
	Fortified

Table 11 – Standard Reassessment Times

Unit Size	Reassessment Time ( hours )
Army	24
Corps	24
Division	12
Brigade	6
Battalion	4
Company	2

Table 12 - Victory Levels

Victory Level	Your VP minus Enemy VP
Decisive Victory	51 to 100
Marginal Victory	16 to 50
Draw	-15 to 15
Marginal Defeat	-16 to -50
Decisive Defeat	-51 to -100



# Glossary

⊕ In the table below, (F) indicates a French term, and (G) indicates a German term. Non-English terms are italicised.

Abbreviation	Full Term or Translation	Meaning
(r)	(russisch) (G)	German designation for captured Russian equipment
(t)	(tsechoslowakisch) (G)	German designation for captured Czechoslovakian equipment
AA	Anti-Aircraft	
AArmFP	Anti-Armour Firepower	Measures a unit's ability to destroy armoured vehicles with direct fire
Abn	Airborne	Troops deploying to the battle area by parachute or glider
AC	Armoured Car	Wheeled AFVs
AFV	Armoured Fighting Vehicle	
AG	Assault Gun	Tracked AFV with no turret and a limited-traverse main armament mounted in the hull, intended for close support of infantry
Aggro	Aggression	
AI	Artificial Intelligence	
Airmobile		Troops or units deploying to the battle area by air (can be air landing, glider, or parachute)
AL	Air Landing	Troops deploying to the battle area by transport aircraft
AP	Armour-Piercing	Ammunition intended to penetrate and destroy armoured vehicles
APerFP	Anti-Personnel Firepower	Measures a unit's ability to kill unprotected personnel with direct fire
Arm	Armour(ed)	Tank unit or measure of a unit's armoured protection
Armee (G)	Army	
Arty	Artillery	
Aslt	Assault	
AT	Anti-Tank	
ATR	Anti-Tank Rifle	Heavy rifle intended for infantry use against tanks
Au	Australian	Australian units
Bde	Brigade	
Bn	Battalion	
BombFP	Bombard Firepower	Measures a unit's ability to suppress and damage the enemy with indirect fire
Bty	Battery or Batterie (G)	Company-size artillery unit
BZ	Bombardment Zone	The area of effect of indirect fire like artillery bombardments or airstrikes
cal	Calibre	Indicates the diameter of projectile fired by a weapon
Canon (F)	Gun	
Carrier		Light, open-topped, tracked AFV used to carry infantry

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Cav	Cavalry	Horsed infantry (except for United States Cav which were a mix of light tanks and mechanised or motorised infantry), usually used for recce
Cdo	Commando	Army units in a naval raiding role
Commonwealth		Collective name for countries and units of the British Commonwealth, including British, Australian, New Zealand, and Maltese units
Coy	Company	
Cruiser		British designation for tanks intended for fast exploitation and combat against other tanks
CS	Close Support	British designation for tanks intended to provide smoke or HE support for Cruiser tanks
cwt	Hundredweight	British measurement of truck capacity equal to 112lb or 51kg
Det	Detachment	
Div	Division	
Eng	Engineer	
Fallsch	Fallschirm (G)	Parachute units other than parachute infantry
Fallschirmbrigade (G)	Parachute Brigade	
FBB	Führer Begleit Brigade	Armored Brigade formed from elements of the GD Division originally established to protect Hitler's HQ "Wolfschanze"
Fd	Field or Feld (G)	Artillery units or guns with a calibre of 76-105mm, or a standard Allied engineer unit
Fd Park	Field Park	Allied engineer heavy-equipment unit
Feldersatz	Field Replacement	An attached training battalion used in German Infantry divisions to provide a ready source of replacements
FGB	Führer Grenadier Brigade	Armored Brigade formed from elements of the GD Division and "outer guard" of Hitler's HQ "Wolfschanze"
FH	Feldhaubitze (G)	Field Howitzer (see How)
FJ	Fallschirmjaeger (G)	Parachute infantry
Flak	Fliegerabwehrkanone (G)	Anti-aircraft unit or gun (literally "aircraft defence gun")
Flieger (G)	Airborne	
FT	Flamethrower	
FUP	Forming Up Point	Location where assaulting units move into attack formation and reorg for the assault
GD	Grössdeutschland (G)	Greater Germany
GMC	Gun Motor Carriage	Designation given to US tank destroyers
Geb	Gebirgs (G)	Mountain units (except for mountain infantry)
GebG	Gebirgseschuetz (G)	Mountain gun
GebH	Gebirgshaubitze (G)	Mountain howitzer
GJ	Gebirgsjaeger (G)	Mountain infantry units
Gp	Group or Gruppo (It)	Unit size, usually equivalent to a battalion
Grenadier	Infantry (G)	
Gun		Artillery piece (in specific terms an artillery piece firing on a low trajectory, often used interchangeably with "howitzer")
HAA	Heavy Anti-Aircraft	

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HE	High Explosive	Explosive ammunition intended for use against unarmoured targets
HHour		Start time of the critical phase in a plan, usually the assault in an attack
HMC	Howitzer Motor Carriage	Designation given to US self propelled artillery
HMG	Heavy Machine Gun	
How	Howitzer	Artillery piece firing on a high trajectory (often used interchangeably with „gun“)
HQ	Headquarters	
HT	Half-Track	
Hvy	Heavy	Infantry units equipped primarily with crew-served weapons, or artillery units or guns with a calibre of 203mm or greater
IG	Infanteriegeschuetz (G)	Infantry Gun – a light artillery piece operated by infantry units for direct fire
Inf	Infantry	
Intel	Intelligence	
JgdPz	jagdpanzer	Tank Destroyer (literally “hunting tank”)
K	Kanone (G)	Long-range gun
Kampftrupp (G)	Battle Troop	Small battlegroup
Kettenkrad	Kettenkraftrad (G)	German half-track motorcycle
KG	Kampfgruppe (G)	Battlegroup
kl	klein (G)	Small
Kompanie (G)	Company	
KOMR	King's Own Malta Regt	Maltese infantry units
Korps (G)	Corps	
Krad	Kraftrad (G)	Motorcycle units
Kuebelwagen (G)	Jeep	
KwK	Kampfwagenkanone (G)	AFV gun
L	Length	Indicates length of gun in multiples of the calibre
LAA	Light Anti-Aircraft	
LAH	Leibstandarte Adolf Hitler (G)	Hitler's bodyguard unit
LAN	Local Area Network	
LeFH	leichte Feldhaubitze (G)	Light howitzer
leGebG	leichtes Gebirgsgeschuetz (G)	Light mountain gun
leGrW	leichtes Granatwerfer (G)	Light mortar
leIG	leichtes Infanteriegeschuetz (G)	Light infantry gun (see IG)
LG	Leichtgeschuetz (G)	Recoilless rifle (literally “light gun”)
LLSt	Luftlande Sturmregiment (G)	Air Landing Storm Regiment
LMG	Light Machine Gun	
LOS	Line Of Sight	
LRC	Light Recce Car	Light armoured car used for recce

## COMMAND OPS 2

Lt	Light	Tanks with a low vehicle weight or light armament, or artillery units or guns with a calibre of up to 75mm
LW	Luftwaffe (G)	German Air Force
MC	Motorcycle	
Mdm	Medium	Artillery units or guns with a calibre of 106-202mm
Mech	Mechanised	Unit mounted entirely in tracked vehicles (usually armoured)
MG	Machine Gun	
MGMC	Machine Gun Motor Carriage	
MMG	Medium Machine Gun	
Mor	Mortar	Smoothbore weapon launching a finned bomb on a high trajectory
Mot	Motorised	A unit that can be carried entirely by its own motor vehicles
MP	Maschinenpistole (G)	SMG (literally "machine pistol")
Mrs	Moerser (G)	Heavy howitzer
Mtn	Mountain	Units or equipment intended for use in mountain terrain
NATO	North Atlantic Treaty Organisation	Post-war alliance of the US and Western European countries
NW	Nebelwerfer (G)	Mortar or rocket-launcher primarily used to deploy smoke ammunition (literally "smoke launcher")
ObjLoc	Objective or Order Location	Location on the map where an order is to be carried out.
Organic		Relating to the usual or standard organisation of units in a military structure
Pak	Panzerabwehrkanone (G)	Anti-tank gun (literally "armour defence gun")
Para	Paratroop(er)	Soldiers or units deployed to the battle area by parachute
Pl	Platoon	
Pnr	Pioneer or Pionier (G) or Pionieri (It)	Engineers, especially those with a combat role
Portee		Artillery piece mounted on a truck so that it can be fired from the truck or dismounted and fired from the ground
PKW		German light utility vehicle
Pz	Panzer (G)	Tank or armoured
PzB	Panzerbuechse (G)	ATR (literally "armour rifle")
PzBefWg	Panzerbefehlswagen (G)	Armoured command vehicle
Pz Gren	Panzergrenadier	German mechanized or motorized infantry
PzJg	Panzerjaeger (G)	Anti-tank (literally "tank hunter")
PzKw	Panzerkampfwagen (G)	Tank (literally "armoured fighting vehicle")
RA	Royal Artillery	British artillery units
RCT	Regimental Combat Team	
RE	Royal Engineers	British engineer units
Recce	Reconnaissance	
Recon	Reconnaissance	
Regt	Regiment	

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RHA	Royal Horse Artillery	British artillery units in armoured forces
RM	Royal Marine	British naval infantry units
Sapper		Engineer
SC	Scout Car	Light armoured car used for recce or liaison
Schtz	Schuetzen (G)	Early-war German motorised or mechanised troops, usually within Pz Divs (literally "marksmen")
SdKfz	Sonderkraftfahrzeug (G)	German designation for tracked vehicles (literally "special motor vehicle")
sFH	schwere Feldhaubitze (G)	Heavy howitzer
sGrW	schweres Granatwerfer (G)	Heavy mortar
sIG	schweres Infanteriegeschuetz (G)	Heavy infantry gun (see IG)
sK	schwere Kanone (G)	Heavy gun (see K)
SMG	Sub Machine Gun	
sMG	schweres Machinengewehr (G)	HMG
SP	Self-Propelled	Artillery mounted on a motorised or tracked chassis, usually armoured
sPzB	schwere Panzerbuechse (G)	Heavy ATR
Sqn	Squadron	
SS	Schutzstaffel (G)	Units or soldiers of the Nazi Party's private army
StuG	Sturmgeschuetz (G)	Assault gun (literally "storm gun")
StuH	SturmHaubitze	Howitzer assault gun
Sub...	Subordinate	Belonging to or part of a larger force or activity
Super...	Superior	Controlling a larger force or activity
Tp	Troop	
UK	United Kingdom	British units
VAK	Volksartilleriekorps	A group of 5 or 6 large calibre Artillery battalions grouped under a German Corps HQ
VG	Volksgrenadier	An honorific title given to some late-war German infantry divisions (literally "People's Infantry")
VW	Volkswerfer	Similar to the VAK but employing rocket launchers
VP	Victory Point	
zbV	zum besondere Verwendung (G)	Special-purpose

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# Credits

## Panther Games Team

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Miquel Ramirez - AI and UI programming (CO2)  
Paul "Panther Paul" Scobell – Programming  
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Justin Church - installer

GAME MANUAL

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Darren White - support