COMBAT MISSION

GAME ENGINE MANUAL

Version 3.00
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Look for this symbol next to some paragraphs. It denotes changes vs. Engine v2.0
INSTALLATION & LICENSING

INSTALLATION FROM DISC

In order to install the game, insert the game disc into the DVD drive.

(PC) The Installation Menu should appear if you have CD Autostart enabled on your computer. Click on the “Install Game” option to begin the installation process. If you have CD Autostart disabled, or if the Installation Menu does not appear, please browse the contents of the disc and simply double-click on the file called “Setup.exe”. That will manually launch the game installer.

(Mac) For the Mac version, simply open the disc icon and copy the game application into a place on your harddrive (e.g. the Applications folder).

INSTALLATION FOR DOWNLOAD VERSION

After you have successfully downloaded the Combat Mission setup file, double-click on it to launch the installer.

Note: your downloads do not have an expiry date. However, we do not guarantee that they will remain available for ever and ever. So it is still a good idea to keep the installer file you downloaded and copy it somewhere safe (e.g. burn to disc, USB stick, or external harddrive) so you can reinstall the game later on.

LICENSE OVERVIEW

Combat Mission is protected by an online activation system that helps us restrict illegal distribution of the software.

HOW TO FIND YOUR LICENSE KEY

For download versions, (including download&mail) it is the same code that you used to download your game. You will find your license key saved in your online account at www.battlefront.com/store. After logging in, click on the “My Account” link from the top menu. If you forgot your login, go to www.battlefront.com/lostpw to retrieve a new random password as well as your username in the same email. The username is called “User account” in the same email.

For mail delivery only versions, the license key is printed on the product itself, usually on the back of the case or the game manual, sometimes inside the case or manual cover, depending on the product. Do not lose this label because we may not be able to retrieve your license key for you if you do!

LICENSING

When you first run CM, after the initial install, you will be prompted to activate your copy. In most cases all you need to do is:

a) make sure the computer on which you have installed the game has an active online connection to the internet
b) choose “Online Activation” from the dialog window
b) enter your license key into the correct field.
c) hit the “Activate” button and wait a few seconds while your license authorizes.

If you wish to install the game on a computer which has no internet connection, you
must perform what is called a “Manual License Request”  

After launching the game:

a) click on the “Manual Activation” button  
b) write down or memorize the Authorization Request Code presented to you  
c) on a computer that is connected to the internet, go to http://www.battlefront.com/helpdesk  
d) enter your License Key and the Authorization Request Code in the appropriate place  
e) write down or memorize the Authorization Code you receive from us  
f) go back to the computer where the game is installed. Launch the game again and click on “Manual Activation”. Ignore the Request code and click on the Next button. Enter the Authorization Code from step e above  

Off-line licensing is also a good workaround for online computers which experience problems with a firewall, router or proxy settings and cannot establish an internet connection to the activation servers.  

■ ADDITIONAL ACTIVATIONS

Our End User License Agreement (see page 4 of this manual) allows you to have the game activated on one PC and one backup PC. Our online activation system enforces this limit, but will allow you two additional activations without asking questions (so called “overflow activations”). These Overflow Activations are meant to be used when you switch to a new PC and would like to continue playing the game there.  

Note: there is no way to “unlicense” a previously activated copy on a computer. Which has the advantage that you can’t ever forget to do so :^)  

In addition to the above 4 activations, you can add one extra activation to your key every 365 days.  

(PC) In order to do this, lease go to www.battlefront.com/helpdesk and request an additional activation for your key by clicking “Submit Ticket”. Do not forget to let us know what your key and the game title is!  

■ LICENSE ACTIVATION SUPPORT

Battlefront.com prides itself on customer service, and this continues with the implementation of the online licensing system. Please check out our Knowledgebase section which explains how online activation works in detail:

http://www.battlefront.com/helpdesk  

If you ever need specific assistance, do not hesitate to email us with a description of your problem. We usually respond within 1 working day.  

Please note: only the original Battlefront.com version of the game is using our Online Activation System. If you have purchased your game elsewhere (e.g. in a store), then you probably have the retail version of the game, which is NOT using our Online Activation System.  

■ GAME FILE ORGANIZATION

(PC) The installer places the main game files, such as the Data files and executable,
into the folder selected by you during the installation process. In addition to that, a folder is also created automatically inside your MyDocuments directory, which contains personal files, such as your preferences and save games. This location is hardcoded based on your Windows settings for your user document files.

(Mac) The game consists of one app package containing all the game relevant files. In order to access the game files, Control-Click on the app and select “Show Package Contents” from the menu. (Note: this applies to the version purchased from Battlefront.com directly. If you purchase through the Apple App Store™, please note that the files are stored under “Application Support”).
KEYBOARD & MOUSE CONTROLS

CAMERA NAVIGATION

(MOUSE DEFAULT)
- Cursor at screen edges: Move
- Cursor in upper corners: Rotate
- Left-click and drag: Move camera
- Right-click and drag: Pivot camera
- Right-click and hold:
  (when unit selected): Pivot around unit
- Mouse wheel: Elevate
- Mouse wheel + SHIFT: Elevate + Pitch
- Mouse Wheel + CTRL: Pitch
- CTRL + Left-click: Jump to Map Location

MOUSE (RTS)
- Cursor at screen edges: Move
- Cursor in upper corners: Rotate
- Left-click and drag: Pivot camera
- Right-click (on unit or floating icon): Pop-up Command Menu
- Mouse Wheel: Zoom in/out
- CTRL + Left-click: Jump to Map Location

MOUSE (FPS)
- Cursor at screen edges: Move
- Cursor in upper corners: Rotate
- Left-click and drag: Pivot camera
- Right-click (on unit or floating icon): Pop-up Command Menu
- Mouse wheel: Elevate
- Mouse wheel + SHIFT: Elevate + Pitch
- Mouse Wheel + CTRL: Pitch
- CTRL + Left-click: Jump to Map Location

Note: In FPS mode, while moving with the WASD keys, the camera will pivot towards the location of the cursor. In this way you can "guide" the camera smoothly as you move it.

(KEYBOARD - DEFAULTS)
- W or Up Arrow: Move Forward
- A or Left Arrow: Move Left
- D or Right Arrow: Move Right
- S or Down Arrow: Move Back
- Q: Rotate Left
- E: Rotate Right
- V: Reverse View
- R: Raise camera
- F: Lower camera
- Z: Zoom out
- X: Zoom in
- C: Wide Angle View
- 1 - 9: Preset Camera Positions
- Arrow Keys: Fine Movement

UNIT SELECTION

- Left-click on Unit: Selects Unit
- Right-click on Map: Deselects Unit
- Double-click on Unit: Group-select formation
- SHIFT+Left-click: Adds additional units to group
- SHIFT+Left-click & Drag: Drag selection rectangle
around multiple units
(Nota: + and - keys are restricted to “next” unit within
the group when a group is selected)
CTRL+1-9 ......................... Assign to camera group
ALT+1-9 ........................... Select and jump to camera group
(Nota: To assign units to a camera group, the desired
units must first be selected. In Iron mode, only HQ
units can be assigned to camera groups)

**COMMANDS**
ESC ......................... Pause Game
TAB .......................... Lock Camera to Unit
(Note: the camera remains locked in even after you de-
select a unit unless you select a new one or hit TAB
again)
- ............................... Select Previous Unit
+ ............................... Select Next Unit
(Note: in the End Game Review and Scenario Author
Test modes, the +/- keys also work with enemy
units)
F12 ............................... Select Last Unit
{ and } ........................... Adjust 3D Model Quality
' ................................. Talk to Internet Opponent

**COMMAND KEYS (DEFAULTS)**
B ................................. Move Fast Command
N ................................. Move Command
\ ................................. Reverse Command
H ................................. Target Command
Y ................................. Target Light Command
G ................................. Face Command
/ ................................. Deploy Command
P ................................. Pause Command
H ................................. Hide Command
[............................... Dismount Command
]} ............................... Vehicle Open Up Command
; ................................. Pop Smoke Command
F5 ................................ Movement Command Panel
F6 ................................ Combat Command Panel
F7 ................................ Special Command Panel
F8 ................................ Admin Command Panel
DEL ............................... Clear Unit Target
BACKSPACE .................. Delete Last Waypoint

**EDITOR**

**3D MAP PREVIEW**

**BUILDINGS**
CTRL+Left-click on wall .......... change windows/doors layout
ALT+CTRL+Left-click wall ........ change windows/doors layout for
......................................... WHOLE side of building (all floors)
CTRL+Left-click on roof  ................... change shape/type of roof
SHIFT+Left-click building ............... change “Facade” (texture) of the
...........................................whole building
CTRL+SHIFT+Left-click ............... cycle through balcony types for
.............................................selected floor
CTRL+SHIFT+Left-click on ground floor
...........................................cycle through balcony types for the WHOLE side of the build-
..............................................................ing (all floors)
ALT+Left-Click  ......................... change building details
ALT+SHIFT+Left-Click ............... cycles through stages of major
damage to building including
.................................................complete rubble

■ FLAVOR OBJECTS

LEFT CLICK ................................. rotate object
SHIFT+LEFT CLICK ..................... nudge object in the direction
the camera is facing
CTRL+LEFT CLICK ..................... delete object
ALT+LEFT CLICK ....................... Select object for precise cursor
.............................................placement

■ 2D MAP EDITOR

CTRL+Right-click ....................... change current tile rotation
Left-click .................................... place tile/object
Left-click & hold ....................... “paint” tile/object (not all
tiles/obj.)
Right-click ............................... delete tile/object (of the same type
.................................................as currently selected)
O ................................................. Toggle map overlay visibility

■ OPTIONS

Alt-B ........................................ Toggle Artificially Bright Night Graphics
Alt-C ........................................ Toggle Camera Shake
Alt-H ........................................ Toggle Vehicle Hit Description Text
Alt-I ........................................ Toggle Floating Icons
Alt-J ........................................ Toggle Show Objectives
Alt-K ........................................ Toggle Smoke
Alt-L ........................................ Toggle Show Landmarks
Alt-M ........................................ Toggle War Movie Mode
Alt-P ........................................ Toggle Show All Move Paths
Alt-Q ........................................ Quit
Alt-R ........................................ Toggle Shaders
Alt-S ........................................ Toggle Sound
Alt-T ........................................ Toggle Tree Display
Alt-W ........................................ Toggle Shadows
Alt-Z ........................................ Toggle Command Links

■ CUSTOMIZING HOTKEYS

CMx2 allows you to customize the hotkeys to your liking. In order to do so, at the
main menu select Options, and at the bottom of the screen select Controls. To edit
a hotkey, left-click on the desired command and then press the desired hotkey.
You can also edit hotkeys directly in the “hotkeys.txt” file in your User Data folder.
The order buttons under the various Command Panels will display the assigned
key in green text.
CAMERA CONTROL MODE

Three different camera control modes are available: Standard, RTS, and FPS. The camera control mode options are found by selecting Options in the menu menu and then selecting Controls. Standard mode is the default mode, used by CMx2 previously.

In RTS mode, the left mouse button pivots the camera, and the scroll wheel zooms the camera in and out. Most importantly, right-clicking on a unit or its floating icon with the right will bring up the pop-up Command Menu.

In FPS Mode, the left mouse button also pivots the camera and right-clicking units brings up the Command Menu, just like RTS Mode. However, in FPS Mode, the camera will pivot to follow the position of the cursor while it moves. Essentially, you move the camera using the WASD keys while moving the mouse to smoothly pivot it.

It is unlikely that you will change camera control modes often, so you should experiment with all three modes and decide which fits you best.

OPTIONS

The Options menu allows various global game options, mainly with regard to visual and audio quality, to be set prior to playing a game. For the most part these settings require infrequent resetting. Features that need more frequent customization are set within the game using Hotkeys.

The Options are:

- **Sound**: Toggles all in-game sounds on or off.
- **Music**: Toggles all in-game music on or off.
- **Display Size**: you can select the game to run at the following resolutions: Desktop (the game will run at whatever resolution your desktop is set to), 1024x768, 1152x864, 1280x960

If you want to run the game in a resolution and refresh rate not listed, you can manually configure these settings by editing the “display size.txt” file located in your game directory. Simply change the numbers that you see there with the width (in pixels) and height (in pixels) and refresh rate (in Hertz) you wish to run the game.

**Example**: For 1440x900 at 75Hz refresh rate, you would delete the numbers in that file and replace with “1440 900 75” (without quotes). If you put in all zeroes - example: 0 0 0 - the game will revert to using your desktop resolution and refresh rate.

**Note**: Exercise caution and only use a resolution and refresh rate supported by your monitor as damage to your monitor or display adaptor could occur, especially if you use too high a setting.

- **Vertical Synchronization**: this option optimizes image quality based on your monitor refresh rate. This setting may reduce your framerate, however. Activate this option if you experience “screen tearing”.

- **3D Model Quality**: Offers several settings for balancing model details with speed. The choices range from “Fastest” (lowest quality, highest game speed) to “Best” (best visual quality but possibly lower game speed). “Balanced” offers a good
compromise between model quality and frame rate speed.

- **3D Texture Quality**: Same as above, except it balances the quality of the graphics. For computers with video cards with less than 64 MB memory, the Fast and Fastest settings are recommended.

- **Antialias / Multisample**: Allows you to toggle Anti-Alias and Multisample on or off. If switched on, this option improves visual quality but may cost game performance.

- **High Priority Process**: This option instructs Windows to assign “normal” application priority or “high” application priority to the game when it is run. The “normal” setting can fix lagging mouse and/or keyboard input issues for some systems. The “high” setting is recommended if you have not experienced any input lag problems. The “high” priority option allows Combat Mission to use more system resources and may result in better performance.

- **Language**: CMx2 comes in a multi-language configuration. It defaults to English. If you would like to switch to a different language, you can make the choice here. You must exit the game after changing languages, in order to access the correct language scenario folders.

  **Note**: changing the in-game language instructs the game to look into localized “GameFiles” folders for scenarios, save games and QB maps, specific to each language. These folders are empty by default, and you will have to copy the English files from the default GameFiles directory and/or translate them before they are accessible in the selected non-default language.

- **Controls**: Allows you to set key bindings for hotkeys and change the camera control mode.
CM offers three basic types of scenarios to play: Campaigns, Battles, and Quick-Battles.

**Battles**

As the game title “Combat Mission” implies, the actual battle is at the core of the game. This is where player and/or computer-controlled forces clash and their fate is decided. Battles constitute the base for the Campaigns and Quick Battle systems, explained further below. A number of pre-designed and tested battles and campaigns are available with the game. By using the powerful Editor tools, players can also create and share an unlimited number of new battles.

Battles are missions put together by a scenario designer, and include the map, objectives, forces, reinforcements and AI scripting. Battles can depict a nearly unlimited number of combat situations. The Editor section of the Game Manual explains in detail how Battles can be created.

**How to start**

To start a Battle, click on the Battle button on the main menu screen. The battle window opens, listing all available battles from the game’s “Scenarios” folder. You can sort the list of battles by using the parameters found in the lower left corner. Clicking on the title of each battle provides additional information to give the player a quick idea of what the Battle is about.

- **Image**: an optional image associated with the Battle. This could be an in-game shot, or map overview, or anything else that the scenario designer deems worthy of showing. If no image is provided, this area remains black.

- **Parameter icons**: four icons showing important parameters for the battle:
  - **Environment**: (from left to right) Forest, Hills, Open, River, Rough, City, Town, Village
  - **Time of Day**: Dawn, Day, Dusk, Night,
  - **Battle Type**: Assault, Attack, Probe and Meeting Engagement.
  - **Battle Size**: Tiny, Small, Medium, Large, Huge.
  - **Duration**: the duration of the battle in minutes
  - **Temperature**: the air temperature during the battle
  - **Description**: a short description entered by the scenario author to describe what
the mission is about. The player has the option to click Fight! or to Cancel. The latter brings the player back to the Battle selection screen. Hitting Fight! opens the next screen:

- **SELECT COMBAT FORCE**
- **SELECT GAME OPTIONS**

The player now chooses the side he would like to play.

In the next screen, the Style of play and number of players is set, as well as the difficulty level for the mission.

**Players** - options range from single play in real-time or turn-based, or various 2 player options (LAN/Internet, Hotseat and Email)

**Skill** - the difficulty setting including Basic Training, Veteran, Elite and other settings.

Click OK to load the scenario.

**MISSION BRIEFING**

The mission-briefing screen opens when first entering a battle. The briefing screen shows:

- **Strategic Map** (e.g. an overview map of Normandy or the geographical location of the battle). Empty if not uploaded by scenario author.

- **Operational Map** (e.g. a topographical map of the neighborhood where the battle takes place). Empty if not uploaded by scenario author.

- **Briefing Text.** Describes the mission orders to the player using a common format.

- **Button for Tactical Map.** Toggles map or briefing view and shows a tactical map to the player, e.g. a bird’s eye view of the battlefield. Empty if not provided by scenario author.

- **Designer Notes:** shows additional notes (only if provided by the scenario author) to both players. Unlike the briefing text, the designer notes do not impose a common format.

Hitting OK takes the player directly to the 3D battlefield.

**SETUP PHASE**

When you first enter the 3D battlefield you start out in the Setup Phase. Gameplay is paused and both sides are able to move their units within the available Setup Zones.

The Setup Zones are visible as colored areas (in shades of red for one player, and shades of blue for the other player) overlaid on the terrain. Each side can have
up to three different colored Zones in any configuration (including non-contiguous). Units may be moved within the same colored Zones they start within, but not outside. Units that are not within any Setup Zone may not be moved during the Setup Phase, though they may be given movement or other orders which will be implemented once the battle begins.

**Note:** If Terrain Objectives are part of the mission, then you can toggle their visibility (during the setup phase and at any later time during the battle) by using the hotkey combination Alt-J.

Almost all of the regular Commands available to a particular unit while in battle are available during the Setup Phase. However, some Commands only activate once the battle starts. For example, any Combat Command issued to a unit during Setup Phase won't do anything until the battle starts. Movement Commands given to a unit within its Setup Zone will move it there immediately and without any game effect, such as Fatigue. Movement Commands which are placed outside of a Zone instruct the unit to move to that location as soon as the battle starts, but not before. Other Commands, such as Button/Unbutton, Acquire, and Split, have an immediate effect and can be done or undone instantly and without their typical game costs (time delays, Fatigue, etc.).

In addition to your soldiers, weapons and vehicles, you can also position various types of fortifications (if available) during the setup phase, such as Trenches, Barbed Wire and other obstacles, or mines.

Once you have positioned your units to your liking and are ready to start the battle, click on the red blinking button in the lower right hand corner of the screen. This is the “End Phase” button which quits the Setup Phase and launches the actual battle. The game clock will start ticking and will continue to do so until you pause (RealTime) or until the 60 seconds of the first Action Phase are completed (WeGo). More about this in the following chapter about “Gameplay Styles”.

### END GAME REVIEW

After a battle ends, the End Game review screen displays the “score” for both players, listing all mission parameters and objectives (including hidden objectives), indicating whether or not the player achieved each objective (and to what extent), and totaling all points, thereby calculating the victory level. The victory levels range from total defeat to total victory and various steps in between (including minor, major and tactical defeats/victories as well as a “draw” if the points accumulated by both sides are nearly equal).

Hovering the mouse cursor over the individual Parameters and Objectives shows further details about the point calculation and totals near the bottom of the screen.

### COMBAT VICTORIES

The players may also review the 3D battlefield after the battle. All Fog of War restrictions are removed, so they can see all units for both sides at the current state when the battle ended. Players can select both friendly and enemy units, and once selected, the Combat Victories for the given unit are shown in the lower left of the screen. The Combat Victories display lists how many and what type of infantry, vehicles, and big guns this unit destroyed.

**Note:** in the End Game review, using the +/- keys to
“jump to the next unit” also works with enemy units.

VICTORY CONDITIONS

Scenario designers can set a number of specific victory conditions for battles, and mix different objectives and objective types. Each objective can have a different victory point value associated with it. The objectives of the opposing sides do not have to match. In fact, one side can have totally different goals than the other side. Also, objectives are not automatically known to both sides: a mission goal is only known to the side that has to achieve it; or only the other side; or both; or none.

The Editor chapter explains objectives in more detail. Here are the basics for the player:

For each scenario, there are three main types of objectives for each side: terrain-based objectives, unit-based objectives, and force-wide objectives.

TERRAIN BASED OBJECTIVES

The scenario designer can set any number of terrain-based objectives, i.e. areas on the map of some importance to the mission. Terrain based objectives are assigned to all available units for that side. The available objective types include:

- **Occupy**: player needs to occupy an area, clear it completely of enemy troops, and keep some forces there (until the end of the battle) to gain points
- **Destroy**: player needs to destroy an area (e.g. a building or bridge)
- **Preserve**: the opposite of Destroy; the player needs to ensure that an area (e.g. building or bridge) remains undamaged.
- **Touch**: player needs to reach the objective area to gain points, but does not have to remain in position there.
- **Exit**: Exit Zones allow all friendly units to leave the map. There are no points awarded for leaving a map. However, units that are part of an enemy Destroy/Destroy All Unit Objective (see next section) and do NOT leave the map are credited to the enemy as if they were destroyed.

UNIT BASED OBJECTIVES

There can be any number of unit-based objectives in a scenario. The objective can be tied to one single unit (such as a tank or an HQ unit) or to entire formations (such as a platoon or even a company), or to a mix of various units. Unit-based objective options include:

- **Destroy**: you must destroy the designated units. The more damage you cause to those units, the more points you earn.
- **Destroy all**: you must completely destroy the designated units in order to earn any points. Points are not awarded for damaged units.

**Note**: If the enemy has a Map Exit Objective, then you will gain points for all designated Destroy/Destroy. All units that do not leave the map before the battle is over.

- **Spot**: you earn points by spotting and identifying the designated units.

**FORCE WIDE OBJECTIVES**

These are the victory parameters for a scenario. The scenario designer assigns victory points to each objective individually. Options include:

- **Casualties** (friendly and enemy): if the player keeps his own casualties under this percentage (relative to the entire force in the scenario) or pushes the enemy above another percentage, he is awarded the respective victory points.

- **Condition** (friendly and enemy): if the player keeps his percentage of wounded, incapacitated and missing soldiers below this percentage, or pushes the enemy above another percentage, he is awarded the respective victory points.

**Note**: dead (KIA) and incapacitated soldiers are counted as "Casualties", while lightly wounded and incapacitated soldiers (eligible for buddy aid) are counted against "Condition".

- **Ammo** (friendly and enemy): if the player retains more than this percentage of ammo or pushes the enemy to expend more than another percentage, he is awarded the respective victory points.

- **Friendly bonus**: onetime bonus to the side. A quick “fix” to balance uneven battles, which can be fun at times.

The full range of Victory objectives is available for Battles and Campaigns. Quick Battles use a simplified auto-generated system, which is explained at the end of this chapter.

**VICTORY LEVELS**

The following victory levels are possible, in descending order of magnitude:

- Total Victory / Defeat
- Major Victory / Defeat
- Tactical Victory / Defeat
- Minor Victory / Defeat
- Draw

In a campaign, the magnitude of your victory or defeat can influence the course of future battles. For information on how victory is calculated, see the Mission Editor section.

**CAMPAIGNS**

A Campaign is a single player game that progresses through a series of interconnected Battles stretching over many simulated hours, days, weeks, or even months. After completing a Battle, Combat Mission selects the next Battle based on the results of the one just completed. The Battles within a Campaign are all premade, but are adjusted to reflect combat results from the previous Battle. Combat Mission campaigns are what we call “semi-dynamic”: this means there
are some predetermined elements, as well as some based on the player’s actions. Certain units have their casualties, changes in leadership, ammo usage, damage, Combat Victories and other factors carried over to the next Battle they appear in. Such units are called Core Units and constitute the bulk of the player’s available force for the Campaign. This does not mean, however, that every Core Unit appears in every battle. On the contrary, very often units seen in one battle might not appear again until several battles later. Some units may only appear a couple of times, while others appear nearly every battle. However, Core Units are always seen at least two times, unlike Auxiliary Units which are seen only once for the whole Campaign. Combat Mission makes no attempt to inform the player about which units are Core, in order to remove the temptation for players to abuse Auxiliaries (i.e. treating Auxiliary units as “disposable”).

Depending on conditions before each new Battle, Combat Mission may replace fallen soldiers, repair damaged vehicles, replenish ammo, etc. However, as with any real-life military campaign, replacement, repair, and replenishment are not guaranteed events. A wise player will keep this in mind and avoid wearing out his forces trying to achieve something that, in the larger context of the campaign, is relatively unimportant.

Combat Mission chooses which Battle comes next based on the score from the previous Battle. However, the evaluation is based on expectations about how well the player should do. Sometimes expectations are high and sometimes not. This could mean a high score for one Battle keeps the player on the optimal path to victory, while the same exact score for another Battle may mean a detour before getting back on the straight path to the Campaign’s end. Generally, however, better results lead to a more direct path to the final Battle.

Playing a Campaign

From the Main Screen, click on the Campaign button to view all available Campaigns. Once a Campaign is selected, the player receives a special Campaign Briefing. It describes the “big picture” of what is expected of the player and which forces are available to achieve the objective. After absorbing this information, the player moves onto the Mission Briefing to find out the specific details of the coming Battle. At the end of each Battle, the player views an After Action Report (AAR) that scores the player’s performance for that battle. After viewing the AAR, the Campaign Briefing will reappear, followed by the next Battle’s Mission Briefing and the whole process is repeated until the end of the Campaign.

Campaign players have an option to switch between RealTime and WeGo Modes in between battles. To do this, save the game between battles, exit to the main screen, then start up your Campaign save game normally. Before the battle starts an option is presented to switch Modes. This is useful for those people who prefer to play in RealTime for smaller battles and WeGo in larger battles.

Campaigns started using an earlier version of a Campaign can be continued with newer versions once the current battle being played has been completed. The way to do this is:

a. Save your current campaign in between battles just after you dismiss the After Action Report and exit to the main screen.

b. From the main screen select the New Campaign option and then highlight the
updated Campaign you wish to play. Hold down the SHIFT key and then click the OK button.

c. An “Import” screen will appear and you’ll see your save game in the list of files. Select it, click OK, and the Campaign will start up again normally. The game does its best to reconcile changes to such things as Core Units, but there is only so much the game can do successfully. In the event it can’t make sense of new and old it simply defaults to the new information, which may cause some of the battle history to change. Therefore, this new feature works best when the Campaign designer is making minor corrections instead of major overhauls.

After the last Battle, the player sees the Campaign AAR. Unlike previous AARs, which showed results for the just-completed Battle, the Campaign AAR details how the player performed over the entire Campaign. This signifies the end of the Campaign.

The individual campaign missions make full use of all Victory Options available for Battles.

Note: Players can create their own campaigns. Please read the “Editor” Chapter for details on how to link battles.

**QUICK BATTLES**

Quick Battles offer unlimited replayability in CMx2, and are also a quick way to “generate” a new battle. Units for both sides, and the map to be played on, are either purchased/selected or randomly chosen according to a number of parameters set by the player.

**QUICK BATTLE OPTIONS**

**ENVIRONMENTAL OPTIONS**

These options define the general setting for the Quick Battle (QB).

**Battle Type** - Meeting Engagement, Probe, Attack, Assault, or Random. This setting has an impact of what type of Quick Battle Map will be loaded: if you select Meeting Engagement, only maps defined as Meeting Engagement will be considered for loading. If you choose any of the other Battle Types, then only maps which are NOT a Meeting Engagement are considered. The Battle Type also determines how many “purchase points” the defender/attacker will receive to assemble their forces. Additionally, the attacker in an Assault type battle automatically receives a certain level of intelligence/recon information at the beginning of the battle, informing him about a certain % of known enemy positions.

**Battle Size** - ranging from Tiny to Huge. This has an impact on how many units will be available to both sides (ie. how many points are available)

**Length of Battle** - determines the length of the QB in minutes/turns (from 30 minutes to 2 hours).

**Map Selection** - can be Human or Automatic. If Human, then the player will be able to choose a map from the list of available maps after finishing all settings on this screen. If Automatic, then the map will be randomly chosen, based on the selected Battle Type and two additional options:

- **Map Size** - ranging from Tiny to Huge. Only maps of the selected size will be
considered when making the random choice of which map to load.

Environment - sets the general type of terrain to be played on. This setting has a direct impact on what type of Quick Battle Map will be loaded.

**Note:** if the Automatic map picker does not find any eligible maps for the QB based on the settings made by the player, the game will simply load the Main Menu screen again.

**Year & Month** - sets the date for the scenario.

**Daylight** - sets the time for the scenario.

**Weather** - sets the current weather for the scenario.

**Rarity** - Rarity determines the degree real life historical availability factors into unit purchases. The choices are Strict, Standard, Loose, or None. See the Purchase Forces section later in this chapter for details about the Rarity purchase system.

### Units options

These options define the units that both sides will be playing with. Units can be either purchased by the player(s) or are selected randomly, based on the parameters chosen in this screen.

**Service** - This defines the base pool of units for that side for the QB.

**Combat Force** - the composition of your task force for the quick battle can be selected here, e.g. Infantry only, Armor only, etc.. These choices are based on historical formations, but are additionally balanced for Quick Battles. See “QB Purchase Restrictions” later in this chapter for details.

Two additional choices are always available as well: Mix (which means that units of ALL branches are going to be available for the QB, without restrictions), and Random (which means that a Combat Force setting will be randomly selected).

**Unit Purchase** - can be set to Human or Automatic. If Human, then the player will be able to purchase units for this side in the next screen. If Automatic, then the computer will randomly assign units for this side based on the choices made so far.

**Note:** even if you are playing solo against the computer opponent, you can set this parameter to Human for the computer player, and will be able to pick the forces that you will be up against.

**Map Preview** - this option is available only when Unit Purchase is set to Human. The available choices are No Preview or Preview Allowed. If Preview is allowed, then the Map Preview button is active in the Unit Purchase Screen, allowing the player to explore the map in 3D view while assembling his force.

**Force Adjustment** - allows playing an unbalanced QB. If set to the default “no change”, both sides will have the default amount of purchase points available to buy their units with. The options allow you to give up to an extra 150% of units, or to deduct up to 60%.

**Note.** “default purchase points” does not mean that both sides have always the same amount of points! The amount of points per side depends on the chosen Battle Type and Size. For example, in an Attack/
Defend type situation, typically the attacker will receive more points than the defender by default. In an Assault, the attacker will receive even more (almost twice as many), while in a Meeting Engagement, the point values will be nearly identical.

After setting the parameters and determining the QB map to play on (randomly or by selecting one), the player will either be tasked with purchasing the participating forces (if the Unit Purchase was set to Human for one or both sides), or the game will proceed with the QB launch (if Unit Purchase is Automatic).

## Purchase Forces

This screen appears if Unit Purchase was set to Human for one or both forces. It will appear once for each side that is set to Human Purchase.

The Purchase screen for Quick Battles is very similar to the Purchase screen used by scenario authors in the editor (see the Editor chapter later in this manual). Here, we will describe the basic functions and the main differences between QB Purchases and Editor purchases.

The Purchase screen consists of several main areas (explained below in the order that you usually use them):

### Main Menu

The menu bar on the left of the screen is the main workhorse for the Purchase Window. Here you see three lines showing your 1) points budget, 2) how much of it you have spent already, and 3) how much is remaining. You will also find a button called “Suggestions” which allows you to have the computer player put together a suggested force for you with just one click. You do not have to accept the suggestion if you don’t want to, you can edit it or discard it, and you can have the computer make as many suggestions as you like.

The Map Preview button is active if map preview is enabled for this side, and opens a 3D preview of the battlefield when clicked.

By clicking the Cancel button, you exit the Quick Battle and return to the Quick Battle menu. By clicking the OK button, you accept any purchases and choices made in this screen and proceed to load the battle map.

### Formation Selection Tabs

Located on the left side of the screen, this is where you determine the settings on which the choices available in the Available Troops window are based on. You select the branches and formations and special units and vehicles that you want to purchase here. The available choices are preset based on the Unit Options you selected when starting the QB.

When you start purchasing your units, you MUST start with at least one Formation. This is necessary so that a proper Command&Control chain can be established for the battle. After purchasing one or more formations, you can then switch the display to Specialist Teams or Individual Vehicles if you would like to “cherry-pick” specific units that are not part of the pre-defined (historical) Table of Organization & Equipment. These units are automatically attached to the currently selected (already purchased)
CONSTRUCTION

- **EQUIPMENT QUALITY DROPDOWN MENU**
  You can set the general equipment available for the troops you purchase with one click on the dropdown menu, ranging from Typical (for that force and period), through Poor and Excellent. To finetune the selection after your purchase, read the next section “Toolbar”

- **AVAILABLE TROOPS**
  Depending on how the Formation selection tabs are set, a number of available formations, vehicles, units, support assets or fortifications is displayed in this list, including their point and rarity values (if Rarity is not set to None). A “+” behind the purchase point value indicates that the number shown is a “lowest case” for certain formations.

- **ACTIVATED TROOPS**
  This list shows the troops that you intend to purchase. You can subsequently delete and revive units in this list to finetune any selections made.

- **SELECTED FORMATION/UNIT TOOLBAR**
  Near the bottom edge of the screen, a dynamic display appears, depending on which formation is selected in the Activated Troops list. The toolbar consists of two main areas: on the left, the Soft Factors menu, and on the right the Equipment toolbar.

  - **SOFT FACTORS**
    Here you can adjust various “soft factors” for each individual unit or formation, such as Experience, Motivation, Fitness, and Leadership. For a more complete description of the soft factors, see the “Editor” chapter.

  - **EQUIPMENT TOOLBAR**
    Some formations allow you to determine the type of equipment that they are going to field for the battle, such as different tank or vehicle or gun types. For example, if you select a US Armor formation, typically you will be able to determine here which models of Sherman tanks will be appearing in the battle.

    **Note:** if you don’t want to set the choices for individual units or formations, use the Equipment Quality Dropdown to set a general quality setting for the units you purchase.

  This menu is highly context sensitive and dynamic, depending on which formation or unit you highlight in the Activate Troops list. Sometimes you can select an individual squad and several choices will appear here, sometimes you can select a Battalion HQ and select the equipment for the entire formation with a few clicks.

  In addition to different equipment, you can usually also determine here if you want indirect weapons such as guns, howitzers or mortars appear on the map, or be available as off-map support assets only.

  The choices made here may affect the point value of the formation that they apply to. This is why the points listed under Activated Troops may differ from the “typical” point values shown under Available Troops for the exact same formations.

- **QB PURCHASE RESTRICTIONS**
  The Purchase Screen for Quick Battles differs from the Editor’s in a couple of significant ways. In the Editor there are no restrictions on how many, or what types, of units can be purchased. For Quick Battles, there are restrictions on both, depending on what Options are specified. For example, when Battle Size
Option is set to “Huge”, and Combat Force set to “Infantry Only”, your force will be large and restricted to nearly pure infantry units.

Rarity
The amount of uncommon units allowed for purchasing can be restricted if desired. “Strict” keeps unit purchases almost exclusively to common units, “None” has no restrictions at all. “Standard” approximates actual availability for that particular month, “Loose” is more generous than that.

Launch the QB
Next, the player is asked to select which side they want to play, and to set the game options: which style of play they prefer (Real Time, WeGo, 1 player or 2 etc.), and which skill level (Basic Training, Veteran etc.) to choose, just as for a regular scenario.

Setup Positions
The purchased units are located in the predetermined setup areas at the beginning of the QB.

Note: Soldiers are automatically aboard their vehicles, by default, but you may unload and reload in the Setup Phase (and later) as usual.

Victory Conditions
Victory conditions for Quick Battles are much more limited than for Campaigns and Battles. Only two types of victory conditions are available:
1 - Terrain objective zones. These are always considered as OCCUPY zones.
2 - A set number of points are rewarded for causing enemy unit casualties. The more casualties caused, the more points are awarded.

The Victory Points for terrain objectives and casualties in Quick Battles are adjusted dynamically based on the battle type (Assault, Attack, Probe, Meeting Engagement). A Meeting Engagement will offer more VP for inflicting casualties, and less VP for holding ground objectives. Assaults on the other hand will award far more VP for holding ground objectives and emphasize casualties much less. Attacks and Probes are somewhere between Meeting Engagement and Assault in emphasizing casualties over ground objectives.

Saved Games
This Main Menu entry allows you to load previously saved games as well as Incoming Email files from a human opponent in Play-By-Email games. The available files shown to load are originating from the /Game Files/Saved Games and /Game Files/Incoming Email folders inside your game directory.

You can delete saved games within the Save Game menu by selecting the save that you wish to delete and left-clicking the “Delete” button. You will be prompted to confirm your decision.

Gameplay Styles
Combat Mission can be played in a number of ways. At its core, it’s a simultaneous-time ground combat simulation where one second of playing time equals
one second of real time. In other words, a 30 minute engagement will also take 30 minutes to play out. Since not everybody has time to play real-time, a number of alternative playing styles are supported.

No matter which playing style you choose for a given battle, the underlying simulation engine always runs in real-time. In other words, as far as the game is concerned, turn-based play is nothing else than a game played in 60 second increments of real-time, in between which gameplay is paused to await player input. It doesn’t have any effect on the simulation itself.

### SINGLE PLAYER

Single-player mode allows one player to fight against the Computer Opponent (often also referred to as Artificial Intelligence, or AI).

The Computer opponent consists of three main sub-elements:

- the customizable “Scenario AI” which can be “programmed” by the Scenario Designer who determines the overall strategic goals as well as possible avenues of approach and is able to “script” certain behavior;
- the hard-coded Operational AI (OpAI) that coordinates and assigns the orders to sub-units;
- and the hard-coded Tactical AI (TacAI) that controls the individual behavior of units and soldiers based on the assigned orders and the situation that develops after the shooting starts.

### REAL-TIME

The Real-time Single Player mode starts with the player entering the battlefield in the Setup Phase. Time is paused, and the player is able to get to know the battlefield, study his orders and units, and place his troops within the designated setup zones. During the setup phase, it is possible to issue orders which will be executed immediately when the battle starts.

With setup completed, the player launches the battle, starting the clock. The clock ticks in true real-time (1 second of game time equals 1 second in the real world) and only stops if the game is paused. All actions happen simultaneously. After the allotted Scenario Time expires, the battle ends, and the results screen is shown.

### TURN-BASED

The turn-based single-player mode begins again with the Setup Phase, which works just like for Real-Time play: both players are able to change the deployment of their units, and issue orders which will be executed during the first turn.

After the Setup Phase ends, the first game Turn begins. For the first turn (only), the turn begins with the Action Phase, during which the units execute the commands given to them during the Setup Phase. After the Action Phase ends, players can rewind and replay the Action (without being able to issue commands) as often as they like during the Replay Phase.

Each following Turn is divided into three phases: a Command Phase during which the player is able to issue orders to his units for the upcoming turn, an Action Phase, during which the units execute these orders, and a Replay Phase, during which the player is able to rewind and watch the action as often as he likes.

The Action Phase runs in real-time for 60 seconds and automatically ends after that time. The Player is not able to issue further orders during the Action and Replay
Phases but can move the camera freely around the battlefield.

**TWO-PLAYER**

The Computer Opponent can be quite formidable when you are just starting to play CMx2, but it is no match for an experienced human player, because, unlike a human, the AI is not capable of learning from its mistakes or adapting its gameplay to its opponent(s). Although a lot can be done by the Scenario Designer to increase the difficulty of winning against the Computer Opponent by carefully scripting the Scenario AI, sooner or later, multi-player games against other humans will provide the only real challenge.

Playing against other human players is possible using a variety of methods.

**LAN/INTERNET**

CMx2 uses a peer-to-peer connection between the two players. One player assumes the role of the host, while the other player joins as client. The host first creates a new Battle by choosing which scenario he wants to play, and from the Game Start window selects the appropriate game type: “2 Player Internet/LAN”. On the next screen, CMx2 automatically detects and lists all IP numbers associated with the host computer, as well as which port will be used for the connection. It then waits for the client player to join.

**Note:** Combat Mission uses the UDP and TCP port 7023 for all multiplayer games. If you are trying to HOST a TCP-IP game make sure and open port 7023 for both UDP and TCP traffic.

The host now has to communicate this information to the client player by email or chat. The client launches the game and chooses “Join Game” from the main game menu. Here, he enters the correct IP address and port given to him by the host. After clicking “Join”, the game will attempt to connect with the host computer and, if the connection was successful, the game will launch. From here on, gameplay resolves exactly the same as in the 1 player Real-Time game mode for each player.

**Note that CMx2 lists ALL the IP addresses assigned to a system. If you have multiple modems or network cards, it will list all IP addresses associated with those devices. What it can’t do is tell you which one is the correct IP address, because that depends on how your system is configured. If you do not know the correct IP address yourself, your opponent will have to try all of them to find the correct one. Make a note of its place in the list, because even if the IP address itself might change, the order in which the IPs are listed should not.**

If either player is behind a firewall (hacker protection) or is using a proxy system, you may need to reconfigure your system by manually opening the necessary port for incoming and outgoing transmissions. You might have to uninstall some firewalls completely (software-based) or disable them (hardware-based). Some firewalls might have to be uninstalled completely. Users with routers need to add
the TCP port to the routers forwarding table and match it to the internal IP address of the computer that hosts the game, then use the router’s control panel to get the external IP address given out by your ISP. This external IP address is what your opponent will need in order to connect to you as host.

People using Internet Connection Sharing on their home LANs cannot host Internet games. They can, however, host locally to systems that are connected on the same home LAN. They can join other hosted games normally, via Internet or LAN. This limitation on hosting affects systems that gain their access to the Internet SOLELY on ICS connection.

■ REAL-TIME MODE

Two player Real Time Mode works just like in Single Player games, with the difference being that players must mutually agree to a pause in the action.

Players can request a game pause during TCP-IP play by navigating to the Menu Options Panel and selecting one of the Request Pause options. The second player will be prompted to accept or decline the pause request. If the request is granted, the battle will be paused until both players press the Resume button, at which the action will continue.

Three types of pauses are available. A Playable Pause allows players to move their camera around the battlefield, select units, and give commands. A Viewable Pause allows players to move their camera across the battlefield, but they cannot issue commands to their units until the pause is lifted. A Locked Pause prevents players from moving their camera or interacting with units at all until the pause is lifted.

■ TURN-BASED MODE

Turn-Based Mode works the same in Two Player as it does in One Player, with two important exceptions: First, there is no Replay Mode or time controls available available. Second, once finished with the Command Phase, the player must click the “Continue” box in the upper right corner of the screen to continue onto Action Phase. Action Phase will not begin until both players have selected “Continue”.

Note: Only the Host can save a LAN/Internet game. The player that loads the save will also become the Host.

■ HOTSEAT

Hotseat play is very similar to Turn-Based Single Player games. Each player plots his commands and actions as he would in a Single-Player game and, once done, exchanges the seat in front of the computer with his opponent (hence the term “hotseat”), who now does the same. This is repeated for each turn.

■ EMAIL

Play by Email works exactly like Single-Player Turn-based play, except that once a player completes their commands and actions, a special save game file is generated. The player emails this file to their opponent who loads it on their end, executes their commands, watches the results of the previous turn, then saves a file and returns it to the first player.

Here is a more detailed explanation of the process:

1. You pick a Game and are prompted to create a password. This creates Game file 01 which is stored as an Outgoing file. You will find this file in (Title Name)/Games File/Outgoing Email. You send this to your partner.

2. Your Partner gets the 01 file and saves it in his Incoming Email Folder.
3. He starts the game and finds file 01 in the Saved Game portion of the Opening menu.

4. Partner puts in password and a new file 02 will be generated to be sent to you. By saving and swapping these files via email, the players advance the game from turn to turn at a pace that the players can adjust to their liking. The gameplay itself, i.e., the Action Phase, still takes place in real-time - just like in Turn-Based Single Player mode.

**Note:** If the PBEM files are too large for email transfer, you can use a number of free services on the internet allowing you to upload and swap large files online.

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**SKILL LEVELS**

When you launch a new battle, you can set the skill level, which adjusts the overall difficulty of the game. Unlike other games, the skill level does not simply give an artificial bonus to the computer opponent, but instead has an influence on core game mechanics. The following section describes the differences between the different levels. Only the differences from the previous lower level are described.

### BASIC TRAINING

This is the easiest setting. The following special rules apply:

- Friendly units are always spotted
- Spotting information is instantly shared among teams (aka “Borg Spotting”)
- Troops suffer slightly fewer casualties and are less likely to panic
- Treatment of wounded soldiers (“buddy aid”) is extremely fast
- Artillery and air support arrives extremely fast
- Enemy units, once spotted, are always fully identified
- The life/death status of enemy vehicles is displayed immediately
- Enemy weapons and suppression are displayed
- You can hear the voices of unspotted enemies
- Supplies from Ammo Dumps are automatically distributed among troops.

### VETERAN

Most people familiar with the Combat Mission game system will prefer this setting. It is a fair balance between realism and fun that does not burden the player with unnecessary details or long waiting times. The following special rules apply:

- Friendly units are always spotted
- Enemies, once spotted, are not always immediately identified and can appear as generic “Enemy contacts” (but less often than at Elite level)
- Spotting information is distributed among teams using the standard Command & Control rules (See Command & Control chapter)
- Treatment of wounded soldiers is faster than in real life
- Artillery and air support arrives faster than in real life
- The life/death status of enemy vehicles is hidden until the crew bails out or the vehicle starts to burn
- Enemy weapons and suppression are not displayed
- You cannot hear unsotted enemies
- Supplies from Ammo Dumps are automatically distributed among troops.

■ WARRIOR

Warrior is similar to the Veteran setting but introduces more realistic time delays for a number of tasks and events. Hardcore players will favor this setting. The following special rules apply:

- Enemies appear as generic “Enemy contacts” until they are positively identified by your forces on the battlefield
- Treating wounded soldiers takes a realistic amount of time
- Artillery and air support take a realistic amount of time to arrive
- Supplies from Ammo Dumps are automatically distributed among troops.

■ ELITE

Elite is identical to Warrior with only one difference:

- Enemy infantry icons are always the plain “soldier” type, regardless of their armament or function

■ IRON

Iron is an optional setting that goes even one step further than Elite, and introduces special restrictions on what the player can do and when. While even more realistic than the other settings, this option introduces a number of interface limitations which might put off the casual player, so it is strictly an optional choice.

- Friendly units need to be spotted just like enemy units. If you have a friendly unit not in line of sight or in contact with another friendly unit, then the only way to find this unit is by either re-establishing contact with another friendly unit or by clicking through the chain of command in the game interface, jumping from unit to unit.

■ SCENARIO AUTHOR TEST

“Scenario Author Test” may be selected as a Skill Mode in 1-player games only. It is intended to be used by Scenario Authors only when testing their creations, and is not intended for “live” play. This setting will cause all enemy units to be fully displayed to the player, but not additionally “known” to player’s troops. Computer controlled units show their movement paths when selected.

Note: in Scenario Author Test mode, using the +/- keys to “jump to the next unit” also works with enemy units.
BASIC SCREEN LAYOUT

The main screen layout breaks down as follows:

1. **Top Navigation/Info Bar** - the info bar at the top of the screen provides information about friendly and enemy units located within the viewing area, even if the units are hidden or obscured by an obstacle. Clicking on one of the triangle-shaped icons instantly switches the player to that unit.

2. **Game Area** - this is the central display area where all the action takes place. Using mouse and keyboard controls, the player can move the camera around the map, as well as access units and info by clicking on them directly and/or on their floating information icons (if enabled).

3. **Game User Interface (GUI)** - the main interface bar at the bottom of the screen presents the player with all the information and controls necessary to interact with units.

Note: This screen layout is used for all instances where the player interacts with the 3D game world. 2D game elements such as menu screens and the editor use a different GUI layout.

**GAME USER INTERFACE (GUI)**

As soon as you enter the 3D game world of CMx2, the GUI appears at the bottom of the screen. It always consists of the same three main parts, even though some may be empty or unavailable at times.

1. Unit Info Panel
2. Team Info Panel
3. Command Panel
**UNIT INFO PANEL**

The Unit Info Panel displays the most important information for the currently selected unit. It breaks down as follows:

1. **Unit name** - standard or customized unit description
2. **Unit type** - describes the type of unit, such as “Rifle Squad”
3. **Portrait** - a picture that represents the current unit type
4. **Unit attributes** - the central characteristics affecting the unit’s ability to perform:
   a) leader name (leadership modifier)
   b) experience level (no modifier)
   c) physical condition (physical fitness modifier)
   d) morale (motivational modifier)

Modifiers determine, for better or worse, how the unit behaves during the game. Each modifier can have a positive or negative value, as follows:

+2 - excellent
+1 - good
+0 - average
-1 - below average
-2 - poor

5. **Rank** - the rank insignia of the highest-ranking leader of the unit.
6. **Branch of Service** - shows which Branch of Service the unit belongs to.

7. **Chain of Command** - displays the parent formations of the selected unit. A green icon indicates that the HQ unit/formation is currently in contact with the next lower HQ unit/formation, while a red icon indicates lack of contact. In the previous example, if the icon beside the “A Company” entry is red, then the 1st Plt is out of contact with A Company HQ, while - if the icon next to “A Company” is green - then 1st Plt is in contact with A Company HQ.

8. **Ammo panel** - the ammo panel displays the available and remaining types, calibers and amounts of ammunition that the unit has at its disposal. Each bullet/round is listed here for each specific caliber/type.

9. **C2 Link** - the Command and Control (C2) link shows the current established means of communication for the selected unit with its next higher HQ in the chain of command. The left most position shows if there is a visual connection, the middle position shows if there is either voice or radio contact. The right most position is reserved for advanced communications present only in modern-day CMx2 titles. See chapter Command & Control later in the manual for more details.

10. **Suppression Indicator** - an inverted color-coded pyramid indicates the amount
of suppression the selected unit is enduring at any given time. It also gives the player a rough measurement of the total volume of incoming enemy fire. As the color moves from green to yellow to orange to red, the amount of suppression increases, and the unit will be more likely to go to ground, panic, or break. When units are pinned (i.e. they can shoot but do not respond to movement orders), or panicked, routed or broken, that status is shown in the suppression indicator display as well. A small dot to the right of the suppression indicator will light up if the unit is Brittle.

11. **Artillery and Air Support buttons** - allows access to the Artillery and Air Support screen (if such support is available and if the currently selected unit is allowed to request support).

12. **Special Equipment** - this area consists of 6 slots which display various types of special equipment that a squad, team, or vehicle might be equipped with (e.g. demo charges, binoculars, etc.).

Note: keep an eye out for knocked-out burning vehicles that contain extra ammo and other special equipment. CMx2 simulates “cook-offs”, i.e. exploding ammo inside a burning vehicle. After each explosion, ammo is crossed off the list, but remaining ammo may still explode later on. You should keep your infantry away from burning vehicles or they could suffer injuries.

![Image of Special Equipment]

**TEAM INFO PANEL**

The Team Info Panel shows all Soldiers assigned to the unit. Depending on the type of unit and the nationality, the Team Info is further subdivided into Teams. Squads show three columns representing up to three Fire Teams, designated A, B and C. The actual composition is determined by the nation’s specific TO&E.

![Image of Team Info Panel]

Each Soldier is represented by his Weapon, his Wounds, and his Specialty. Behind
the scenes, the rank, individual ammo count, type of body armor (if any), number and type of grenades, Special Equipment, and spare ammo are also tracked for each Soldier.

The Unit Info Panel displays cumulative ammo counts and any Special Equipment. The total weight of everything a Soldier carries is also tracked and has an impact on fatigue from movement. In order to prevent unnecessary information overload, these details are not available to the player.

The large variety of Weapons available to soldiers are accurately portrayed according to their real world characteristics, such as ammo type, rate of fire, reloading procedures, chance of jamming, inherent accuracy, weight, etc. On the 3D battlefield you can see the weapons as they are being used. The Encyclopedia chapters in the game-specific manuals detail each Weapon and its capabilities.

The color of the Weapon icon in the panel denotes the general health of the Soldier. Green means the Soldier is in good shape, though perhaps a little banged up. Yellow means that the soldier has sustained a significant wound that is likely to impair his ability to fight. Incapacitated Soldiers have a red “Casualty” text above their Weapon icon. These Soldiers are so seriously wounded that they are no longer able to fight, move, or perform other actions. The Soldier’s base within the Game Area also shows Green, Yellow, Red (incapacitated) and Brown (dead) to reflect his Wound status. If you point the cursor at a weapon, the name of the weapon is displayed and that soldier’s base is subtly highlighted in the main 3D display.

Incapacitated soldiers (red soldier base) can be given first-aid by their comrades, which is called “Buddy Aid”. There is no Command for this action, rather it happens automatically when a friendly soldier (regardless if he is from the same squad or not) is moved close to the location of an incapacitated comrade. Depending on the situation (incoming fire etc.) the soldier may decide to treat the wounded man. The word “medic” is displayed in the status field. The player can abort the treatment at any time by giving the parent unit that the medic belongs to any kind of Command. The medic may decide to abort the treatment himself as well if there is significant incoming fire.

Once treatment for a incapacitated soldier is complete, the wounded soldier will disappear from the Game Area.

Note: Incapacitated (red base) soldiers who have not received “buddy aid” (i.e. disappeared) by the end of the game have a 25% chance of becoming KIA in the final tally.

Dead soldiers (brown soldier base) can also receive “Buddy Aid” (by moving a friendly soldier close to the location), but all it does is reclaim their ammo and weapons, if possible. “Aid” to dead soldiers is pretty quick.

Many Soldiers have a special ability due to training and/or weapon assignment. These Specialties are represented by a short line of text over the Soldier’s weapon icon, such as “Commander”, “Gunner”, “Driver”, etc. Soldiers can perform tasks they aren’t specialized, just not as well as those who do. For example, some soldiers have been trained to drive a vehicle, command a Team, use AT weapons, etc. If a soldier without a specific Specialty tries to perform the same task, he is
Generally worse at doing it.

**DETAILS PANEL**

All units that are not Squads are simply referred to as Teams and have up to seven Soldiers in the Team A column. In place of columns B and C is the Details Panel, which is where special information about the Team is shown. There are three different types of Details Panels based on Team type: Vehicle, HQ, and Heavy Weapon.

The layout for each Detail Panel is essentially the same with Profile, Stats, and Reports sub sections. The Profile shows a silhouette unique to that unit, the Stats give some indication as to what the unit is capable of, and Reports give details relevant to the Team’s specialized purpose. Reports are “tabbed” and can be accessed one at a time. CMx2 remembers which Report was last in view so the next time you select a unit of that type, the same Report shows up by default. The following sections briefly describe the unique features shown for each unit type.

**DETAIL PANEL COMPONENTS**

The Details Panel is divided up into three conceptual pieces: Profile, Statistics, and Reports. The information for each varies a little depending on if the unit is a Vehicle, HQ, or Heavy Weapon (HW).

**PROFILE**

**Designation and Purpose** - lower portion. Several pieces of information are displayed here, depending on the type of unit selected. Generally speaking, this section gives you information such as military designation (e.g. M4A1, MG34, etc.), caliber of main weapon, minimum/maximum range, and/or a description of the unit’s purpose (e.g. Headquarters, Medium Tank, etc.). For headquarters the formation name is also displayed.

**HQ Button** - when a Vehicle or HW is also a HQ, a button appears which toggles the HQ Reports on or off instead of the unit’s Vehicle or HQ Reports.

**Silhouette** - an illustration of what the unit looks like. For heavy weapons, text is superimposed over the Silhouette depending on the type of weapon and its state of readiness. “Semi-Deployed” means the weapon can be used, but not optimally. “Not-Deployed” means the weapon can not be fired until Deployed. “Limbered” tells you the weapon is in its towed, non-firing position. When no text is present the weapon is fully deployed and ready to fire.

**Crew Positions** - a grey dot for each designated crew position, a blue dot for each occupied position, a yellow dot for lightly wounded crew members, and a red dot for incapacitated.
**Passenger Positions** - works the same as Crew Positions, but uses a green dot instead of blue to represent an occupied position.

**Vehicle Name** - The common name of the vehicle, if any (e.g. Sherman, Tiger etc.). Not applicable to HQs and HWs.

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**Stats**

**Vehicles** - Weight, Speed, Power-to-weight ratio, Offroad and Turning ability

**Heavy Weapons** - Caliber, Setup and Pack Up Times, Speed, Minimum and/or Maximum ranges

**HQs** - Personnel, Experience, Condition, Morale, Suppression

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**Reports**

**Ammo Report** - available for Vehicles, HQs, and HWs. Displays the amount of ammo of each type assigned to that unit.

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**Defenses Report** - available for Vehicles only. Shows the vehicle’s ability to defend against...

1. Hollow charge rockets (e.g. Bazooka, Panzerschreck, Panzerfaust)
2. Large caliber anti-tank rounds (e.g. 88mm)
3. Medium caliber anti-tank rounds (e.g. 50mm)
4. Small arms (e.g. Machineguns)

...against the

- Front ..........>
- Sides ..........><
- Rear ............<
- and Top. .......v

The amount of threat posed by the various munitions is shown graphically as Bad (small red x) ★, Poor (o) ○, Average (yellow o ) □, Good (light green square) □, and Excellent (thick green square) ◆.
**Damage Report** - available for Vehicles only. Shows how well each system of the vehicle is functioning. The icons used are coded in the same way as the armor icons in the Defense Report (previous page). Additionally, vehicle systems that are destroyed are displayed not just with the red “x”, but also by the system name appearing as bright red text.

**Note:** The game tracks and applies limitations to what a vehicle can or can’t do *precisely* as shown here, so keep an eye on the damage report during combat! If the engine is destroyed then your vehicle won’t be able to move. If its engine or running gear are damaged it may be able to move but only slowly, and even more so across difficult terrain or up steep slopes. If the radio is destroyed or damaged, it may lose connection to higher up, resulting in loss of Command & Control, and so forth.

**Note:** Vehicle weapons that are reloading may temporarily appear as grey.

**Unit Report** - available for HQs only. Shows up to nine units directly attached to the HQ and their status (ranging from fully operational to depleted to eliminated). Clicking on an entry jumps to that unit.

**Formation Report** - Identical to Unit Report, but showing up to nine Formations attached to the HQ (if any).

## Command Panel

The Command Panel is a highly interactive area that allows the player to issue Commands to units, to select from various Menu options, and to control the speed of the game. The various component pieces are broken up logically so they can be accessed quickly. The components are numbered according to this picture of the Command Panel:

1. **Instant Commands** - allow one click change in unit behavior. The left button tells the unit to HALT and retain its Commands. Clicking on the button again tells the unit to RESUME. The middle button instructs the unit to CANCEL all its Commands and to do nothing for the moment. The right button tells the unit to EVADE by abandoning its current Commands, seeking immediate cover and perhaps popping smoke. Although units can Evade on their own initiative, sometimes they try too hard to stick to their Commands and need to be redirected without further delay. Instant Commands work in both Real-Time and We-Go styles of play.

2. **Command Modes** - determines which type of Commands are being used;
Movement, Combat, Special and Administrative. When selected, the name of the Command Mode is displayed along the bottom and the appropriate Command Buttons are shown in the Button Screen.

3. **Button Interface** - shows either Command or Menu Buttons, depending on which is currently selected. Command Buttons display their assigned hotkey and are color-coded to match the Command Lines shown in the Game Area. See section [Commands] for more details about Commands.

4. **Menu Mode** - by clicking on the Button “Menu”, the Screen displays various special Options the player can use. These Options are detailed below. Clicking again on the “Menu” button quits the Menu Mode.

5. **Playback Interface** - used mainly for We-Go style play, this interface allows you to replay, rewind and fast forward through each game turn and phase. The large red button in the middle is used to End Turn or End Phase in turn-based mode, or to Pause the game (same as pressing the ESC key) in Real-time mode. The elapsed game time is shown at the bottom.

### MENU OPTIONS

The Menu Options Panel contains a total of seven buttons, explained below. The Panel is accessed by clicking on the “Menu” button. Clicking again exits Menu Mode and resumes regular Command Mode for the Panel.

1. **Save** - opens the Save Game screen, allowing you to save a game in progress. The saved game can be found under (Game Title)/Game Files/Saved Games, and can be loaded from the “Saved Games” entry in the Main menu visible upon game launch.

2. **Conditions** - opens a pop-up window listing the environmental conditions for the current battle, including:
   - Weather (e.g. Clear, Overcast, Rain...)
   - Temperature
   - Ground Conditions (e.g. Dry, Wet...)
   - Wind Strength and Direction

3. **Briefing** - opens the Briefings Panel with the current Mission Briefings.
4. **Hotkeys** - opens the Hotkeys Panel listing all important in-game hotkeys

5. **Cease fire** - toggles the call for a Cease Fire on and off. If the opponent selects this option as well, the game ends with a mutually agreed to Cease Fire

6. **Surrender** - immediately surrenders the battle to the opponent

7. **Quit** - aborts the current mission immediately, without calculating results

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**COMMAND INTERFACE**

Units are controlled by issuing Commands. The Command Panel is the primary method for viewing and issuing Commands. All Commands are grouped into one of four conceptually similar Command Modes:

**Movement:** Commands to get units from waypoint A to B  
**Combat:** Commands to engage enemy targets  
**Special:** various special Commands that complement Movement and Combat Commands  
**Administrative:** Commands that affect a unit’s basic organization

There are several ways to issue a Command during the game, so you can choose whichever suits your style of playing best.

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**KEYBOARD**

You can use the keyboard to issue Commands via Hotkeys. You can customize the hotkeys to your liking and either use a hotkey for each individual command (Direct access) which eliminates the need to bring up the required Command Panel first, or use the Default Keys (Relative access). You can access Command Panels directly with the F5-F8 function keys.

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**MOUSE**

You can use your mouse to operate the Command Panel in the Game Interface directly. Simply click on the corresponding buttons to switch Panels and issue Commands.

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**ON-SCREEN MENU**

A selectable Command Menu popup in the 3D area is also available. The onscreen list of available commands can be viewed by selecting a unit and pressing the SPACE BAR. A list of the four Command Modes (Movement, Combat, Administrative, Special) appears. Move the mouse over the desired Mode and a list of commands related to that Command Mode will pop out. Simply click on the desired Command and then follow normal procedures for that Command (e.g. clicking a Waypoint or selecting an enemy unit to Target). The menu can be dismissed with another press of the space bar or by clicking the mouse anywhere outside the menu.

Some Commands are “modal”, such as Deploy Weapon for Heavy Weapons. These Commands remain lit up to show that the unit is already performing that particular Command. Issuing the Command again has the effect of telling the unit to cease that action.

Units whose Morale State is Panic, Broken, or Routed are not capable of receiving any Commands. Units that are heavily Suppressed (“Pinned”) may accept Commands but may not necessarily act upon them right away.
PLAYBACK INTERFACE

For Turn-based We-Go play, this interface is used to playback each turn’s action. For other play styles, such as Real Time, this panel is only used to conclude the Setup Phase at the beginning of each battle and launch the battle. The controls resemble those of a regular VCR or CD player, and include:

- play/pause (toggle)
- skip to end
- rewind
- fast forward

The large red button in the middle of the Playback Interface is used to advance from one phase to the next, i.e. ending the Setup Phase and starting the game in Real Time mode, or ending the Playback phase and starting the Command Phase of the next turn. In Real Time mode, pressing the button has the same function as the ESC key, and pauses the game. Below this button is the elapsed game time expressed in minutes.

SPOTTING

One of the center pieces of the new CMx2 game engine is the concept of “relative spotting”, where a number of game elements - from command & control, to skill levels, to individual unit abilities - all come together. A typical battlefield is full of chaos by its very nature: combatants worldwide call this chaos the “Fog of War”, where no two soldiers “see” the same thing. To simulate this, CMx2 employs complex calculations and a unique spotting concept which only shows the player what his currently selected unit can see.

Spotting is computed for each unit individually, and is not only based on actual lines of sight, but includes many other factors such as: what the spotter and target are doing (facing does matter!), the equipment they have available (scopes, binoculars etc.), skill levels, visibility based on climatic effects and the time of day, even sounds (units can “hear” nearby enemies!) and so forth.

Enemy units that are not seen by any of your troops are not shown on the map. This includes muzzle flame, smoke, dust, and other effects directly attached to enemy unit behavior - these are also not shown unless the unit itself is already spotted by at least one friendly soldier.

But even when an enemy is spotted by one of your units, that information does not pass immediately to other friendly units; instead, it is transmitted using the usual Command & Control channels, and is subject to the same restrictions.

Note: Relative Spotting is turned off for Basic Training Skill level.

Example: One squad might see an enemy unit that a friendly squad, close to the first, does not see. It only takes a few seconds before the first squad is alerted about the enemy presence by visual signals (e.g. hand signals), but it takes much longer to pass this information to other units in the Chain of Command. Units out of contact might not receive this information until they are in contact again.

FLOATING ICONS

In addition to being handy ways to keep track of and select units, the Floating Icons
also convey important spotting and unit status information. Unless disabled by its hotkey the icons appear over the center mass of the units they represent.

Unknown or previously spotted but now out of sight units, as well as pure sound contacts, are shown with a generic silhouette and a question mark. In these cases, the general identity of the contact (soldiers, tank, etc) has been determined but not its exact location or nature. Over time the unit may be further identified and will display a specific floating icon.

Each icon can be in one of four states: normal, dimmed, highlighted, and transparent. Transparent icons are only used for units whose morale is so low that the player has lost control.

Note: Floating icons for friendly units briefly blink after sustaining a casualty.

With no unit selected, all icons are in their regular state. This shows the player the combined information from all his units as passed up the Chain of Command.

Note: Icons for units that are not capable of receiving commands (e.g. panicked, destroyed) are faded, by default.

When a friendly unit is clicked on the following icon changes occur:
- the selected unit’s icon background blinks between normal and highlighted
- all friendly units within the same immediate formation (usually a platoon) remain in their normal icon state
- friendly units in other formations are dimmed
- whatever enemy units can be directly seen by the selected unit are shown the others are hidden

Note: Double clicking yields the same behavior except that units within the same formation have their icons highlighted.

When an enemy unit is clicked on the following happens:
- the selected unit’s icon background blinks between normal and highlighted
- friendly units within LOS of the enemy unit remain in their normal icon state
- all other friendly unit icons are dimmed

Some of the most immediate effects of this system are that units with dimmed icons cannot be directly targeted by the selected unit. The unit TacAI will continue to behave as if no enemy unit was present. It will, for example, continue walking down a road into a possible ambush, unaware of the threat.

The icons displayed are nation-specific and unit-type specific. Normally in World War 2 titles, Axis forces are displayed by rectangular grey colored icons, while Allied forces use round olive drab colored icons. In modern war titles, NATO-type forces use a round blue colored icon, and opposing forces use a diamond red colored icon. The unit representations show the main type, such as tank, infantry, vehicle, etc., using the silhouette of the most common unit for that nation.

Note: at Skill Levels Elite and Iron, enemy infantry icons are always the plain “soldier” type, regardless of their armament or function.
At high skill levels, enemy units whose location has been confirmed but not their exact nature will display Unidentified Floating Icons. These will present a generic silhouette with a question mark. In these cases the specific location of the enemy unit has been determined, but not its exact identity. For example, an infantry Unidentified Floating Icon could be a squad, a bazooka team, or a battalion HQ. Since the exact location has been determined, Unidentified Floating Icons can be selected and targetted with Combat orders. Over time the unit may be further identified and will display a specific unit icon.

If play is Axis on Axis or Allied on Allied (or Red versus Red and Blue versus Blue), the colors and shapes remain the same but the black unit representations on the icons change because they are specific to one nation’s equipment.

Most actions which are possible for the player to do by clicking on a unit are also possible when clicking on the unit’s icon instead. This is often easier since the unit icons are “stacked” automatically for easier access. For example, when embarking a vehicle you can click on the vehicle or on its icon.

**COMMANDS**

At the very core of the CMx2 tactical game lies its system of Commands. Commands are the primary form of interaction between the player and his virtual soldiers on the battlefield. CMx2 uses a structured Commands system which emulates most of the typical orders a squad of soldiers would give or receive on a real battlefield.

Similar Commands are categorized into specific Command Groups. The four main Command Groups are:

- **Move Commands** - move units from A to B using various methods
- **Combat Commands** - instructs the unit to use its weapons in some controlled fashion
- **Special Commands** - specific instructions that are nestled in between Move Commands
- **Admin Commands** - similar to Specials, except specific to unit organization

This structure is more than just for ease of reference. Each unit is able to combine one command from each group and perform it simultaneously. For example, a unit can conduct a Move and Combat Command at the same time, while another might perform a Move and Special command. Not all commands can be combined like this, but many can. Some commands, especially certain Special and Admin Commands, might require full focus by the unit until completed.

Which commands are available to which unit, and at which time, is highly dynamic. Suppression, fitness, unit cohesion, location, the unit’s equipment, and the time of the battle can all have an effect on what types of commands are available at which time. Some commands might be grayed out, indicating that they’re temporarily unavailable, while others might not appear at all because they’re only available to a specific type of unit, or only if a specific type of equipment is carried.

Just as in real life, your virtual soldiers are not robots and therefore will not mindlessly execute each and every order from you. There are many situations - usually under
heavy enemy fire - in which soldiers may simply refuse to execute a Command you have given them, or may replace it with what they consider more suitable. For example, you may give a unit a Fast Move Command only to see it changed instantly to a Slow Move Command because the soldiers feel hugging the ground is the better way to stay alive. Units with or without orders will also usually initiate evasive action on their own in the face of extreme danger - for infantry this may include crawling to cover, for vehicles it could mean popping smoke, rotating to face the threat and retreating away from threats. This can happen if you ordered it or not, if you want it or not, as the unit is simply concerned about its own survival at that moment. Keep this in mind when you see that your Commands are not exactly working out as you think they should...

The following is a list of ALL available commands. Certain restrictions are mentioned, but not ALL possible combinations are listed.

In addition to the above, a special category, “Instant Commands”, is available. Instant commands do not appear in the usual Commands Panel, but have their own buttons at the left top of the Commands Panel interface. These Instant Commands are “emergency” commands, allowing a player to quickly instruct a unit to PAUSE, CANCEL ALL, and EVADE. Obviously, this is mainly useful for Real-Time play. Instant Commands are explained in more detail in the next chapter.

Lastly, there are certain actions that the units conduct themselves without the need to explicitly give them a Command, such as providing first aid for wounded or sharing ammo. These action are listed and explained at the very end of this section.

**Move Commands**

Move Commands include orders that usually have to do with getting a unit from point A to point B in a certain fashion. Movement commands are generally issued by selecting the desired type of movement and then clicking on the map with the mouse, thus placing a waypoint. A Command Line extends from the unit’s current position to the waypoint.

Additionally, when an infantry unit is moving and the waypoint is placed over ground terrain (i.e. not a building or vehicle), the actual destination for each one of the teams that make up the moving unit is highlighted in yellow. Teams B and C (if any) also have their adjacent destinations highlighted when plotting moves and when giving facing orders attached to a final waypoint. Note that the final facing is important for positioning “wing man” teams, so you should attach facing orders to final waypoints as needed.

**Note:** if you need even more granular control over each of your teams, feel free to split them and issue individual movement commands.

Infantry soldiers/units automatically try to position themselves “smartly” around and along buildings, walls, ridgelines and other terrain which provides cover and concealment. When targets present themselves soldiers will try to gain line of fire by repositioning themselves. However, as in real life soldiers are reluctant to reposition themselves in exposed positions when they are currently in good cover.

Units do not always follow the exact Command Line drawn on the map, but will choose their movement path independently based on the terrain between the start and end points, including finding their way around impassable obstacles.
The chosen route depends on the type of movement command issued, as well as if the unit is being fired on or not. Keep in mind that the longer the distance between the start and ending points, the more the route the unit chooses might deviate from what you had in mind when you gave the order to move out.

You can issue several Move Commands (from the same type, e.g. Move + Move; or different types, e.g. Move + Fast) one after the other, generating a string of waypoints that the unit will pass through one by one. There is no limit as to how many waypoints you can place, though more than a handful is hardly practical.

Move Command waypoints can be adjusted by left-clicking and dragging the waypoint with the mouse. However, any Target commands associated with that waypoint will be deleted and will have to be re-given.

Infantry units will usually halt at each waypoint for a few seconds and regroup, attempt to maintain formation etc. Vehicles will simply pass through waypoints if it is a string of the same movement types and if they can do so without having to slow down for a hard turn.

Note: new players tend to make a number of common mistakes when ordering around vehicles. Here are a couple of tips (all are obvious when you think about how people drive vehicles in the real world):

- when maneuvering in difficult terrain with many obstacles (such as densely packed urban areas with narrow streets etc.), use Slow movements

- when setting waypoints for your vehicles, avoid sharp turns. If your movement command creates a 90 degree turn, the vehicle has to slow down or even stop in order to make the turn. By setting 2 or 3 waypoints instead at less steep angles, the vehicle will be able to move much quicker.

- if moving in a convoy, make sure to space out the intervals between vehicles sufficiently, and increase the distances the faster you want them to go! Have you ever tried driving at 50 mph with only a couple of meters of distance to the car in front of you? Not recommended!

- pay attention to impassable terrain between the starting point and destination when plotting movement commands. Vehicles will attempt to complete your orders and if faced with impassable terrain, may take a drastic deviation from the course you had intended for them. If you move through difficult terrain, use Slow Movements and set several waypoints closer together. Plotting one waypoint across half the map is inviting disaster.
When you issue a Move Command with the cursor placed over a vehicle capable of transporting soldiers (or over its icon), the unit that is given the Move Command will automatically embark onto the transport vehicle, either as passengers or, in some cases, as crew.

When you issue a Movement type order with a waypoint placed inside a building, a pop up menu will allow you to select the floor level that you would like the unit to occupy as its final destination. You can select Level 1 if you want the unit to simply enter the building, and then select Level 2 for the next waypoint later on to instruct it to move up, or you could immediately select Level 2 and have the unit pass through the ground level immediately to the second in one motion.

While moving, soldiers will sometimes stop and take a quick shot at nearby/exposed enemy troops, then resume moving. This depends on the Movement Command issued, and is more likely for enemies in front of the unit, and less to the sides and rear.

Moving troops that come under heavy fire usually try to move FASTer, except when they are so tired that they could only use walking speed (i.e. not even QUICK). In that case they will switch to SLOW (i.e. crawling), and sometimes they cancel their move altogether to seek nearby cover.

- **GROUND CONDITIONS, BOGGING AND IMMOBILIZATION**

When issuing Movement commands, keep in mind the ground condition that you want to order a unit to move over. All vehicles are rated for Offroad performance. To some degree better quality crews lessen the chance of bogging. However, if you order a non-tracked personnel carrier to move across a muddy field the best crew in the world won’t likely help you out much.

Keep in mind that Ground Conditions can change during the course of a battle. E.g. during a Downpour, ground conditions may change from Wet to Muddy during the battle.

Some vehicles are able to drive over obstacles, such as low walls or fences. However, this usually greatly increases the risk of immobilization and will progressively damage the vehicle’s tracks or tires.

Bogged vehicles display a “Bogged” marker in their unit panel, and are not able to move. Bogged units attempt to un-bog themselves automatically. This may fail, however, and lead to a permanent immobilization.

Ground conditions (as well as the terrain itself) do play a role for infantry units, too, affecting the soldiers’ speeds and rate of exhaustion.

- **MOVE**

*Infantry* - This is the standard “move from A to B” command usually used in situations where enemy contact is not expected or is unlikely. It is fairly slow, but it maintains unit cohesion, pretty good all-round awareness (but no anticipation of imminent contact), and is not tiring to infantry. Usually units that come under fire while executing a Move Command stop or change their movement order and take evasive action, and there is a high chance that they will return fire and look for cover.

*Vehicles* - this command means slow speed and usually instructs the crew to unbutton to maintain good all-round observation.

*Restrictions* - Move is not available when a vehicle has been knocked out or im-
mobilized (usually by a track, wheel or engine hit, but also if the crew has been incapacitated). For infantry, move might not be available temporarily due to wounded and incapacitated soldiers as well as excessive fatigue (in which case you have to let the soldiers rest a little)

Example - use Move to change floors in a friendly occupied and previously cleared building when speed is not important. Use Move to drive down a road not expecting enemy contact.

Quick

Infantry - soldiers move at a jog. This movement type slightly emphasizes speed over cover, cohesion and awareness, but is not a full-out run. It may lead to some bunching up, as it’s more difficult for soldiers to remain in formation. More tiring than Move but still sustainable for longer periods, at least for fit soldiers.

Vehicles - this command means medium speed, and emphasizes arriving at the waypoint quickly over returning fire.

Restrictions - same as for Move, but fitness and fatigue play a bigger role. Additionally, vehicle with soldiers riding on top of them (such as tank riders) cannot move at Quick speed. Vehicles given a Quick order will instead move at a slower speed.

Example - this command is best used to shift positions quickly when speed is important but when the area to move through is covered and not under immediate enemy view and fire

Fast

Infantry - Fast Movement maximizes speed to get from one place to another at the cost of fatigue, and also decreases awareness and spotting ability, especially to the sides and rear (relative to the unit’s movement direction). Fast makes the unit less likely to return fire or to stop or change its movement direction and objective. Keep in mind that this means that a soldier running FAST will NOT stop to reload, either.

Vehicles - Fast means movement near the maximum speed possible for the terrain, and a decreased awareness of what is happening around the vehicle.

Restrictions - Fast has the same availability restrictions as Move (immobilization, fatigue, etc.), and, additionally, might be unavailable when certain components of a vehicle are damaged (even if not fully destroyed), or for infantry units, when combat/equipment loads are excessive. Additionally, vehicle with soldiers riding on top of them (such as tank riders) cannot move at Fast speed. Vehicles given a Fast order will instead move at a slower speed.

Example - use Fast to have a squad sprint across an open road from one building to another, making sure that they do not slow down to return fire. Use Fast to cross a stretch of open ground with a vehicle in order to reduce the time of exposure to enemy tanks.

Slow

Infantry - Slow is the equivalent of a Crawl command. Soldiers move forward in the prone position, maximizing cover and concealment at the cost of speed and fatigue. Crawling is extremely slow and very tiring and should only be used to move short distances. Crawling soldiers are generally hard for the enemy to spot (depending on terrain). Crawling soldiers tend to pause and return fire at nearby/exposed enemy troops often, then resume moving. After reaching the destination,
soldiers who move SLOW (i.e. crawl) will tend to keep their heads down for a little while even if there is no incoming fire and no enemies are spotted.

**Vehicles** - instructs the vehicle to move slowly, at walking speed. Useful when coordinating vehicle movements with infantry.

**Restrictions** - same as for all Movement commands.

**Example** - crawling up the last meters towards a crest or edge of a tree line helps maintain concealment. Slow vehicle movement makes the vehicle less likely to appear as a sound contact to the enemy.

### HUNT

**Infantry** - this command maximizes the unit’s awareness for possible enemy contact. Soldiers advance slowly, weapons ready. Upon seeing an enemy unit, or when fired upon (even if the enemy is not seen) the unit stops immediately. This is a good command to use when enemy contact is imminent.

When soldiers using HUNT get too tired, they stop and pause for 90 seconds before continuing to HUNT.

**Note:** in combination with a Target Arc command, Hunt is restricted to only the area within the arc, and ignores enemy units outside the arc.

**Vehicles** - orders vehicles to advance slowly and observe the battlefield for enemy contacts. Upon spotting a threat, such as another enemy vehicle or tank, or when fired upon (even if the enemy is not seen), the vehicle stops immediately.

**Restrictions** - same as all other Movement commands.

**Example** - Hunt is very useful for cleaning out houses which are suspected to have enemy hiding inside, or as a “move to contact” order for tanks.

### ASSAULT

This command is available for infantry squads only, and requires a certain minimum headcount (in other words, you cannot use assault if you only have two or three people active). It instructs the squad to conduct a so called “leapfrog” movement, which is executed by splitting the squad into a movement element and a firing element. The moving element advances at FAST speed (the same limitations apply as with the FAST command) while the firing element remains stationary and provides covering fire. After the movement element stops (ending the first “leap”), the roles switch, and the movement element (now the firing element) provides covering fire while the firing element (now the moving element) advances, reaches and overtakes the firing element, and arrives at the next “leap”. This procedure repeats until the squad has reached its designated objective location.

Assault is usually executed in the face of enemy fire (typically from the front) and is a good compromise of security and forward movement while maintaining unit cohesion and limiting fatigue. The disadvantages are that it is a fairly slow form of advance, and that it requires a certain minimum unit experience to implement.

**Restrictions** - Since “leapfrogging” does not make much sense with only a handful of soldiers, it requires a certain minimum headcount.

**Example** - use Assault to cover open ground over long distances while under enemy fire. Assault can be also useful to clean out buildings (only the assault team is exposed to ambushes)
**BLAST**

This command enables an infantry unit with demo charges to blast a hole through a building wall, exterior or interior, as well as through tall stone or brick walls, Barbed Wire, and of course also through the nasty Bocage hedgerows, allowing units to pass through the breach.

**Note:** the breach may not automatically be wide enough for vehicles to pass through. This may require more than one blast attempt.

The time it takes to conduct this command varies based on unit experience, and can range from one minute to several minutes per detonation.

The Blast Command instructs the unit where to move. This makes it no different from any other Movement Command, except that the unit attempts to blow up a section of (nearby!) wall or hedgerow along its path.

**Note:** It is a good idea to place the Blast Command on the opposite side of the wall you want breached. This ensures that the correct section of wall is breached and that the unit moves through the opening.

**Restrictions** - only available for infantry units carrying demo charges.

**Example** - moving in a city down an open street can be lethal - especially when the enemy has a few well positioned machineguns in place. A much safer, but more time consuming method, is to blow holes in adjoining buildings, avoiding the open street entirely. Another good use for this command is to enter and storm a building from an angle the enemy isn't expecting.

**MARK MINES**

This command enables engineer units to detect and mark hidden minefields so that other units are aware of them. Other units can then move through the marked minefield, albeit slowly. Mark Mines is a very slow movement command that takes the unit’s full attention and reduces awareness and returning fire.

**Restrictions** - only Engineers can mark mines.

**Example** - Marking mines under fire is suicidal unless you have other forces suppressing the enemy or call for a large scale smoke screen.

**REVERSE**

Simple “back up” command, available only to vehicles. Instructs the vehicle to drive backwards without changing its facing (e.g. keeping its gun and stronger front armor forward towards the enemy while retreating).

**Restrictions** - same as for all Movement commands.

**Example** - use Reverse to back up into cover while keeping a tank’s front armor directed at the enemy.

**COMBAT COMMANDS**

Combat Commands usually have to do with firing one’s weapons at a designated target, be it an enemy unit or a general area on the battlefield where enemy units are suspected or known to hide (or to move to). Only one Combat Command can be active at any one time, but it can be combined with commands from other
Groups (e.g. movement).

**Note:** In general, the player cannot determine exactly which weapons are used. This choice is made by the squad/unit leader based on the circumstances (range to target, ammo situation, suppression and so forth).

**TARGET**

This is the standard fire command, instructing a unit to use all of its available weapons to fire at the designated target. The target can be an enemy unit or a piece of terrain (area fire).

**Note:** How it says “available weapons” in the preceding paragraph! Some weapons may have restrictions, such as having to be deployed before you can fire them.

If the target is an enemy unit, the firing unit will fire only when the enemy target is visible and hold fire (but maintain the target) when it is not. If the target is an area, the firing unit will maintain a constant stream of outgoing fire at the selected area, automatically shifting its center of aim during the process to each side to maximize coverage and effect. Area targets always “snap” to the underlying action grid in CMx2.

Area fire orders are immediately canceled when any active member of the firing team/squad enters the target area (useful for room clearing).

**Note:** A special situation is the targeting of an enemy unit near a TRP (Target Reference Point). In CMx2, these double-function not only for artillery support fire, but also as “ambush markers”. Soldiers targeting an enemy unit near a friendly TRP are much better at estimating the range correctly.

How much and what type of fire (small arms, main gun, grenades) is outgoing depends on a number of factors, including the type of firing unit, the distance to the target, target type, and the available ammunition. For smaller targets further away, the firing unit will use aimed fire and single shots or short bursts while it might switch to full auto at targets at close range and when it has enough ammunition available.

Support soldiers for heavy weapon and sniper teams will tend to withhold their fire, unless the enemy is very close.

**Note** that you do not have to use this command to make a unit fire. Units will open fire on sighted enemy troops and vehicles automatically if/when they can. In fact, unless you have a specific reason to order a unit to concentrate its fire on a specific enemy, it is often the better choice to let the unit decide its targets freely.

While the target command is being issued, the command line extending from the
firing unit to the mouse cursor assumes the function of a Line-of-Sight tool. Different shades of gray, blue and red indicate if a line of sight is free, obscured, or blocked, and where it is blocked (the area out of sight is marked with red). When placing a target command the color denotes how strong the LOS is to the target. If the line to the target is light blue the LOS is clear, part dark blue and part magenta if it’s blocked, and gray if it’s mostly clear but not for every soldier in the squad/team.

Additional Notes can be displayed at times above the target, alerting the player to special conditions, such as Hull Down or Partially Obscured or plain Out of Sight targets.

How well a unit performs in executing a Target command depends on a large number of factors, including distance and equipment, target type and status, as well as the firing unit’s experience. The quality of range estimates made by gunners and the speed of acquiring and re-acquiring targets especially depend on the experience level of the shooter.

**Note:** Virtually every bullet in CMx2 is tracked from muzzle to target. This applies to both small arms as well as heavy calibers. The principle of “what you see is what you get” applies: if only part of a vehicle is visible (e.g. behind a wall or partially concealed by a slope in the terrain) then only that part can be hit by direct fire. The only exception to this is that vehicles are NOT shielded by hiding behind knocked-out armored vehicles; however, infantry does gain cover in this situation. In fact, infantry also receives a blast protection bonus when an armored vehicle (live or knocked out) is between them and a very large explosion.

**Restrictions** - 1) Target is not available if the unit has no ammo.

2) Recoilless anti-tank weapons such as Bazookas, Panzerfausts, and Panzerschrecks may be fired from within buildings. However, the potentially lethal hot gases released by these weapons may wound or demoralize any soldiers within the same building floor! These weapons may be fired from building balconies without any penalties.

3) When a vehicle attempts to fire on a target that is beyond its maximum elevation angle (for example, a tank trying to shoot at the upper floors of a building that it is very close to), the aiming time for the shot is increased dramatically. Buttoned up armored vehicles suffer the same penalty if they attempt to attack point-blank range targets, such as infantry swarming around the tank.

**Example** - enemy snipers are firing from a building. Instead of targeting the enemy unit, the player calls for area fire from a tank, which uses high-explosive ammo from its main gun to blow up the whole side of the building.

### TARGET LIGHT

This is a variation of the Target command and works very much the same, but at a reduced fire output. Usually it limits the firing unit to use small arms and MG fire,
while larger calibers and heavier weapons hold fire.

Note: on-map mortar teams that receive a Target Light command will use their mortars, but only at a very slow rate of fire.

Target Light is useful when you want to put a few MG rounds into a suspected enemy location but not waste a tank’s main gun round, or if you want to take a few aimed shots at a low threat infantry target not too far away without wasting too much ammo. Target light does not prevent the use of hand and rifle grenades, though, at the appropriate ranges.

Restrictions - same as for Target

Example - for firing at long distances, the game itself already reduces fire output even if you use the Target command, so Target Light is most useful as an ammo preservation tool for targets at medium and close ranges.

Target Arc

The Target Arc command orders the unit to only fire at enemies within a certain target area and/or range. After selecting this command, the player has to click on two points on the game map, and the cone-shaped area between those two points represents the designated target area; or, you can keep the SHIFT key pressed when selecting this command. This will create a 360 degree arc around the selected unit, allowing you to set the distance at which the unit will engage enemies but no specific direction.

Any visible enemy units that are located inside this area, or that move into this area, will be fired upon. Any enemy units outside of this target arc will be ignored (until self-preservation takes over and the Tactical AI decides to override player orders; e.g. if an enemy unit suddenly pops up at extremely short range).

When placing a target arc, the distance in meters is displayed.

This Command is also useful to keep a unit’s “attention” focused on a specific part of the game map while it moves. If, for example, you want to keep a close eye on a bunch of buildings (where you suspect enemy activity) while driving down a road, you could assign a target arc to several units covering this area. The target arc increases the chances that units will recognize and engage an enemy threat within the target area quickly.

After placing an arc, the unit will rotate its main gun turret - if available - to face the center of the designated target arc, to minimize acquisition delays and maximize spotting abilities. Infantry units will shift their facing accordingly.

Restrictions - You cannot mix Target/Target Light and Target Arc commands. The AI will sometimes override Target Arcs in self-defense, when, for example, an enemy unit suddenly appears at close range.

Example - an unidentified enemy vehicle contact is reported near a building. We give a target arc command to one of our Sherman tanks to make sure they engage the enemy vehicle as soon as it pops up from behind cover.

Note: Target Arcs placement is “relative”, i.e. in relation to the unit’s position and facing, and not tied to an absolute location on the game map. In other words, if you move a unit with a designated Target Arc,
that arc will move and turn together with the unit. In this way, you can order a unit to “cover the three o’clock position”. You cannot use a Target Arc to “stick” to a particular spot on the map. So, if that’s what you want, you have to keep the targeting unit stationary or adjust the arc accordingly during the unit’s movement.

- **CLEAR TARGET**

Instructs the currently selected unit to stop focusing on its designated target. A unit without a designated target is then free to engage targets at will, or will follow other player-specified commands.

**Restrictions** - Clear Target is grayed out if the selected unit has no currently designated target.

**Example** - after area firing at a building and blowing a hole in the wall, no further enemy contact is reported. We abort the area fire command to allow the unit to focus on other targets at will.

- **FACE**

**Infantry** - issuing a Face command will cause the soldiers of the unit to re-evaluate the cover provided by the surrounding terrain in relation to the facing the player has indicated, and, if better cover is available, to move to that cover. For example, the unit might move around a wall, or house corner, to face the new direction while maximizing cover against fire coming from that direction. You can issue a Face Command to a unit in motion as well. If you do so, then the last waypoint will be automatically highlighted so the Face Command will apply to that last waypoint, not the current position. You are also able to manually select a waypoint (any waypoint, not just the last one) and issue a Face order from there however.

**Note:** the Face command is “absolute” to the point you click on the map, not “relative” to the position of the unit at the time that you click. An example: You issue a Face command to a moving unit by clicking on a house in the distance. When the unit reaches its final waypoint, it will turn to face the house.

**Vehicles** - The unit will rotate its hull and turret (if applicable) to face the direction the player has designated.

**Restrictions** - vehicles cannot rotate if immobilized.

**Example** - an enemy Panzerfaust team is spotted on the flank. We change the facing of our Sherman tank to rotate its stronger front hull towards the threat.

**Note:** facing matters! It matters for both infantry as well as vehicles and greatly increases a unit’s awareness and spotting abilities in the direction it is facing. CM simulates the natural human behavior to “look around” the battlefield (which includes a higher attention towards the front, less to the sides and even less towards the back) for both infantry as
well as each individual crew position on a vehicle or tank!

- **TARGET SMOKE**
  Besides simple vision-blocking smoke only, CMx2 also features White Phosphorus smoke shells, which can cause damage and burns to soldiers exposed to it (within very close proximity to an exploding shell).

- **Infantry** - applicable to some mortar teams. Other infantry units use the Pop Smoke command.

- **Vehicles** - The unit will fire smoke shells at the designated target or location.

- **Restrictions** - Units need to be capable of firing smoke shells, and ammunition needs to be available.

- **Example** - a major threat appears in front of your tank. The tank commander orders smoke to be fired in front of the enemy to blind it, gaining valuable time for a retreat.

- **TARGET ARMOR ARC**
  The Target Armor Arc works exactly the same as Target Arc, except that the unit will only engage armored vehicles such as tanks within the designated arc. This Command is very useful if you do not want to reveal the position of your anti-tank assets to enemy infantry reconnaissance, or if you want to ensure that your tanks only engage other enemy tanks instead of distracting themselves on softer targets.

- **Restrictions** - You cannot mix Target/Target Light and Target Armor Arc commands. The AI will sometimes override Target Arcs in self-defense, when, for example, an enemy unit suddenly appears at close range.

- **Example** - you have hidden away an anti-tank gun overlooking a likely route that enemy armor will use to attack. You want the anti-tank gun to maintain the element of surprise, so you give it a Target Armor Arc over the area to ensure that it does not fire on any enemy infantry preceding the tanks.

- **TARGET BRIEFLY**
  The Target Briefly Command functions exactly the same as the Target Command, with one twist: instead of indefinitely engaging the target, a unit given the Target Briefly Command will stop shooting after 15 seconds and self-cancel the order. Issuing the Target Briefly Command more than once will add extra 15 second increments to the Target Briefly duration. This is useful when you have friendly units in close proximity to the target and you need to tightly coordinate their orders within a single turn.

- **Restrictions** - Target Briefly is not available if the unit has no ammo.

- **Example** - You are assaulting an enemy-held building with a tank and a squad of infantry. To prevent friendly casualties from the tank’s shells, you give the tank a Target Briefly Command on the building and then give the infantry a Pause Command for 15 seconds coupled with orders to move into the building. As soon as the tank has finishing shooting, the infantry squad will spring into action and assault the building.

- **SPECIAL COMMANDS**
  Special Commands include various special tasks not directly related to movement or firing weapons. Many Special Commands deal with specific situations or specific equipment, and therefore are only available to a unit if those conditions are met.
or if the equipment is available. Popping Smoke, for example, is only possible if the unit has smoke grenades available. Likewise, Deploy Weapon is only an option if the unit carries a heavy weapon which can (or has to be) deployed before firing. Most Special Commands are exclusive, meaning that they are the only command that can be executed at a given time, and cannot be combined with other Command Groups.

■ HIDE

*Infantry* - soldiers will generally go prone and hold fire and look for nearby terrain offering good concealment, trying hard not to get spotted.

*Vehicles* - vehicles will hold fire and not move, trying to keep a low noise profile. Hiding vehicles that are struck by a projectile, or that spot an enemy vehicle targeting them, will automatically un-hide.

**Note:** Hiding while facing an enemy takes a lot of nerve, and units might decide to stop hiding if fired upon or if the enemy approaches extremely close, depending on that unit’s experience, morale and leadership.

**Restrictions** - hiding is no good if the enemy is already firing at you, or if you are trying to hide in open ground in full view of the enemy.

**Note:** issuing a Hide command to a moving unit is possible. The unit will continue moving and will automatically hide after reaching the FINAL waypoint. If you want a unit to hide immediately you have to first issue a CANCEL ALL Instant Command to clear all waypoints, and then issue the Hide Command.

**Example** - we hide a German Panzerschreck team to let the first few vehicles and US infantry pass by before un-hiding and launching a grenade at the side of an enemy tank. This ambush tactic is especially effective if used in conjunction with a friendly Target Reference Point (TRP), as this increases the firing unit’s accuracy for the first shot.

■ DEPLOY WEAPON

Certain heavy weapons can be deployed before firing to increase their chance of hitting or to increase their fire output, while others cannot be fired at all before being properly deployed. Deploy Weapon instructs the gunner of a heavy weapon (such as a medium or heavy machinegun, a mortar, an anti-tank gun, howitzer, or other heavy equipment) to deploy his weapon (on the appropriate mount), while one or more other soldiers of the same unit are designated as loaders and/or security or lookouts.

Some weapons, for example, medium machineguns, can be fired without first being deployed, but will suffer from decreased accuracy and a lower fire output. Other weapons, such as mortars or howitzers and anti-tank guns, cannot be fired at all if not properly deployed.

**Note.** weapons which can be fired even if not fully deployed show a “semi-deployed” message across the weapon icon in the interface, whereas other heavy
Combat Mission

Weapons typically show “not deployed”. Guns that are not deployed but are in transport mode show “limbered” in the interface.

Deployment takes a specific amount of time for each type of weapon, and also depends on various other factors, such as the unit’s experience and current condition.

If you order a unit with a currently active Deploy Weapon command to move, it will automatically first de-activate the Deploy Weapon command, and then execute the movement command. There is a longer command delay in such a case.

Note: Large wheeled weapons (such as anti-tank guns) can be pushed at a slow speed without having to be un-deployed and then re-deployed.

Note: Anti-tank guns that are deployed in the Setup Phase and do not move or rotate are harder for the enemy to spot!

Restrictions - If you issue the Deploy Weapon command to an already moving team, it will deploy its weapon at the end of the movement command. If the movement command consists of several waypoints, the weapon will be deployed after the last waypoint has been reached. If you want the team to deploy immediately, you need to first clear the movement command(s).

Note: Depending on the weapon system, certain restrictions may apply as to where a weapon can be deployed or not. For example, some weapons may not be deployed inside buildings or on balconies or roofs. Others may be deployed, but the setup time is increased: for example, heavy MGs may deploy inside buildings, though assembly time is increased. This simulates the need for the crew members to clear a space and set up a stable firing platform for the weapon.

Example - we want to use a heavy machinegun to provide covering fire for an infantry assault. Finding a good position with a good field of view and field of fire, we issue the Deploy command to maximize that gun’s accuracy and fire output.

Dismount

Orders the passengers of a vehicle to leave the vehicle. This command is available to both passengers as well as the vehicle itself. If you select a vehicle and issue the Dismount command, ALL passengers will leave. If you select a Passenger unit and issue the Dismount command, only that unit will disembark and automatically take up a defensive position near the vehicle.

Note: For passengers, Dismount is not the only way to leave the vehicle. You can also select a passenger unit and issue one of the available Movement Commands. The passenger unit will automatically disembark and then move to the designated way-
point on foot. This is not possible for vehicle crews, since choosing a Movement order while a vehicle is the active unit will order the vehicle to move to the specified waypoint.

Disembarking troops may attach Face, Deploy, and Pop Smoke orders to waypoints. **Restrictions** - only available to passengers inside vehicles or vehicles carrying passengers. Otherwise inactive.

**Example** - after the armored infantry platoon arrives at the intended dismount point, we group-select all Halftracks and issue a Dismount command. All teams dismount immediately.

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### BAIL OUT

Available for vehicle and antitank crews only, this command instructs the crew to leave immediately and seek cover nearby. Vehicle crews may re-mount their vehicle again during the same battle, but for anti-tank crews abandoning the gun is permanent, and therefore Bail Out should only be used in emergencies where staying with the gun would mean certain death.

**Restrictions** - AT Gun teams may not remount abandoned guns.

**Example** - to preserve the crew, we order them to Bail Out of an immobilized tank with a damaged gun sitting in plain view of enemy anti-tank weapons, since it’s only a matter of seconds before the tank is going to brew up. Bail Out can also be used to dismount the crew and use it for recon, since bailed out crews can later re-occupy the abandoned vehicle.

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### ACQUIRE

The Acquire command allows an infantry unit to pick up equipment, weapons and ammunition from points where such goodies are available. In CMx2, this usually means from infantry carriers such as halftracks and trucks which usually carry additional equipment in storage compartments.

In order to use Acquire, the infantry unit has to enter the vehicle first. A pop-up window lists all available equipment that the unit is eligible to choose from. Clicking on an entry removes the equipment or ammo from the list and places it into the inventory of the passenger unit.

**Note:** while soldiers automatically can share ammo without explicitly being ordered to (from nearby vehicles, or from nearby infantry units in their formation, as well as through buddy aid), the Acquire command gives you greater direct control.

**Note:** Units adjacent to an Ammo Dump can also use the Acquire command to obtain ammunition from the Ammo Dump.

**Restrictions** - only active when the infantry unit is inside a valid pickup area, such as inside a halftrack or truck, or adjacent to an ammo dump.

**Example** - after nearly an hour of continuous combat, the armored infantry platoon is running out of ammo. We split the squads into teams and order them into the nearby halftracks one by one to grab fresh ammo.
**Pop Smoke**

This order is available for both infantry equipped with smoke hand grenades as well as for vehicles equipped with smoke generators or smoke launchers. Pop Smoke instructs such units to place a smoke screen around its current position, to the best of its ability. Pop Smoke is used usually as a defensive command when the unit runs into overwhelming resistance and is useful to spoil the enemy’s aim (even if only for a few seconds) and therefore gain time to get into a better and more secure position (or out of an ambush, for instance).

The duration and placement of the smoke screen depends on the unit that is executing this order, as well as the weather and wind conditions. Keep in mind that smoke drifts and dissipates rather quickly under certain conditions, and can often become as much of an obstacle to your own forces as to the enemy. Offensive use of smoke (e.g. covering an advance) is usually left to supporting artillery or air assets and not to the individual ground unit.

*Note:* “Pop Smoke” can be aimed using the Face Command or current unit facing. The smoke will not fire until an existing Face Command is executed.

**Restrictions** - available only as long as unit has smoke grenades available and/or the smoke launchers are not damaged.

**Example** - an armored infantry platoon needs to dismount under fire. The accompanying Sherman tanks are ordered to pop a defensive smoke screen around the dismount point, allowing the infantry to dismount and head for cover, while spoiling the enemy aim.

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**Pause**

Available for all unit types, this command instructs a unit to wait before carrying on with further orders. Pause can have different states, and each click on the Pause Command Button toggles through the list of available options.

*Timed Pause* - when you first select the Pause Command, an info text appears next to the selected unit icon: “Pause 00:15”. This means that the unit is going to wait in place (but will continue firing, if applicable) for 15 seconds before continuing with any other orders. Each further click adds 15 seconds to the timed pause, for a maximum amount of 1:30 min (the longest selectable time for timed pause).

*Pause* - The next click sets the Pause Command to a “Pause for further orders” status. This is identical to the “Pause” used for Instant Commands, and is additionally indicated by an activated “Instant Pause” button in the interface. The unit will stay in place until the player clicks the Instant Command “Pause” button again, after which the unit will resume any pending commands.

*Un-Pause* - The next click resets the cycle and clears the Pause command. At this setting, the unit is not going to pause.

**Restrictions** - none.

**Example** - if you want to time it so that one squad at a time crosses a road - using FAST - then you could issue FAST commands to all squads in the platoon in advance, and assign each a different time delay using the Pause command. So, you could have 1st Squad break and cross the street immediately, then Squad 2 thirty seconds later, and Squad 3 after 1 minute, for example.
OPEN UP
Available for both vehicles and passengers. Open-up is a toggle. When activated (highlighted), it instructs the vehicle passengers or crew to open all available hatches. If the vehicle has none available, nothing happens. When de-activated, it tells the crew or passengers to close all hatches.

Restrictions - available only for vehicles and passengers.

Example - fighting from an open hatch increases the field of view and battlefield awareness of a vehicle crew tremendously (by eliminating blind spots created by the vehicle’s vision ports), and even allows passengers to use personal weapons, but it can be very dangerous and lead to casualties, especially if the enemy returns fire from close distance. Use this command to choose between situational awareness or added protection, as the situation demands.

ADMINISTRATIVE COMMANDS

Administrative commands deal with the organization of squads, teams and crews.

SPLIT TEAMS
Evenly (more or less) splits a squad into two or three teams. How many teams are split depends on the nation’s doctrine as well as the squad’s current manpower. The Tactical AI tries to keep the teams at roughly the same strength and also distribute special weapons evenly, thereby effectively creating independent maneuver elements. Splitting teams is often advisable when fighting in urban terrain so as to avoid bunching up of soldiers into too small of an area, where they all can be taken out by a single well-placed hand grenade.

Split teams (including the assault, scout, and anti-tank detachments created by the commands explained next) belonging to the same parent squad automatically re-join when stationary within a few meters next to each other, and form a single squad-sized unit again without requiring the player to give another order. So if you want to split a squad into teams, make sure that you separate the teams shortly after splitting them, or they will reform into a single unit.

Restrictions - not available if the headcount of a given squad is too small. Certain nationalities whose doctrine discourages low-level decision making, such as the modern Syrian army, the World War II Soviet Army, and the Royal Italian Army, will suffer morale penalties if split Teams are out of close visual and voice contact with their Platoon Leader.

Example - we want to assault an unsupported German machinegun position from the front and both flanks at the same time, and split a full strength US rifle squad into three teams. By splitting into three teams and using them as independent maneuver elements, we are reducing the MGs ability to suppress the entire squad.

ASSAULT TEAM
Splits a squad into two independent teams - a heavily armed security element that usually retains all heavy weapons (such as machineguns and rockets), and a maneuver element with small arms and automatic weapons, hand grenades and other equipment useful for close quarters battle. The game automatically tries to include the soldiers with applicable Specialties - such as Machinegunner or Marksman - into the correct Teams for their task.

Restrictions - same as for Split Teams.
Example - we want to clean out a building suspected to be occupied by the enemy. Sending forward the maneuver element with light automatic weapons, while keeping the heavy equipment back with the security element, reduces possible casualties from first contact and provides security for the moving team.

- **ANTI-TANK TEAM**

Orders the squad to detach an Anti-Tank element, usually consisting of two or more soldiers (including any soldiers with an Anti-Tank Specialty, if available) armed with the best anti-tank weapon(s) that the unit has at its disposal.

**Restrictions** - only available if the squad/unit has anti-tank weaponry available.

**Example** - we split out a two-man Bazooka team from the main squad and place it in a different location, issuing a Hide command to have them wait for a good shot, while the rest of the squad engages and distracts the enemy by fire.

- **SCOUT TEAM**

Splits off a team consisting of a few soldiers (usually 2 or more) with light automatic weapons (if possible) to act as light recon for the Squad or Platoon.

**Restrictions** - same as for Split Teams.

**Example** - we want to send a recon element forward to see if there is an enemy ambush. Splitting off a scout team minimizes casualties from first contact, and allows the rest of the unit to cover the scout element in case of retreat.

- **INSTANT COMMANDS**

Instant commands are mainly used for emergencies, when you need to quickly intervene to prevent a unit from getting into trouble (or to get out of trouble quickly). These commands allow the player to initiate three pre-defined “procedures” with one click, which, during emergencies, is often about all the time one has. These commands simulate actions soldiers would normally take by themselves on the battlefield when finding themselves in a tight situation.

Instant Commands can be used both in Real-Time mode as well as Turn-based mode. In Real-time mode they are executed immediately, in Turn-based mode they are executed immediately after the start of the next turn.

PAUSE - instructs the unit to temporarily halt all active orders and wait. This is the equivalent of yelling “Halt”. This button is a toggle, and by pressing it again, the unit is ordered to resume what it was doing. This is the equivalent of yelling “Carry on!”

CANCEL ALL - deletes ALL active commands for the unit instantly. If you have plotted a long chain of waypoints, this command allows you to delete all of them with one click without having to delete each waypoint one by one. This is the equivalent of yelling “Stop” over the radio.

EVADE - deletes all active commands and instructs the unit to take immediate evasive action. This may include moving to cover as well as popping smoke, if available. This is the equivalent of yelling “Take cover!” over radio.

- **AUTOMATIC ACTIONS**

In CMx2, your soldiers are not brainless robots. The Tactical AI is at work at all times
for both computer controlled and player controlled soldiers to try to simulate realistic behavior of human beings in a combat situation. There is a number of tasks that your soldiers will perform without the player having to explicitly order them to do it (in fact, there is no way for the player to issue such commands). Some are related to self-preservation and combat morale, others are important “administrative” tasks.

**MEDIC**

Any infantry soldier is capable of providing first aid on the battlefield (so called “buddy aid”) to nearby wounded friendly soldiers. There is no Command for this action, rather it happens automatically when a friendly soldier (regardless if he is from the same squad or not) is moved close to the location of an incapacitated comrade. Depending on the situation (incoming fire etc.) the soldier may decide to treat the wounded man. The word “medic” is displayed in the status field. The player can abort the treatment at any time by giving the parent unit that the medic belongs to any kind of Command. The medic may decide to abort the treatment himself as well if there is significant incoming fire. Additionally, troops will never perform buddy aid if there is a spotted (healthy) enemy within 100m.

*Note:* Dead soldiers can also receive “Buddy Aid” (by moving a friendly soldier close to the location), but all it does is reclaim their ammo and weapons, if possible.

**AMMO SHARING**

Besides the Acquire command, soldiers on the battlefield are also capable of automatically sharing ammunition to some extent with those around them. Soldiers can automatically share ammo with other nearby infantry units that belong to their formation, as well as with nearby vehicles (provided that the vehicles carry anything to share). So it is not always necessary to embark on a vehicle to access stored ammunition, although it still gives the player more direct control than auto-sharing.

The automatic ammo sharing feature is most useful for heavy weapon teams. Heavy weapons will draw their ammo first from ammo bearer teams before using their own carried ammo. Moving (or keeping) the latter close to the heavy weapon will ensure ammo resupply without the player having to specifically order it.

Special Ammo Dump units can placed on the map in place of transport vehicles in certain scenarios. These immobile units act as stores of ammunition that nearby units can draw ammunition from, following the same guidelines are ammo sharing between other units.

**SELF-PRESERVATION**

Even your virtual troops don’t like to die. The TacticalAI takes over control over troops for various stages of self-preservation without the player having to (or in fact being able to) issue any commands.

**PINNED**

Soldiers may become “pinned” when subject to heavy incoming fire (“suppression”). The term “pinned” refers to the inability and unwillingness of the soldier to leave his current position/cover, or to move at all, for fear of getting hit. Pinned is a temporary status that usually ends shortly after the suppression level is reduced, but
extended periods of heavy suppression can cause a unit to move from “pinned” to “panicked” state.

Pinned units remain under the control of the player and may receive combat commands, but may not act on them immediately, and will generally reject and ignore any movement commands.

■ SHAKEN

Troops may become Shaken as a result of events on the battlefield, such as heavy incoming fire, near misses, or casualties. Shaken troops are automatically Pinned but additionally are not able to receive any player commands. Unlike Panicked troops, shaken soldiers will usually not attempt to get up and run away.

■ PANIC

Heavily Shaken troops are prone to succumb to Panic.

Panicked soldiers succumb to their fears and may act irrationally just to get out of the current situation. This may mean ignoring any orders, and a high chance of getting up and running away (even if in plain view of the enemy and thereby becoming an easy target) to the nearest cover.

Panicked units cannot be controlled by the player until they recover from the Panic, and will usually plot their own commands, often trying to move away from known enemy contacts, or to nearby cover.

■ BROKEN

Troops who have suffered heavy casualties and have become shaken or panicked, but have not recently been under fire, may partly recover to a “broken” state where they return to player control, but are so “brittle” that any significant further incoming fire or further casualties will cause them to become shaken or panic again very quickly.

■ SURRENDER

Heavily shaken or panicked troops in proximity to strong enemy units may decide to throw down their weapons and attempt to surrender. Surrendering units are indicated by raising their hands. Surrendering units cannot receive any further commands.

Surrendered soldiers appear as MIA (Missing in Action) on the After Action Report. After a short while (usually about 1-2 minutes), units attempting to surrender “succeed” to do so, and disappear under a white flag icon.

It is possible to prevent units from surrendering, by “rescuing” them. In order to do this, you need to first clear out all nearby enemies, and move friendly units into the proximity. If successful, the surrendering units will return to their normal unsurrendered status (but will probably still be panicked).

Troops will not fire on surrendering enemies, but they will fire on unsurrendered ones that may be nearby, so it is possible for surrendering troops to be hit indirectly.

Note: Fanatic troops will never surrender.


**COMMAND & CONTROL (C2)**

The concept of moving and acting on information is called Command and Control, or “C2” for short. Arguably, C2 is the single most important aspect of a combined arms force operating in the field. Its ability to pass information up and down the Chain of Command largely determines that force’s opportunities and the options available to it.

**Note:** the C2 rules applied in CMx2 vary slightly depending on which Skill level you’re playing. This chapter assumes the Elite skill level, with all the rules in full effect. At Veteran level, some of the restrictions imposed by the C2 rules are lifted or at least are not as strict, while playing at Basic Training level essentially means C2 is not active at all.

There are two primary components of C2: communication methods and control procedures. In practical terms, this means a break in communications reduces the ability for the force to function properly, but good communications don’t matter if the commanders can’t leverage the information to achieve an advantage.

### COMMUNICATION METHODS

C2 methods are divided up into different groups and displayed in the Unit Info Panel:

- **Visual Contact (units within LOS of each other)**
  - Eye Contact - close proximity
  - Eye Contact - distant

- **Audio Contact (units able to hear each other)**
  - Voice Contact
  - Radio Contact

- **Satellite Contact (available only for certain armies in modern day titles)**

Like any sort of chain, the Chain of Command is only as strong as its weakest C2 link. Having all three methods available to a unit at the same time allows for the best possible results, while having none at all means a break in the Chain of Command. A break means the higher and lower parts of the chain are no longer connected and therefore unable to communicate with each other. This can have disastrous game results.

### MAINTAINING C2 LINKS

The more types of C2 links units have, the better chance they have of maintaining connections. Just remember that not all C2 methods are of equal quality. Range is quite important because the farther away units are from each other the greater the chance they will experience breaks in communications. The inherent fragility of the method is also important since some are inherently more robust.

All units have the opportunity to establish Eye and Voice Contact, but to do so...
means keeping units fairly close and in plain sight (LOS) of each other. These are the most reliable, robust forms of C2 possible. Unfortunately, from a tactical standpoint, having units bunched up is generally not a good idea, nor is it even necessarily physically possible.

Radio Contact is the most basic technological means of overcoming these problems, however, radios are tricky things to operate effectively as distances increase, and good radios are quite expensive. CMx2 includes two major types of radios: small handheld radios, and large backpack radios.

By using the hotkey ALT-Z, C2 links will be represented on the battlefield by lines connecting units to their parent HQs. A bright red link indicates a strong C2 connection, usually both visual and audio. A slightly darker red link indicates a weaker C2 link, which is usually usually just visual contact. A dark link means there is no C2 contact, and the unit is out of command with it’s parent HQ.

Some armies in modern day titles, such as the modern US Army, have another powerful C2 tool at their disposal: satellite communication devices. These can be available in both vehicle mounted and infantry carried variants, and link the entire force together over the battlefield via a digital network. These devices offer a means of communication that is superior to radio contact, and are largely immune to the interference factors of Visual and Audio methods.

**CONTROL PROCEDURES**

CMx2 goes beyond just simulating the hardware to maintain contact on the battlefield, but also attempts to realistically track what happens with the information passed up and down the chain. A rifle squad reporting an enemy contact to its platoon HQ will trigger an entirely different response than if it is broadcasting the information through the battalion radio net! That’s because the platoon HQ is set up and has procedures in place guiding it what to do in this situation. For the Battalion HQ, this piece of information is largely useless.

What this means in game terms is that units can effectively only trace command-and-control to their immediately-superior HQs.

Higher HQs may fulfill this role only to a limited extent. If a squad or team is out of contact with its immediate superior (usually a platoon HQ) then its company or battalion HQ may provide voice and close visual contact, but not radio or distant-visual contact. This simulates that a higher HQ can’t babysit a large number of units more than one level lower in the organization, and it means that higher HQs can’t be used in a gamey way to make platoon HQs unnecessary, but they can step in and provide command-and-control in a limited radius in emergency situations.

**INFORMATION SHARING**

The better organized and connected a force is, the better able it is to communicate
critical pieces of information between units. Though it is not obvious to the player that the information itself is moved around, the results of it are. There are three primary benefits of good organization and communication: spotting of enemy units, calling for support, and maintaining discipline.

One of the most important aspects of Combat Mission is its system of revealing information about enemy units, such as position, type, and actions. Unlike most other games, CMx2 uses what we call Relative Spotting instead of Absolute Spotting. In an Absolute Spotting system, when an individual friendly unit “senses” something, that information is instantly, and perfectly, available to all units on its side. It doesn’t matter where the other units are or what sorts of communications capabilities they have. Relative Spotting, on the other hand, keeps the unit’s “sensed” information from moving to other units unless there is some way of communicating it to them. In other words, when you click on a unit in CMx2 you get to see what it sees relative to what it knows. If the unit is isolated from the Chain of Command it wouldn’t be able to target something it didn’t spot itself, for example.

Note: On-map mortars can fire indirect even if they are out of command & control and lack a radio, provided that the spotter is within 50m.

Lastly, maintaining C2 is important for keeping unit cohesion intact. Units tend to get jumpy when they don’t know what the friendly units around them are up to, or where their superiors are, or what the enemy might be trying to do at that moment. Without C2, the imagination can run a bit wild, so to speak, and the unit may be imagining the worst scenario. Perhaps all its buddies withdrew and forgot to tell it to pull back? Maybe the HQ was wiped out and nobody higher up knows about those tanks coming down the road, and therefore no help is on the way? Well-disciplined units hold up better under these circumstances, of course, but every unit has its breaking point. If it has contact with its fellow forces and feels supported, things are less stressful.

### Leaders

Every unit has someone in charge of its soldiers, though not necessarily the same type of Leader. Leaders provide units with, what else... leadership. They help maintain internal discipline, direct fire to be more effective, and keep contact with other Leaders. The more Leaders you lose, the harder maintaining C2 becomes.

Leadership influence takes the form of a Leadership Modifier represented in the Unit Info Panel. The better the modifier, the more effective the Leader is in keeping things on the straight and narrow. Note that the modifier values are +2, +1, 0, -1, and -2. This means that a Leader can have no special effect on Leadership (0 rating) or even a negative influence (-1 or -2). Anybody that has ever served in the military, or studied it in historical texts, knows that some people should
never have been put in charge of anything except washing dishes (and you don’t necessarily want to be the one eating from those dishes). CM dutifully simulates these poor Leaders.

There are two types of dedicated Leaders; Unit Leader and Assistant Leader. A Unit Leader is a soldier who has the training and rank to command the unit he is assigned to. The Assistant Leader has similar training and capabilities as the Unit Leader, but is of a junior rank and may not have all the skills necessary to command a unit over the long term. However, an Assistant Leader generally has the same chance of being a good Leader in a tactical fight, which is good because that is exactly what he’ll have to do if the Unit Leader becomes a casualty. Squad-type units usually have a Squad Leader (Unit Leader) in charge of Team A, and an Assistant Squad Leader (Assistant Leader) in charge of Team B. When Squads are split up, like Weapons Squads normally are, this effectively means that the command responsibilities are split up. If one Leader falls to fire, the other one will not take over his responsibilities, because they are assumed to be physically separate units when split off as Teams.

When a battle starts, the name and rank displayed are that of the unit’s current senior Leader. Should that Leader fall in battle, the name and rank will change as the replacement assumes command.

### Radios

World War Two commanders did not enjoy the luxury of a whole array of powerful communications tools that are available on a modern 21st Century battlefield (when satellite based tracking systems and communications are often available even to small units and formations). Instead, the primary means to communicate over distance (outside of visual and audio ranges) was the radio.

But radios were expensive and (compared to today) rare. While the US forces made a deliberate effort to try to provide radios usually at least down to the platoon level, many German formations only possess a radio for the main Company HQ, or have one reserved for specialized Forward Observers. Some forces with more outdated technology, such as the Royal Italian Army, did not have any radios in their infantry formations at all, instead relying on pre-established field telephones, and messengers carrying written orders for communication.

Players will probably learn quickly that paying attention to where the radios are on the battlefield is going to provide a crucial element on the road to victory. Without a radio nearby, that group of on-map mortars is pretty much limited to only firing at targets within sight. Without a radio, that platoon commander who loses sight of his Company CO is effectively out of the loop with higher ups.

Below the company level communications were mostly by voice and sight. Because the effective range is so much less than a radio, Platoon HQs have to remain quite close to their assigned units in order to control them. A Rifle Platoon, for example, would usually advance in a way that most, if not all, of the attached squads and weapons teams could see or hear the Platoon Leader’s commands.

Weapons type platoons were often asked to operate over larger distances than infantry type platoons. Since radios were not usually available, the solution was to add intermediate Section HQs between the Platoon HQ and the weapons under its command. Their job was to extend the range of the Platoon HQ by acting as
a relay point for communications.

A good example of Section HQs can be found in most Medium Mortar Platoons. Often there are two Section HQs, each with two mortars, assigned to a single Platoon. By positioning the Section HQs, and their assigned mortar teams, to the left and right of the Platoon HQ, the Platoon Leader can communicate with each of his Section Leaders, which in turn communicate with each of their Mortar Team Leaders. This allows voice and visual commands to be quickly and efficiently relayed from top to bottom over a much greater area than platoons without Section HQs.

The importance of positioning Section HQs becomes apparent when attempting to call for indirect fire support. For defensive reasons, you don’t want your mortars bunched together, yet if you spread out too much you’ll lose contact with them. If that happens, then they usually will be unavailable for indirect fire missions. Section HQs, therefore, are vitally important despite their lack of radios.

In modern titles such as CMSF, radios are such a common commodity in even less advanced armies that the placement of radios is not a major concern. Even squads are usually armed with the military-grade equivalent to a walkie-talkie, allowing them to remain connected to C2 over a respectable distance and out of visual or audio range. Some modern forces have even more powerful communications in the form of networked satellite devices.

These networked satellite devices, which can be either mounted on vehicles or contained in ruggedized PDAs, are connected to a central computer system that takes input from all the other devices. Think of them as specialized computers connected to the Internet with built-in GPS. Each device linked to the system is automatically tracked and updated on a digital map shown on all the screens of the other devices. Therefore, not only does the operator know where they are, but also where everyone else is. Better still, commanders can enter information about enemy units so everybody using the system can see the same thing. The other significant feature it has is the ability to “text message” anybody with a connected device, regardless of where they are in the chain of command.

**ARTILLERY & AIR SUPPORT**

When the going gets tough, the tough call for Support! Combat Mission offers players unprecedented access to this all-important resource in a way that is both realistic and simple to use.

Support assets may consist of close air support as well as artillery (mortars, guns, howitzers and rockets). Support assets may be off-map (often stationed miles behind the actual frontlines), or on-map (the actual guns and mortars are visible on the battlefield, and are under the player’s direct influence). In the latter case, the support assets can also be used in the direct-fire role; however, as far as indirect support is concerned, there is essentially no difference in how on-map or off-map assets are treated. More specifics about the use of on-map assets are explained later in this chapter.

Although Air and Artillery produce quite different results, CMx2 for the most part uses the same interface for both forms of Support. Better still, CMx2 helps walk the player through the various steps needed to complete a Support Request.
without requiring months of military training.
To see if Support is available, and what types, all the player has to do is click on one of his units, and then look at the Support Buttons in the Unit Info Panel, just above the Special Equipment area. If a button is lit up, then Support is available; otherwise the button is dimmed and there is no support available for that type (air or artillery).

Note: you have to select at least one friendly unit for the Support buttons to light up. Also, for turn-based play, this only works during the Command Phase.

These buttons not only inform the player about availability, but also act as the means of creating new Requests (the act of “asking” for Support) or viewing existing Missions (a Support Request put into action). A button will also blink when the Mission starts to deliver its munitions, thereby giving the player some warning that something is going to go “boom” very soon.

Sometimes lots of Support is available, other times none. The availability of Support is always force wide and determined by the designer of the Battle.

■ REQUESTING SUPPORT

The first step in making a Support Request is to select a unit to be a Spotter, then clicking on either the Air or Artillery Support button in the Unit Info Panel (keep in mind that if a button is dim, Support is not available). Instantly, the user interface changes to include two new elements; the Support Roster and Support Panel. The Support Roster shows all available Assets while the Support Panel presents options for making a support fire request.

The following sections explain how to use this new interface to create a Support Request and turn it into a Support Mission.

■ SELECTING A SPOTTER

The player’s first task is to identify which unit to give responsibility to for both creating a Support Request, and managing the resulting Support Mission. Since not all units are equal in this regard, here are some things to keep in mind when
selecting a Spotter:

**Line of Sight (LOS)** - quality LOS to the target area always makes for more accurate and effective results, except for pre-planned strikes (called during the Setup Phase of a battle) and strikes on known pre-registered TRPs which do not require LOS.

**Note:** Spotters for indirect support weapons (as well as on-map mortars) are able to target areas slightly outside of direct LOS under certain circumstances, such as when firing indirectly over a tall wall or just behind the crest of a hill.

**Unit Type** - specialized forward observer teams are better (trained & equipped) than formation HQs, for example. In fact, certain types of support (like Air Support) may only be called by specific types of units (such as only by dedicated FOs), and may be completely out of bounds for others.

**C2 Links** - Units without a communication link to the spotter are shown as “out of contact” in the Support Roster.

**Stress Level** - suppressed or shaky units don’t make the best Spotters

**Matchup rating** - Depending on how urgently Support is needed, the Matchup rating (see next section “Support Roster”) may be critically important. The Matchup value reflects the difficulty a specific Spotter has in getting in touch with a specific asset and securing permission to use it. A Platoon HQ will have difficulties reaching a Regimental howitzer battery, for example. In fact, in some cases, such requests may be outright denied. If this is the case, then “Denied” is shown in the Support Roster on the affected asset.

Remember, if the Spotter doesn’t appear to be up to the task, another Spotter can be selected. To do this, either deselect the current unit or click on the “X” in the upper left hand corner of the Support Roster. There are no game penalties for checking out how various units pair up with different Assets.

**Note:** A Spotter team can only direct one Support Request/Mission at a time! Once their current Support Request status has entered “Firing”, they can begin another Support Request. If a spotter is already busy directing a Support Request, the support assets will display “Spotter Busy” text over them.

**Note:** This restriction does not apply during Setup Phase: at the beginning of a battle, a Spotter can direct an unlimited number of missions.

### SUPPORT ROSTER

The Support Roster displays all Support Assets available for the current Battle, though only one type (Air or Artillery) at a time. Each Asset is represented by a colored square with these pieces of information:
Both off-map and on-map assets (capable of providing indirect fire support) are displayed.

**Silhouette** - an image of the piece of equipment

**Number of Tubes** - count of how many guns are assigned (aircraft are always “1” per Asset)

**Matchup** - in the upper right hand corner is a symbol representing how well the Spotter and Support Asset are matched for each other. There are five states, color coded as follows: Excellent (green circle), Good (green triangle), average (yellow square), poor (red triangle), and bad (-). The better the match the more efficient and effective the results will be.

**Overheating** - green/red dots indicate how hot the artillery barrels are getting. When all dots go red, the battery has to hold down its rate of fire to no greater than its “sustainable” ROF. Otherwise it is free to use “maximum” ROF (if the mission wants it).

**Designation** - military designation, two lines

**Main Weapon** - primary weapons, two lines

**Mission Status** - when an Asset is being used or is not ready to be used, a line of text appears at the bottom of the Asset display. “Receiving” and “Preparing” indicate the Asset is receiving the details of the requested support mission and is setting up to carry it out. Artillery show “Spotting” when firing spotting rounds, “Firing” when firing for effect, and “Empty” when all ammo has been expended. Additionally, on-map assets may show “not positioned” if they are not set up to deliver fire support.

Aircraft display “Attacking” when actively engaging targets, “Can’t Locate” when it’s failed to find the target, “Coming Around” when it is preparing for another run, and “Landed” when it is no longer available.

If you see “Busy”, the Asset is being used by another Spotter and can’t be interfered with by the current unit. Use the “Go To Spotter” button to switch to the unit directing that Asset to make changes to the Mission.

“Denied” is shown if the spotter is not allowed to use the Asset for some permanent reason. (e.g. a platoon HQ trying to call regimental artillery).

“Out of contact” is shown if the spotter has no C2 link to that asset.

Up to 5 Support Assets can be shown at one time, which is usually more than enough! However, if more than 5 Assets are available in the Battle, then Left and Right “shuffle” buttons are displayed to shuffle between the previous or next batch of 1-5 Assets. Clicking on an Asset in the Roster selects it and makes it activate the Support Panel where some additional information about the Asset is shown. To see another Asset, simply click on it and it will swap in for the previous one. To assign multiple Assets to a Support Request, shift-left-click additional Assets in the Roster. At this point the player is not committed to do anything with the
Asset, thereby allowing “browsing” without any sort of penalty.

**SUPPORT PANEL**

Once a Spotter and an Asset are selected, the Support Panel is activated and ready to turn a request for Support into reality:

The selected Asset is shown on the right side of the Support Panel and contains the same information as in the Support Roster. Below it, however, is new information which shows the munition types and quantities available to that particular Asset. The combination of the Asset Panel and the Ammo Panel represents all the information there is to see for that particular Asset.

The column of labeled buttons in the middle part of the Support Panel are the means of communicating with the Asset. From top to bottom the player clicks on a button, follows the instructions to make a selection, then moves on to the next button. As Parameters are chosen they are displayed to the left in the Parameters Screen. When the last Parameter is set, the player is prompted to “Confirm” the Support Request. This is the player’s last chance to back out of a Request without penalty, for once Confirmed the Request is off to the Asset for processing.

*Note: in general, artillery support ranges for most assets available in the game are more than sufficient to ensure that any target on a given battle map can be reached, regardless of where it is. However, it IS possible for off-map artillery to be “out of range”, if it is something very small like a light mortar and the target is far away from the friendly map edge!*

Depending on conditions, it can take a few minutes or many minutes for the resulting Support Mission to commence.

The estimated delivery time in the Fire Support Mission Request display initially shows the best possible time (usually what you’d get with a “standard” mission). If a mission type other than “standard” is selected, the estimated delivery changes accordingly.

Once a support mission is activated, its estimated time of arrival continues to be updated in the Support View as time passes. Note this is only an estimated time, and the actual arrival can come sooner or later.

Starting from the point of Confirmation, the Spotter and Asset communicate with each other to keep the mission on track. These communications are heard by the player in the form of radio traffic between the two. The exact things said depend on whether the Support Mission involves an Air or Artillery Asset, the type of Mission, and what point the Mission is at.
Adjusting or Canceling Support

Sometimes it is necessary to change a Support Mission’s target or to cancel it entirely. All modifications to a Support mission must be made via the Spotting unit, since Spotter and Asset are linked until the Mission is over. The easiest way to find the Spotter is to select any unit, click the Support Button for the type of Asset you’re looking for, then select the Asset of interest. Assets which are engaged in a support mission are listed as “Busy”. In the Support Panel, the top Parameter button for a busy asset says “Go to Spotter”. Click on that button and the Spotter instantly becomes the currently selected unit, complete with the Target line/s shown.

Now that the Spotter is selected, the Mission can be adjusted or Cancelled in the Support Panel as long as the Spotter and Asset can communicate with each other. If an on-map Asset loses its C2 link to the Spotter, or the Spotter unit is destroyed, the Mission will unavailable for adjustment.

Note: Support units (not only artillery but also air and other assets) in the process of receiving a cease fire command cannot be given further orders until the cease fire occurs. Also, note that missions cannot be “adjusted” while they are still being “received”!

It may turn out to be too little too late, but there are two reasons that CM will abort a Support mission on its own. The first happens if friendly fire is encountered and the friendly have good C2 to the Asset doing the firing. Basically, they will try to get the Asset to cease fire even if the Spotter can not. The second reason is if the Spotter is out of C2 long enough that the Asset wonders if the Spotter is still able to direct fire. In that case it might cease fire on its own simply because it’s a bad idea to fire blind with no feedback. However, in both cases the player is at the mercy of variables falling into place, so neither should be counted on in place of using a Spotter to cease fire when possible.

If the Spotter is incapacitated or killed during a Support Mission, the Asset will usually be unavailable for other Support Missions for a length of time. Depending on the circumstances, the Support Mission may either be eventually canceled or continue to completion.

Clicking on the Adjust button allows the player to redesignate the Target portion of the Support Mission while leaving the rest of the Mission as originally specified. Shifting fire like this is very useful if the target units have moved or more important targets have presented themselves within close proximity to the original Target area. Observed fire should not require Adjustment to stay on Target. That is handled automatically by the Spotter to the degree it can see the Target and has C2 to the Asset.

Artillery Mission Parameters

These are the Parameters for Artillery Missions. Which Parameters are shown for a specific request depends on the chosen support asset (for example, Smoke Missions are only available for assets that actually have smoke ammunition available):

Target - sets the size and shape of the area to hit:
Point Fire - focuses on a single Action Spot or specific enemy unit
Area - one click for the center and one for the perimeter
Line - requires two clicks, one for each end of the line

**Number** - sets the portion of the Asset to use, from 1 to the total number in Asset (usually 2, 3, or 4)

**Mission** - responsible for establishing initial Rate of Fire (ROF) and sustained ROF:

- **Emergency** - no spotting rounds, otherwise like Heavy (not available for pre-planned artillery strikes)
- **Harass** - very slow ROF to conserve ammunition
- **Light** - slow ROF, remaining at slow ROF
- **Medium** - medium ROF, then going to sustained ROF
- **Heavy** - max ROF, then going to heavy sustained ROF
- **Smoke** - medium ROF, firing smoke ammunition to create a smoke screen rather than explosive ammo to damage or destroy the target

**Duration** - determines number of rounds to use per mission:

- **Quick** - 2-4 rounds
- **Short** - 6-12 rounds
- **Medium** - 12-18 rounds
- **Long** - 20-28 rounds
- **Maximum** - exhausts ammo supply

**Type** - sets the munition mix based on the target type:

- **General** - generic setting
- **Personnel** - weights in favor of airburst antipersonnel rounds.

**Note:** Planned artillery strikes as well as strikes ordered on a TRP can airburst if set to a “personnel” target. This simulates the use of timed fuses. Not all shells will airburst, although airburst capability is much more common in modern war titles

**Delay** - establishes when to start the support, prep time inclusive. The options are:

- **Immediate** - no extra delay
- **5 Min** - sets for 5 minutes min
- **10 Min** - sets for 10 minutes min
- **15 Min** - sets for 15 minutes min

### AIR MISSION PARAMETERS

These are the Parameters for Air Missions (which Parameters are actually shown depends on the selected Air asset):

**Target** - sets the size and shape of the area to hit:

- **Point** - focuses on a single Action Spot or unit
- **Area** - one click for center and another click for perimeter

**Mission** - responsible for establishing the scope of the attack:

- **Light** - lighter Munitions
- **Medium** - mix of lighter and medium Munitions
- **Heavy** - medium Munitions with a smattering of lighter

**Type** - sets the munition mix based on the target type:

- **General** - favors unguided HE munitions
- **Personnel** - favors HE munitions

**Delay** - establishes when to start the support, prep time inclusive. The options are:

- **None** - no extra delay
- **5 Min** - sets for 5 minutes min
- **10 Min** - sets for 10 minutes min
- **15 Min** - sets for 15 minutes min
Note: Aircraft in the WW2 setting are no longer controlled by Spotters. Available WW2 Air Support will now prowl the battlefield independently, without the player being able to command them.

**TARGET REFERENCE POINTS (TRPs)**

Target Reference Points are special points on the battlefield which have been “pre-registered” in advance for a support strike. This means that the exact location and distance to a TRP is known to both the spotter and the firing element. Artillery strikes targeted near a TRP (within 50m) do not require LOS from the spotter, do not use or need spotting rounds, and have a near-zero preparation time (however, the “communication” time is unaffected, so don’t expect battleships or corps-level rockets to be on hair-trigger readiness due to a TRP).

Placement of TRPs during setup is not limited to friendly zones.

**Note:** In CMx2, TRPs also double-function as “ambush” markers for regular troops and vehicles. When soldiers fire their weapons at a target near a friendly TRP, they are much better at estimating the range correctly.

**PRE-PLANNED BARRAGES**

Artillery strikes ordered during the Setup-Phase are automatically considered to be “pre-planned barrages”. The game effects are similar to firing artillery near a TRP: no LOS from the spotter is required, no spotting rounds are fired, and there is almost no preparation time.

**ON-MAP SUPPORT ASSETS**

In the Support dialog for indirect fire, on-map assets work just the same as off-map assets. But there are a few peculiarities with regard to on-map support assets that are worth mentioning.

First of all, the player has full direct control over on-map assets, and this means that their actions on the battlefield may make them unavailable to provide fire support; such as when they are on the move and not fully deployed/unlimbered. Also, on-map assets need to be “in command” in order to be able to communicate with the spotting unit. An on-map asset that lacks a C2 link up through its chain of command to a higher HQ with a radio is going to be shown as “out of contact” in the Support dialog.

**Exception:** On-map support assets including mortars and howitzers can fire indirect even if they are out of command & control and lack a radio, provided that either the spotter is within 50m or the support asset is next to a vehicle equipped with a radio.

**Note:** Spotters for indirect support weapons (as well as on-map mortars) are able to target areas slightly outside of direct LOS under certain circumstances, such as when firing indirectly over a tall wall or just behind the crest of a hill.
In addition to providing indirect support, on-map assets are also capable of firing directly at targets. In this case, there is no need to use the Support dialog, and instead the player may give Target and other commands to the on-map asset directly.

**AIR ASSETS**

For modern warfare settings, the player’s interaction with Air Assets is similar to Artillery. The differences between the two are explained below, otherwise it should be assumed the same. For the WW2 setting, aircraft cannot be controlled by player units and will instead act independently of player control.

The player brings up the Air Support Roster by clicking on the Air Support Button in the Interface.

Not everyone can call for air support. In fact, the requirements for doing so on a battlefield are steep, as you require the right equipment and an existing chain of communication to do so. Specialized FO teams called Air Controllers get the best results when ordering Air Support.

Like Artillery, each Air Asset has specific Munitions in specific quantities to use. Unlike Artillery, these dramatically affect the kinds of missions the Air Asset can perform. A P-47D Thunderbolt, for example, can carry a small number of bombs or may be outfitted for strafing runs only. Same plane, entirely different capabilities.

The two words on the right describes the type of plane (e.g. fighter-bomber). For a given type of plane there may be different configurations (bombs, rockets, machineguns). The Scenario Designer simply selects the one(s) he wants for the given Scenario and that is what the player has to deal with. Also, unlike Artillery Assets, the number of planes is always 1 per Asset.

When the player selects an Air Asset in the Support Roster, it appears in the Support Panel like so:

The Mission Parameters and Support Buttons reflect the Air Asset options. Setting up a Mission is identical to Artillery from a user interface standpoint, but different in terms of what options are available and how the Mission is actually carried out. Air Missions require LOS from the plane to the target, possibly the identification of the target, estimate of the target size, and possible customization of the Mission for the scope of the strike. These factors determine if the Mission can be performed at all, how many Attack Runs are made, and which Munitions are used. For example, a P-47D Thunderbolt would probably not drop a 500 lb bomb on a Squad or truck, nor would it make three passes dropping a 500 lb bomb each time.

If the Spotter has LOS to the target and is in communication with the Air Asset, it can confirm the target destroyed, or request that more runs are made if it isn’t. If
there is no communications link, or no LOS, then the Air Asset will have to make this decision on its own.

Accuracy is determined in part by the type and quality of the Spotter and his directions to the air unit. Basically the Spotter increases the chance that a target will be seen and also hit. This is particularly important at night.

Like Artillery, Air Assets have a chance of Auto Cancelling a Mission based on friendly fire risk. Unlike Artillery, this can sometimes happen before even firing a shot. The chance of a “scrubbed” Mission depends on the Spotter type, the quality of LOS between Spotter and Target, as well as proximity to friendly units.

Light and medium antiaircraft guns have the ability to shoot at enemy aircraft to either disrupt or stop attacks. Gun crews that are unsuppressed and not targeting ground units automatically engage attacking aircraft as soon as possible. Heavy antiaircraft guns were not designed to engage fast and low flying tactical aircraft and therefore can not engage enemy aircraft. Small arms, including machineguns, are also never used against aircraft because the chance of success is extremely low while the chance of revealing their positions or being distracted from ground combat is very high.
THE EDITOR

CMx2 provides players with the same tools that were used to create the stock battles and campaign, and allows them to create their own maps and missions from scratch.

The Editor really combines four separate and powerful tools in one:
- **Mission Editor** - settings needed to make a scenario, such as weather variables, briefings, victory conditions and more
- **Map Editor** - creates realistic 3D combat maps from scratch
- **Unit Editor** - purchase, organize, and deploy units
- **AI Editor** - tailors higher level parameters for the computer opponent to follow, such as unit behavior, movement paths, and more

BASIC SCREEN LAYOUT

The picture below shows the basic layout for the Editor.

1. **File Menu** - buttons to Save, Load, and create a New scenario or Exit to the main screen.
2. **Editor Selector** - a pop-up menu to choose the Editor you want to work with. The popup menu also lists additional important features - 3D Preview and Make Campaign, explained later in this section.
3. **Mode Selector** – a list of buttons showing the main Modes of each selected Editor.
4. **Option Palette** - graphical button palette which shows Options specific to the selected Mode
5. **Settings List** - displays values for the selected Option (if any), some of which may be editable (depending on Option).
6. **Toolbar** - tool icons for Map Editor
7. **Display Area** - this is where the 2D overview map is displayed for certain combinations of Editor, Mode and Options.

**FILE MENU**

Displays buttons for:

- **LOAD** - opens dialogue to load an existing scenario file (from the Scenario folder)
- **SAVE** - opens dialogue to name and save the currently active scenario to disc. If the scenario has already been saved before, the current name and save location are loaded as default.
NEW - erases all settings and creates a “blank” new scenario file with all settings reset to their default entries.

IMPORTANT! Don’t forget to first save any existing scenario you have been working on!

EXIT - exits the Editor and jumps back to Main Screen

EDITOR SELECTOR

This pop-up menu displays all available Editors and main functions. The selection made here has direct influence on which Options and Settings are shown, as well as the options available in the Toolbar and Display areas.

MISSION - used for editing mission parameters such as briefings, objectives, time and date, weather and more.

MAP - used to edit terrain features

UNITS - used to organize and deploy forces

A.I. - used to “program” custom computer player AI

3D PREVIEW - used to jump to a 3D view of the current game map

MAKE CAMPAIGN - The creation of a campaign file requires several ingredients:

1. The currently loaded scenario will provide the “core” troops, the mission briefings, and the snapshot data for the scenario choice screen.
2. A campaign “script” text file that designates the parameters and battle .btt scenario files by name.
3. The .btt scenario files for campaigns are created just like any other standalone scenario, but additionally the player imports the “core” troops from the base scenario mentioned under (1) above.
4. The battle files named in the script must be in the same directory as the script file or the Scenarios directory. The finished campaign “.cam” file will be saved in the Campaign directory, overwriting any previous file.

More details about campaigns in the following chapter

MISSION EDITOR

The Mission Editor defines the basic parameters and settings for a given scenario.

DESCRIPTION

When choosing which scenario to play, the player can click on it in the scenario list and see a brief overview to the right of the screen. These details help the player determine which scenario to play without needing to load it. None of these settings have any impact on the scenario itself. Just like any product sitting on the shelf, the packaging simply informs the person what is inside, nothing more than that.

BATTLE TYPE

Specifies the general nature of the battle and who is the attacker. Depending on the nature of the scenario’s storyline you may wish to be “vague”, or even inaccurate, so you don’t give away surprises.
Assault, Attack, Probe, Meeting Engagement

■ ENVIRONMENT

This setting gives the player a rough idea of the nature of the area being fought over. People specifically seeking an urban battle, for example, will know right away that they want to skip over a scenario that is taking place in a Forest.

City, Town, Village, Open, Rough, Forest, Hills

■ DAYLIGHT

Characterizes the average natural lighting conditions. The actual lighting is determined by the time & day settings in the Data section.

Dawn, Day, Dusk, Night

■ BATTLE SIZE

The scenario’s approximate size, from Tiny to Huge, gives players an idea of the overall scope of the battle. Each scenario author probably has a different idea of what Tiny or Huge is, but usually the amount of units involved as well as map size and battle duration should be factored into the setting here. As a general guideline, a Tiny battle involves platoon sized forces, or smaller, for each side and a very small map. A Huge battle involves a force of several companies on each side and a very large map. The rest fall somewhere in between.

Tine, Small, Medium, Large, Huge

■ TITLE

The scenario list is listing scenarios by the text entered here (i.e. the scenario title). Titles should be short and to the point, but catchy, too. When you playtest your game make sure the title looks good in the list.

■ DESCRIPTION

A short one-line description of what players can expect to find when they decide to play the battle. Be mindful that there is no way to customize the text to match a particular side’s perspective, so keep it generic. When you play your scenario you should double check that all your text fits in the box.

■ IMAGE

Each scenario can have, and should have, a small image file associated with it. Think of this as the slick marketing image found on a packaged product. Make something exciting and dramatic, if possible, that gives the player a small idea of the nature of the battle they’re contemplating to play. The file has to be in BMP format and a maximum of 170 x 170 pixels in size. Three buttons allow the scenario designer to:

- Import a new image file
- Export the existing image file
- Clear the existing image file

■ DATA

The Data section defines a number of parameters which, unlike the Description section, do affect the inner workings of the scenario. These settings control:

- Length of Battle - the maximum duration of the scenario
- Variable Length - sets a variable (random) ending time
- Region & Month - sets the month and year
- Day - the day on which the battle takes place
- Hour - at which hour the battle starts
- Minute - minute when the battle starts
Weather - sets the current weather for the battle
Wind Strength - sets the wind strength
Wind Source - the direction from which the wind is originating
Temperature - the temperature during the battle
Ground Condition - sets the general ground condition.
Allied Friendly Direction - sets the direction into which Allied units would withdraw to join their lines
Axis Friendly Direction - sets the direction into which Axis units would withdraw to join their lines
Early Intel - can be set to None, Axis Force or Allied Force.
Intel Strength - can be set between No Intel (0%) to Full Intel (100%) and any step between in 10% steps.
Force vs Force - this setting allows you to create Allied on Allied and Axis on Axis missions in addition to the standard Allied vs Axis. This setting defines what units are available for purchase and deployment in the Units Editor. You may even mix and match forces in this way.

MISSION (ALLIED AND AXIS)
The Mission Briefings seen by the Allied and Axis players at the beginning of the battle are determined/created here. Each sides’ set is unique to itself, but the method for creating them is identical for both. A full Mission Briefing set consists of a strategic overview map, an operational overview map, a tactical overview map, and the text for the briefing itself.

All four files (three image files for the maps and one text file for the briefing text) have to be imported into the scenario file.

Note: Once imported you do not need to include the original files anymore.
The three map images all have to be in BMP (Bitmap) format, but each can have a different maximum size:

- **Strategic Map**: 224 x 224 pixels
- **Operational Map**: 702 x 224 pixels
- **Tactical Map**: 952 x 350 pixels

The briefing text itself is a simple text (.txt) file. A template is used as default for the briefing text when you create a new mission from scratch. It might be a good idea to export the template first, fill in your orders into the template, and then import the completed text.

Note: The ^ tags indicate the end of a section, and should not be removed.

Empty briefing sections are not displayed to the player at all.

The options for the images and briefings are:

- **Import** a new file,
- **export** an existing file
- **clear** (delete) an existing file
Designer Notes are similar to briefings and created in just the same way. The main difference is that Designer Notes are unstructured and allow the scenario author to enter any message he would like both players to see. This can range from tips on how to play, background information (such as the larger historical context of the battle), or even a short narrative to set the right mood.

Parameters (Allied and Axis)

Unlike most wargames, Combat Mission allows “asymmetric” victory conditions where each side has its own unique parameters and is judged based on how well it achieves them. The side that best achieves its goals is declared the winner, even if technically both sides were within specified parameters. You can specify the following conditions for each side:

- **Casualties** - number of casualties the side is allowed to endure.
- **Condition** - number of units allowed to be panicked, routed, tired, or wounded.
- **Ammo** - amount of total ammunition that side is allowed to expend.

For each parameter the scenario designer determines the threshold in % (from 0% to 100%) and the amount of victory points associated with each once the threshold is reached. Specifically, you get the points if:

- **Enemy Casualties > X%**
- **Enemy Condition < X%**
- **Enemy Ammo < X%**
- **Friendly Casualties < X%**
- **Friendly Condition > X%**
- **Friendly Ammo > X%**

Casualties is casualties *suffered*, e.g. 100% means the whole force was wiped out.

Both soldiers and vehicles are factored into this and you get partial credit for immobilizing a vehicle.

Condition is a combination of (from most important to least) morale, fatigue, suppression, and light wounds (more serious wounds or death are part of casualties, not condition).

Terrain Objectives (Allied and Axis)

Each side can be assigned up to 8 terrain based objectives. This involves defining where the objective is, what the player is supposed to do with it, and various other details. These parameters allow the designer to simulate a wide range of missions instead of just the usual “capture the flag” and “king of the hill” objectives commonly found in wargames. To start off, click on the corresponding button labeled Obj 1 - 8, and “paint” the objective area onto the 2D map.

**Note:** there are no limitations in how you “paint” the objective area. You can create a single large area, two or more independent ones, or even sprinkle small spots all over the map. Keep in mind that points for a specific objective are only awarded once and that 10 separate spots for a single objective means that the player must pay attention to ALL 10 spots, not just one. If the mission is to destroy these areas, for example, that means all 10 must be destroyed in order for the player to get points. This can be
difficult to effectively communicate to the player, so be careful when spreading things out. Therefore, generally it is better to make separate objectives for non-contiguous goals.

After determining the objective area(s) you need to specify what the player must do with the area(s) and who knows about it:

**OCCUPY** - friendly units have to move to the area, clear it completely of enemy troops, and remain there when the battle ends

**DESTROY** - the terrain (e.g. building) has to be destroyed/damaged

**PRESERVE** - the terrain must be protected from destruction/damage. This type of terrain objective is probably best suited for buildings or bridges.

**TOUCH** - friendly units have to reach the area and are awarded points immediately upon reaching it. They do not have to remain in place

**EXIT** - friendly units may leave the map (permanently) after reaching this objective. Any friendly unit may use the exit zone. There are no points awarded for leaving the map! Instead, any unit that is part of a Destroy/Destroy All Unit Objective for the opposing player and does not leave the map, is scored as “destroyed” and the points are awarded to the enemy.

**Exit Zones** are a special type of Objective and may be a little hard to grasp at first, since they work differently than the other Objective types. Instead of awarding points directly to troops that successfully exit the map, it is the opposing player that gets points for any units that should exit but don’t. The correct procedure to work with an Exit Objective is to:

- paint a Terrain Objective on the map for Side A
- assign Side A units to a Unit Objective (SHIFT+F1-F7)
- in the editor, open the Unit Objective tab for the opposing player (Side B), set the Unit Objective to Destroy/Destroy All, and assign points
- any unit that is part of the Destroy/Destroy All unit objective has to exit the map. If it doesn’t, then Side B will be awarded full points for the unit as if it was destroyed.

Units leave the map automatically upon reaching the objective area, - usually within 60 seconds of reaching it - they do not need to be specifically ordered to. Units about to exit first display an arrow icon and then simply disappear from the map.

**KNOWN TO...** - player, enemy, both, none

**Tip:** If you do choose to use a hidden objective, it is probably a good idea to make it a secondary goal and one that is still fun even if known (through replay or peeking).

**POINTS** - assign how many points are awarded to the player who fulfills the objective.

**Note:** as mentioned above, Exit Objectives cannot be assigned points, so this option is not available for them. Instead, after creating an Exit Objective, you
would then assign units to a Unit Objective (SHIFT + Function Key F1-F7), open the Unit Objectives tab for the opposing player, set it to “Destroy” or “Destroy All” and assign some points. In this way the opposing player will be denied points if enemy units leave the map that are part of his Unit Objective.

**NAME** - assign a name to the Objective for easier reference (it's also shown to the player on the 3D map and upon completion)

Note: terrain objectives can also be used as Triggers. These special terrain objectives do not count towards victory conditions, do not award victory points, and will not be visible during play. For more information on Triggers, refer to the Plans section.

### UNIT OBJECTIVES (ALLIED AND AXIS)

In addition to (or instead of) terrain based objectives, you can also designate enemy units as objectives. This allows for such things as “destroy all enemy tanks” to be the primary mission and to judge success based on tank destruction instead of other things.

To designate a unit or formation as a scenario objective, you have to first assign it to a “unit objective group” in the Unit Editor. To do that, select the unit or formation and hold down the SHIFT key while pressing a number key from F1-F7. The selected unit(s) will then show a [U] next to its name followed by the corresponding group number you pressed. In order to remove a unit that is already part of a group, select that unit, hold down SHIFT and press F8.

Note: when deploying units in the 3D Preview of the Editor, units that are part of a Unit Objective show a U in the Suppression area of their Team Info Panel, followed by the number of the group they belong to (e.g. U:1 indicates Unit Objective Group 1).

Once you've done this, go back to the Mission editor and select the Unit Objectives Option. Click on one of the buttons for Unit 1 through Unit 7 to set the parameters for that group.

Note: keep in mind that only ENEMY units can be assigned as unit objectives. For example, an Axis unit assigned to Group 1 will be tied to the Allied side’s Group 1 objective, never to the Axis side’s Group 1 objective.

Unit Objectives can be one of three types - Destroy, Destroy All or Spot.

- **DESTROY** - the designated target unit has to be knocked out for full points to be awarded, and damaged for partial points.
- **DESTROY ALL** - the designated target(s) must be completely eliminated for points to be awarded.

Exception: if the enemy has an Exit Zone on the map,
then points are awarded to the opposing player - as if the unit was destroyed - for ANY unit that is part of a Destroy/Destroy All Unit Objective and that does not manage to exit the map on time.

SPOT - the designated target unit has to be spotted in order to be awarded target points.
KNOWN TO... - player, enemy, both, or none
POINTS - assign how many points are awarded to the player who fulfills the objective
NAME - assign a name to the Objective for easier reference (it's also shown in the After Action Report), e.g. "Eliminate enemy tanks".

Note: there are no restrictions with regard to how many and what types of units you may “lump together” into the same Unit Objective. With the exception of Destroy All (which is an “all or nothing” type of Objective) partial points are awarded according to the following rule of thumb: you get some points for each soldier, more points for vehicles, even more for tanks, and less for lighter vehicles.

■ VICTORY CALCULATIONS

Combat Mission calculates the victory level in the following manner (Warning: Math incoming!):

■ STEP 1: DETERMINE V.

\[
V = \frac{A + 10}{B + 10}
\]

where \( V \) = Victory Level, \( A \) = earned Victory Points of the side with the higher score, and \( B \) = Victory Points of the side with the lower score.

In other words, take the Victory Points score of each side, add ten, and then divide the higher score by the lower score. The result is \( V \).

■ STEP 2: DETERMINE VICTORY LEVEL.

The ultimate Victory Level of the victor is determined by \( V \) and also by the percentage of potential Victory Points obtained.

- **Draw**: \( V \) less than 1.25.
- **Minor Victory**: \( V \) less than 1.75.
- **Tactical Victory**: \( V \) less than 2.5 and 30% of potential VP earned.
- **Major Victory**: \( V \) less than 4.0 and 55% of potential VP earned.
- **Total Victory**: \( V \) equals 4.0 or more and 80% of potential VP earned.

The losing side will always receive the opposite Victory Level of the winning side.

So if the winning side receives a Major Victory, the losing side will receive a Major Defeat.

Example: At the end of a mission, the US side receives 700 Victory Points out of 1,000 VP possible. The German side receives 150 VP out of 1,000 VP possible.

\[
V = \frac{(A + 10)}{(B + 10)}
\]

\[
\begin{align*}
A &= 700 \\
B &= 150 \\
V &= \frac{(700 + 10)}{(150 + 10)}
\end{align*}
\]
\[ V = \frac{710}{160} \]
\[ V = 4.44 \]

The US receives a Major Victory, and the Germans receive a Major Defeat. Although \( V \) was over the 4.0 requirement for a Total Victory, the US only achieved 70% of the potential total VP, while a Total Victory requires at least 80 of potential VP be earned.

### MAP EDITOR

The Map Editor is where you design your own maps from scratch by “painting” the landscape in a 2-dimensional top-down view. To see the results of your work in 3D, click on the “Editor Selector”, and select “3D Preview” from the pop-up menu. After you’ve explored the 3D world, hit the ESC key to bring you back to the Map Editor.

The Map Editor consists of three main tools: the Option Selector on the left allows you to choose which features of the map to edit; the Settings Selector allows you to choose a specific type/feature of the selected Option; and the Tool icons on top of the screens allow you choose from several editing modes and “brushes” and change the map’s dimensions.

Note: The exact terrain elements available, such as building types, ground cover, and foliage, will vary slightly based on what date and setting a particular CMx2 game depicts.

### MAP EDITOR OPTIONS

#### MAP OVERLAY

A 2D image of a map can overlayed on the editor map. This is a very handy way to make a map based on a real location. To import an image as an overlay, take a screenshot of the desired map and save it as “special editor overlay” (without the quotation marks). Save it as a .bmp file. Place this image in the Z folder within your game’s Data file. When you start the game, the image will be imported as a map overlay. Pressing the O key will cycle between various states of transparency. The map overlay image will always stretch to fit your 2D map, so when you create the image you will have to crop it to the desired width/height in meters to ensure accurate scaling.

#### ELEVATION

By default the map is perfectly flat and all tiles are set to elevation level 20. You can adjust elevation levels to be anywhere between 0 and 999. Each elevation change represents a height difference of 1 meter.

Note: Maps containing water tiles must have a minimum elevation of 5.

CMx2’s approach to elevations might be conceptually difficult to grasp at first. However, once you get a feel for it you’ll never want to use another elevation editor again! Instead of setting the height of each individual tile, you simply “draw” contour lines like you see on a topographical map. CM then logically slopes the terrain
between the contours so that the transitions are smooth and natural looking. The mechanics are quite simple. There are four different ways to change the elevation of a tile - Direct, Adjust, Adjust All and Clear. You can also set multiple tiles to the same height by keeping the left mouse button pressed as you move the cursor around the map. No matter which method you use, or how you use it, the results are the same. The tiles clicked on turn black to signify that you have “locked” the particular tile to a specific height, which is displayed in white numbers. All others remain in their natural state, showing that they are “unlocked”. All locked tiles remain at the height you specified; all the unlocked ones dynamically change their heights to conform to the placement of new locked tiles. In this way you can specify a crest of a hill and the rest of the terrain will smoothly come up to meet it instead you having to do it all manually.

The Options panel on the left displays the four choices:

DIRECT - set a specific elevation with one click. First choose the desired elevation by using the + and - keys on the keyboard, then click on the map at the desired location. The elevation of that tile changes to the value you specified.

ADJUST - decrease or increase elevations by the amount set using the + and - keys on the keyboard. The default is 5, meaning that if you left-click on a tile with the elevation set to 20, it will be increased to an elevation of 25. Clicking on it again sets it to 30. Left-clicking while holding the SHIFT key decreases elevation by the set amount.

You can also set the adjustment value to 0. This locks a tile to whatever its current height is. For example, if an unlocked tile is 23, you can click on it and it will lock in at 23 without having to manually set the height to 23 using the Direct method. This is useful when you want to establish a fixed base to create a steep hill or valley without changing the surrounding heights.

ADJUST ALL - this allows you to nudge ALL tiles up or down by one level each time you press the + or - key, respectively. This is useful if, for example, you reached elevation 0 on the map but suddenly notice that you need a few lower elevations to finish a canyon. Increasing all tiles by +5 height gives you the needed room while retaining all your hard work map wide.

Note: this option only works when at least ONE elevation has been set by you on the map (i.e. when there is at least one black dot placed on the map).

CLEAR - unlocks a locked tile and adjusts nearby elevations automatically. For example, say you decided to flatten out a section of map that you had previously made hilly. Just clear the locked tiles and it will settle to whatever the surrounding terrain is set to.

Elevation numbers are, by default, only visible in this mode. If you want to see elevations in other map editing modes you can press the “E” key on your keyboard, which places an elevation overlay over the current 2D map display. Pressing E again removes the overlay.
DITCH LOCK - The Ditch Lock is a new editor function that allows slopes between two fixed elevation points to be much steeper than the default slope. Ditch Lock can be used to make narrow terrain features such as ditches and small berms.

To use Ditch Lock, switch to either the Adjust or Direct elevation tools and then left-click on a tile while holding CTRL. The elevation number on the tile will display a blue background instead of the usual black to indicate that its elevations will be steeper.

MAP ELEMENTS
GROUND #1
This tab includes various types of dirt, ground and grass coverage as well as lightly and heavily covered forest floors.

Note: Heavy forest and heavy rocks are impassable for vehicles (regardless if you add trees or not)
- Grass Y: yellow grass
- Grass T: tall grass
- Grass TY: tall yellow grass
- Grass XT: extra tall grass

GROUND #2
This tab includes Mud, Marsh and Water, several types of man-made ground covers, and various types of fields and crops.

Note: Marsh is passable to infantry, albeit slowly. Shallow fords are passable to infantry and vehicles. Deep fords are only passable to infantry.
Tip: to avoid jagged riverbanks, set the riverbank tiles to the same or one LOWER elevation than the water tiles.

GROUND #3
Crops and grapevines.

FOLIAGE
This tab allows you to select a number of different types of trees and three types of bushes.

WALLS/FENCES
Tall stone walls are impassable to any units but can be demolished to create gaps (e.g. with demo charges).
Low walls and wooden fences are passable to a large degree. Infantry simply jump over them, while most vehicles, except the lightest types, are able to move through them. However, the risk for immobilization (throwing a track, blowing a tire) is high.

BRUSH
Adds brush to the terrain tile (can be mixed with other types of ground coverage, especially with Dirt tiles).

FLAVOR OBJECTS
Various small objects to add flavor to a map. The selection ranges from piles of trash to streetlights, telephone poles, carts, rocks, tree stumps and much more.

ROADS
This tab offers several types of paved and unpaved roads, dirt paths, a railroad,
and a multi-lane road

Note: Some road types automatically add a ditch on each side of the road. This can be used as cover for infantry but can also slow down careless vehicle drivers.

- **INDEPENDENT BUILDINGS**

Various types of “special” buildings (commercial storefronts, barns, churches, etc.) designed specifically for the game setting. As the title implies these are intended to be used as independent buildings. “Church” as a small town church or in 3 “building blocks” that can be used to create a large cathedral.

- **MODULAR BUILDINGS**

These are building “blocks” (ranging from 1 story high to 8 stories high) of varying sizes and configurations, and can be used by map designers to put together large building complexes, cities, and other structures.

- **BRIDGES #1**

These are various bridge types. Some bridges may be impassable to vehicles.

No designation means a one-lane bridge allowing vehicles.

- $F =$ footbridge
- $R =$ railroad bridge
- $W =$ wide (i.e. two-lane)

The number is the length of the bridge in meters.

The following weight limits apply to bridges:

- Foot bridges: ...............Infantry only
- Stone one-lane and Stone rail bridges:

  .......................................Medium and light vehicles, and infantry
- Two-lane bridges: .......Everything allowed

- **BRIDGES #2**

Second tab with various bridge types

- **CRATERS**

Different sizes of craters to simulate pre-battle damage:

- $3L -$ 3 small craters (from light calibers)
- $7L -$ 7 small craters
- $15L -$ 15 small craters
- $1M -$ 1 medium sized crater
- $2M -$ 2 medium craters
- $4M -$ 4 medium craters
- $1H -$ 1 large crater (from heavy calibers)
- $2H -$ 2 large craters
- $1S -$ 1 super-sized crater (from a large bomb)

**Placing Large Bridges in the Editor**

The large size of the new bridges can make their proper use in the editor a tricky proposition. Here are some tips for proper placement:

1. Make sure that the map is large enough to accommodate the bridge. Refer to the bridge dimensions listed above to plan your map dimensions ahead of time and avoid unpleasant surprises.
2. Half-sized bridge stubs are useful if you want to depict a famous historical bridge.
as “window dressing” on the periphery of the battlefield without increasing the map size to accommodate the entire bridge.

3. Bridges require an “anchor point” at the end, a 2x2 square of fixed elevation points that will determine how high the bridge stands from the ground. Full length bridges require an anchor point at both ends. Bridge stubs require an anchor point only at one end. Refer to the below picture as a guide.

4. Place the bridge on the map first, and set the elevations and anchor points after you are sure that you will not need to move the bridge.

5. You will probably need to adjust the height of the anchor points several times to achieve the best effect. Check your results in the 3D editor to ensure that no bridge structures (other than the supporting columns of course) are sinking into the ground. If they are, raise the elevation of the anchor points to make the bridge sit higher off of the ground.

- **LANDMARKS**

Identifying key terrain features in the Briefing helps the player associate what he is tasked to do with where he is supposed to do it. To help tie these things together you can place text “landmarks” to indicate, specifically, where something is. For example, you can identify a prominent hill as “Hill 586” and note in the Briefing what the player is supposed to do with “Hill 586”. To place a landmark, first click on the tile you want to label. A pop-up window opens with a text field to enter the name of the landmark. Note that this name is visible to both players, so it is generally a bad idea to make the landmarks too side specific if you intend on the scenario being playable from both sides. If you find you don’t like the landmark you put down, or see that it is in the wrong place, click on it in the 2D map to select it and then choose Delete.

**Note:** if you want only one side to see a map label, use Objectives instead (see the chapter about the Mission Editor)

- **SETUP ZONES**

Allows “painting” of up to three setup zones per nation, labeled Allied 1, 2, 3 and Axis 1, 2, 3 respectively. Zones are used to restrict how much the player can customize his starting locations. For example, allowing the attacking player to set up in the same spot as the defender would not be a good idea. Likewise, allowing the defender to put some snipers or AT teams in the middle of the attacker’s assembly area isn’t likely to win you any friends from people who play as the attacker!

Setup zones do not have to be adjacent, meaning that you can create one large zone, two or more independent zones, or even sprinkle spots all over the map. Units located within a specific zone during the Setup Phase of a battle can be moved to all spots of that same zone number, no matter where they are. So if you create two Zone 1 spots on the opposite ends of the map, a unit can jump from one spot to the other without restrictions during the Setup Phase, as long as it is placed on a spot with the same zone number.

**Note:** units placed by the scenario designer outside of a Setup Zone during deployment cannot be moved at all by the player during the Setup Phase.
MAP TOOLBAR

The Map toolbar at the top of the screen is always visible when the 2D overview map is shown. The tools contained in the bar allow you to quickly access four functions:

- **Object Rotation**
  Most objects which can be placed on the map, such as buildings, road tiles, walls etc. can be rotated in one of four directions before placing them on the map. The four arrow buttons indicate the currently selected direction.
  You can also change the rotation by holding the CTRL key and right-clicking (it doesn’t matter where you click). Repeat this until the rotation direction you want is selected (the current selection is always indicated by a depressed button).

- **Draw Tool**
  The draw tool is the diagonal arrow located between the rotation arrows and the paintbrush. Using this tool, you draw a road or wall across the map with only two clicks of a button.
  To use the draw tool, you must have a linear terrain feature selected (roads, walls, fences, and the like). Select the draw tool, and then left-click on two tiles in the map editor. The terrain feature will be automatically created between these two points.

- **Paintbrush**
  The “brush” with which you can “paint” terrain/objects on the 2D map is set to one of four sizes. The smallest size paints only one terrain tile per click, while the biggest level paints a rectangle of 15 by 15 tiles per click. Left-click applies the currently selected terrain to the area covered by the brush, right-click removes it.
  **Note:** Not all objects are eligible for different brush sizes. Most terrain types are, but, for example, Buildings or Flavor Objects are not. Additionally, Flavor Objects can only be placed in 2D view, but they cannot be deleted by right-clicking (since they are not visible in 2D view). You have to go to the 3D Preview to delete Flavor Objects.

- **Map Zoom**
  The 2D map can be set to any one of five different levels of magnification by clicking on the corresponding button. The left most button is max zoom in, the right max zoom out. The middle zoom level is the default. If the map view is zoomed in, then the view will scroll when you move the cursor to the screen edge.

- **Map Width & Depth**
  Sets the dimensions for the playable area of the current map. Two “boxes” are available, one for setting the width and the other for setting the height.
  In order to adjust map sizes, you use one of the four buttons available per “box”.
  Obviously the + buttons increase the size, while the - buttons decrease map size.
  Each click increases the map by 32 meters.

**Note:** By pressing and holding the SHIFT key while
clicking on one of the buttons, the increase (or decrease) is 160 meters.

What might be less obvious, but is logical once you think about it, is that the placement of the buttons also indicates the direction into which (or from which) the map is increased (or decreased). You just have to consider which axis is being lengthened or shortened, and the +/- pairs are then formed to affect each end of that axis.

The left/right arrows indicate that the west/east side of the map is affected. So pressing the plus on the left adds space to west. Similarly the minus on the right removes space from east.

The top/down arrows indicate that the north/south edge are affected. So the plus and minus on top affect the northern border of the map, while the plus and minus in the bottom do it for the southern border.

Maps can have a maximum total surface area of 18 kilometers squared (4248m x 4248m if shaped as a perfect square). No side can be longer than 8,000 meters. The ratio of the length and width of the map must be 10:1 or less.

**UNITS EDITOR**

The Units editor provides all the tools to create Orders of Battle for both Allied and Axis sides. On the left is a list of options arranged logically, from top to bottom, in the order generally used to create a typical Order of Battle. First, you purchase units for a side, then you assign reinforcements, and lastly you deploy those units in the 3D environment.

The main screen layout consists of two columns in the main display area. On the left is a list of all the Available Troops that can be purchased for the specific and currently selected “Branch” (sub category of a side’s units). On the right is the Activated Troops display that shows all the units you’ve “purchased” for inclusion in your battle. At the bottom of the screen are various options to tweak the data for a whole formation or a specific unit.

**PURCHASE UNITS**

When purchasing units for your battle, you first MUST start by buying a Formation. Until you buy a Formation, most of the choices and functions of the Purchase Screen remain inaccessible.

**FORMATIONS**

Formations are a very important concept to both gameplay (which is not directly relevant here in the Editor chapter) and scenario making. Most of Combat Mission’s formations are based on authentic historical Tables of Organization and Equipment (TO&E) for the various forces used in the game. Every single individual unit belongs to a single formation, which in turn may (or may not) be a part of another formation. A formation isn’t a unit itself, rather just a container for either units or other formations. For example, a Rifle Squad is a unit typically found in a Platoon formation, which itself usually belongs to a Company formation.
After you purchase a formation you can then “delete” the specific units/formations you don’t want. This might seem a backwards way to do things, but really it is quite necessary. If you bought units on their own they would have no formational context. Since such context is very important to gameplay and realism you’d then have to go through a complicated process of attaching units to each other, possibly in ways they never would be in real life. Therefore, it is much easier to start with the correct formations attached to each other and simply toss aside the units and formations you don’t want.

All units are organized by Force type and then secondarily to a specific Branch of that Force (e.g. US Armored Infantry, German Panzergrenadiere, etc.). When you select a Force, a list of the available Branches appears below. Selecting one of these shows what the Available Troops are for that particular Branch. You are allowed to mix and match units from Forces and Branches as much as you like, no matter how unrealistic it may be in real life.

**Note:** for Quick Battles, the Purchase Screen does impose certain restrictions with regard to the available forces.

Each line under Available Forces represents a unique, purchasable formation. At first glance there doesn’t appear to be many choices since you initially see just the tip of the iceberg. Next to every formation name is a small + icon which allows you to “expand” it to show attached formations and units. By default, all formations start out “collapsed” in order to minimize the amount of space used in the display. To expand a formation, all you have to do is click on the “+” icon. Once expanded, the icon turns to a “-” icon which, when clicked, collapses the formation again.

To “purchase” a unit, doubleclick on it or, alternatively, single-click to highlight the formation, then click on the Purchase button. Either way, once a formation is purchased it moves to the Activated Troops column and is immediately available for use in the scenario. However, it is highly unlikely you’ll need all the units of the formations you purchased. Therefore, in the next step you’ll probably want to remove formations and units that aren’t necessary for your battle.

**Note:** Purchase and Rarity points are shown in the Editor to provide guidance on balanced force compositions for Scenario Authors, but play no other role. A “+” after the purchase point value indicates a “lowest case” value for certain formations.

Removing units is very easy. In the Activated Troops list, simply select the formation or individual unit to remove and then click on the Delete button. The unit name grays out showing that it is no longer available for your battle. If at any time you change your mind, not a problem. Simply highlight the formation or unit and hit the Revive button to reset them.

You can also Rename units in the editor. When you rename a unit that is not a formation (e.g. squad or vehicle), the name change applies to that unit’s leader (e.g. “Smith”), otherwise it applies to the unit itself (e.g. “Task Force Baker”).

**Specialist Teams and Individual Vehicles**

After purchasing one or more formations, you can then switch the display to Specialist
Teams or Individual Vehicles if you would like to “cherry-pick” specific units that are not part of the pre-defined (historical) Table of Organization & Equipment. These units are automatically attached to the (already purchased) Formation that is currently selected in the Activated Troops list.

This option is mainly intended for Quick Battles, but it provides the scenario author with a quick and uncomplicated way to modify the game’s TO&E to his liking.

■ SOFT FACTORS

Each unit has certain “soft” data that can be adjusted if desired. Soft factors are those elements that are, more or less, variable from unit to unit regardless of type. Most of these are related to the soldiers themselves, not the equipment they have assigned to them. You can see what the soft factors are by clicking on a unit or formation and looking at the popup options at the bottom section of the screen.

Of course you can adjust these settings individually as well, e.g. if you want more control or want to simulate a specific historical person or unit. What follows is a description of the various values and parameters used.

EXPERIENCE – determines the experience and training level of the soldiers of the formation. Options include:

- **Conscript**: draftees with little training and no combat experience whatsoever.
- **Green**: draftees with little training and some combat experience or reservists with some training and no combat experience. Green can also represent professional soldiers whose training is substandard in comparison to another force.
- **Regular**: professional soldiers who went through extensive, quality training programs, but lack combat experience. Or, Regular can represent troops that received mediocre training that have a fair amount of combat experience.
- **Veteran**: professional soldiers with standard military training and first hand combat experience. Alternatively, it can be professional soldiers who have trained to a slightly higher standard than Regulars, yet lack combat experience.
- **Crack**: exceptional soldiers with more than the average training and plenty of combat experience.
- **Elite**: the best of the best. Superb training, frequent combat experience, and generally all around tough guys.

MOTIVATION – determines the soldiers’ will to fight. Options range from Fanatic (soldier will never give up and fight even when facing certain death) all the way to Poor (soldier has little desire to fight and will take the first chance to rout).

FITNESS – determines the inherent degree of physical readiness of the unit’s soldiers. This influences on how quickly soldiers tire and recover from physical tasks, such as running or being bombarded by enemy fire. Options include: Fit, Weakened, and Unfit.

LEADERSHIP – the capability and experience of the unit leader does not always correspond with the quality of the unit. This rating allows a unit to range from great soldiers and terrible leaders, or terrible soldiers and great leaders. The values are from -2 to +2, indicating the leader’s influence on the unit cohesion and various other capabilities.

SUPPLY – determines the amount of ammunition and other equipment available to the unit at the start of the game. Options include Severe, Scarce, Limited,
Adequate and Full.

**HEADCOUNT** – this setting allows to simulate formations with casualties from previous combat.

**VEHICLE STATUS** – changes a Vehicle to be immobilized, knocked out, burning, or dismounted from the very start of the game. Transport vehicles (such as halftracks and trucks) set to “dismounted” will appear as Ammo Dumps at Elite skill level or higher, while at lower skill levels their ammunition stores will be automatically distributed among units in the same formation.

■ **TYPICAL SETTING**

For all of the above settings except Vehicle Status, the option “Typical” is also available. This choice randomly sets the value to be a typical (historical) value for the selected formation and the selected timeframe. Typical is the default setting for all options and is a good way for the scenario designer to get some variety for his scenario without having to adjust each and every unit individually.

■ **PURCHASING EQUIPMENT**

At the bottom edge of the screen is a display for selecting specific equipment options, depending on which formation is selected in the Activated Troops list. Some formations allow you to determine the type of equipment that they are going to field for the battle, such as different tank or vehicle or gun types. For example, if you select a US Armor formation, typically you will be able to determine which models of Sherman tanks will be appearing in the battle.

This menu is highly context sensitive and dynamic, depending on which formation or unit you highlight in the Activate Troops list. Sometimes you can select an individual squad and several choices will appear here, sometimes you can select a Battalion HQ and select the equipment for the entire formation with a few clicks.

In addition to different equipment, you can usually also determine here if you want indirect weapons such as guns, howitzers or mortars appear on the map, or be available as off-map support assets only.

The choices made here may affect the point value of the formation that they apply to. This is why the points listed under Activated Troops may differ from the “typical” point values shown under Available Troops for the exact same formations.

■ **EQUIPMENT DROPDOWN MENU**

You can adjust the equipment selection individually for each unit (this can be tedious, especially if you are making a scenario with a lot of units), as explained above, but you can also use the Equipment Dropdown menu to apply general (randomized) settings to entire formations as you purchase them. The Equipment Dropdown menu is located on the left side of the screen underneath the Formation/Specialist/Vehicle selection menu. You can determine units to be in Poor condition or Excellent condition and several steps in between. Depending on the setting, your formations will be already prepopulated with vehicles and weapons accordingly. One choice includes a “Typical” setting, which uses the historically “correct” values for that unit and that specific time period.

■ **REINFORCEMENTS**

Up to seven groups of units per side can be designated as Reinforcements from the Available Units list, irrespective of their parent formation. This allows the sce-
nario designer to have units enter the battle at some later and/or (more or less) random point in time. The units of each Group enter the map at the same time, but the entry location is set individually for each unit using the Deploy function. Staggering units can help with early game unit congestion, enhance the plot of the scenario, or simply spice things up.

The first step is to assign units to a Reinforcement Group by highlighting them in the Available Units column and pressing a key on your keyboard (not on the NumPad!) from 1 to 7. This assigns the unit(s) to the respective Reinforcement Group, and a small [R] followed by the number of the assigned Group appears next to its name. For example, [R1] means the unit is assigned to Reinforcement Group #1. To remove a unit from a Group simply highlight it and press the 8 key and you’ll see the designation go away.

Once you have at least one unit assigned to one Group you can specify when it comes into the game. To do this, click on the Group you want in the list on the left side of the screen. For each group, you can set the time of the earliest arrival, and determine a random time span within which the arrival time might deviate.

**Note:** when deploying units in the 3D Preview of the Editor, Reinforcement units show an R in the Suppression area of their Team Info Panel, followed by the number of the group they belong to (e.g. R:1 indicates Reinforcements Group 1).

- **Earliest Arrival Time**

This specifies the soonest a Group appears on the battlefield (for example, 5 minutes after the begin of the battle, or an hour, or more).

- **Arrival Span**

Can be set to be Exact (no deviation, i.e. the unit will always arrive exactly on the time set above) or a value between 5 and 30 minutes in 5 minute intervals. Specifying a time determines a range which is added to the Earliest Arrival Time.

**Note:** be careful of what you do here since there is a chance for significant unintended consequences. For example, if a 60 minute battle has Earliest Arrival Time set to 30 minutes and the Arrival Span to 30 minutes, the reinforcement group might arrive anytime between 30 seconds after the beginning of the battle and one second before its end. Or, if you set Earliest Arrival Time to 60 minutes and the Arrival Span to 10 minutes, then the reinforcement group will never arrive (because the battle will end before the arrival time).

- **Deploy Units**

This feature switches you from the 2D Unit Editor to the 3D Preview map so you can position the Available Units in the exact spot, orientation, and stance you want. This applies to Reinforcements as well, regardless of when they come into the game. You can do all sorts of things, such as loading units into vehicles,
deploying heavy weapons so they can fire immediately, etc.
The Group(s) a unit belongs to (if any), such as Reinforcements, or AI Plans, is shown in the main interface bar at the bottom of the screen, inside the Suppression indicator (e.g. A:5 indicates AI Group 5, R:1 indicates Reinforcement Group 1, and so forth).

If you created Setup Zones they are shown on the map. A unit in a Setup Zone can be moved freely within that particular Zone during a game’s Setup phase. Units placed outside of a Setup Zone can not be moved by the player until after the game starts.

Note: pay extra attention to where Reinforcements are placed in order to avoid unrealistic situations, such as units suddenly appearing in the middle of a field or a spot that is likely to be occupied by the other side. It might be a good idea to have Reinforcements appear in a place out of sight of enemy troops in order to allow the other player a chance to move them before getting shot at.

Deployment Commands

During Deployment mode, a limited number of Commands are available for each unit type, mainly related to administrative tasks.

MOVE, FACE, HIDE, ACQUIRE, DISMOUNT, DEPLOY WEAPON, SPLIT TEAM, ASSAULT TEAM, ANTITANK TEAM

Note: The Target command is available during Deployment mode in order to check LOS from units.

Artificial Intelligence (AI) Editor

Most Artificial Intelligence (Computer Player) systems in games are based on highly scripted, reactive behavior. The scenario designers program very specific instructions for even the most basic behavior, often to the point of “if the enemy moves here, attack, otherwise don’t do anything”. The game play tends to be quite predictable over time and potentially easy to fight against because the designer has to correctly anticipate what the player will do.

Other game AIs, including the one in the previous Combat Mission series, are dynamic AIs that act and react on the fly. Since its behavior patterns are more generic, it is more flexible when playing a specific mission/battle. Unfortunately, the same generic attributes preclude the Computer Player from taking advantages peculiar to the battle being fought. The designer can set up a perfect double pincer envelopment and watch the AI decide to conduct a frontal assault instead.

CMx2’s Computer Player is a sort of hybrid of scripted and dynamic systems. The scenario designer has the ability to customize the higher level, and to some extent lower level, behavior specific to the tactical considerations of the battle. However, the AI can improvise, to some extent, within the designer’s parameters. This greatly reduces predictability, but more importantly it allows the AI to conform to the story of the battle. If the battle’s story revolves around an ambush or a convoy to move along a certain road, such crucial elements can be “coded” into
the scenario to make sure they happen.
The scripting aspect of CMx2 is also critical for coaching the Computer Player on how to win. For example, if the defending Computer Player needs to defend a set of buildings inside a city, the designer can specify which key spots should be manned in order to ensure the success of a more abstract victory condition. No matter how good a dynamic AI may be, practically speaking it will never equal the insight the designer has without some very specific help. Therefore, think of the scripting as the designer helping the AI understand what it needs to do, where, and how.

**AI Elements**

There are four distinctly different concepts that create a decent Computer Player.

**Groups** - a collection of units (CMx2 allows up to 16 Groups per side)

**Map Zones** - areas of the map for Groups to focus on (up to 16 per Plan)

**Orders** - basic instruction sets for a Group (up to 16 per Plan)

**Plans** - overall coordination of Groups, Orders, and Zones (up to 5 Plans per side)

Units are assigned to Groups to concentrate on geographical Map Zones using various Orders to direct their behavior. Plans specify which Groups use what Map Zones with which Orders. The Computer Player only ever uses one AI Plan for a scenario, however it can use different Plans (if they exist) each time the scenario is played.

Once a Computer Player’s Group reaches an Order’s Map Zone, it begins to look at the next Order (and associated Map Zone) if one exists. The computer player decides when to “move on” to the next Order by looking at two time points set by the author, and the condition of its troops.

These concepts are identical for both Allied and Axis sides, however the elements can be used in different ways in order to simulate the different behavior patterns, doctrinal approaches to combat, etc. of each side’s simulated force. The importance of each specific element varies from scenario to scenario, side to side. However, generally a good Computer Player comes from equal attention paid to all four elements.

A scenario can have a Computer Player for either or both Axis and Allied sides. However, if the designer did not specifically create a Computer Player for a side the units for that side will simply sit wherever they start out and do nothing. Therefore, the scenario designer should make sure to mention in the briefing that a scenario is supposed to be played from a specific side only.

**Groups**

A Group is a collection of units (squads, teams, guns, and vehicles) assigned to perform tasks together. Each Group acts independently of other Groups using Orders it receives from a Plan. Because there is only one Plan in use during a scenario there is no risk of Groups getting contradictory instructions. This means the designer must be quite sure of why various units are in one Group and not another, because if the assignments aren’t sensible then the Orders are less likely to produce desirable results.

All units are assigned to Group 1 by default, unless specifically assigned to Groups 2 through 16. To assign a unit to a Group, go to the Unit Editor’s Purchase Units
option, select the unit or formation by clicking on it, then use F2-F8 keys to set the Group number to 2-8. To assign the unit or formation to Groups 9-16, press the F1-F8 keys twice in succession: F1 twice for Group 9, F8 twice for Group 16, and so on. Units assigned to Groups 2-16 have their Group number appear to the right of their name as [A2] through [A16]. To reassign a unit to a different Group, simply repeat the process with a different numbered F key. To have an assigned unit return to Group 1, highlight it and hit F1.

Note: when deploying units in the 3D Preview of the Editor, units show an A in the Suppression area of their Team Info Panel, followed by the number of the AI group they belong to (e.g. A:2 indicates AI Group 2).

**Map Zone**

Map Zones are “painted” on the map, much like a Setup Zone or a victory Objective area. Each Order can have one, and only one, Map Zone assigned to it. The shape and size can be as regular or irregular, small or large, and you can even generate separate discontinuous areas, but they are still considered part of the same map zone. That doesn’t mean it is necessarily a good idea to make huge, crazy shaped Map Zones, just that it is possible. Generally the more “creative” the Map Zones are, the less likely Groups will behave as desired. Therefore, it is usually better to break up larger concepts into smaller pieces and assign different Groups to each with their own Orders and Map Zones.

Note: Each Order must have a Map Zone assigned to it. Orders without Map Zones are simply ignored by the AI. If you want a unit to remain stationary, simply copy the Map Zone from the previous Order in the Plan. The unit will not move.

The composition of the Current Group should be kept firmly in mind to make sure that the Map Zone isn't too small or too big for the number of units, the distance too great, the type of terrain unfavorable or even impassable, and so forth.

It is very important to keep in mind that the Map Zone is the desired END ZONE and not the path. The TacAI determines, based on a Plan's Orders and tactical Commands, how to get from one Map Zone to another. A Group will NOT follow a long and skinny Map Zone; it will simply move all its units onto it and stop before moving onto the next Order's Map Zone. If you want to influence the path a group of units takes, issue several orders as you would waypoints.

**Orders**

Each Order consists of a single instruction for a specific Group to follow. The specified Map Zone is the destination and the Order represents the method to get there. This is an important concept to fully grasp since doing the opposite, treating the Map Zone as the start of the Order, will likely doom a Plan to failure. An order consists of four parts (not including the Map Zone), except for the first Setup Order, which only has three (as explained further below).

**Order Type**

**Dash** – basically this is an “everyone run for the hills” option that should be used very rarely. Make sure that the distances are fairly short or the units are vehicle
only, otherwise they will likely exhaust themselves before reaching the specified Map Zone. It is also wise to make sure the Group isn’t likely to fight along the way since the units won’t be predisposed to doing that. Use Dash for things like getting units to move quickly from one major source of cover to another at maximum speed, such as across a dangerously exposed road or field.

**Quick** – emphasizes speed over combat, but to a lesser extent than dash. Units will attempt to get from A to B as quickly as possible but not at all cost, and not at maximum speed. Units may stop and return fire occasionally, but are generally unlikely to do so. Quick is useful when covering medium distances that you want to cross quickly but without completely tiring out the units, and when enemy contact is unlikely but not impossible.

**Advance** – this is the “happy medium” between Dash and Max Assault. This is generally the best Order to use when moving from place to place and not specifically anticipating a big fight. Units instructed to Advance decide what they should do, but generally it is to keep moving after taking some shots at spotted enemy units.

**Assault** – this order emphasizes combat over movement. Units ordered to assault will generally interrupt their movement when facing the opportunity to engage the enemy, but will not remain stationary for too long. This is the best order to use for advancing while in contact with the enemy at medium to longer distances.

**Max Assault** – the opposite of Dash, Max Assault tells the Group to stop and engage with maximum firepower whenever each unit sees an opportunity to do so. This is generally a poor choice for getting a Group to stay on the move if a lot of enemy is expected in the vicinity. It can also be a bad idea if the area being moved over is a poor place to stop for a firefight. The best use is for short moves where there is good cover and enemy activity is highly expected.

**Note:** computer infantry units can demo-charge their way through walls and bocage if their “next” movement order (set by the author in the AI editor) is close by (30m or less, generally). It works best to place one movement order destination on the near side of the wall/bocage, and the next just on the other side of the wall/bocage.

### SETUP ORDERS

The very first order of each plan is a Setup Order. It works exactly as other orders with one big exception: the Map Zone for the Setup Order defines the area where units begin the game, not where they need to move to. As such, the Map Zone is NOT the End Zone as for all other regular orders. Therefore, Setup Orders have no option for “Order Type” since the units do not have to move anywhere.

The AI does not break the rules. If you paint a Map Zone for a Setup Order outside of a valid Axis or Allied Setup Zone (as defined in the Map Editor), the AI will never setup there. Therefore, make sure that your Map Zone for Setup Orders for the AI plan matches a valid Setup Zone in the Map Editor. To make this easier, Setup Zones are always shown on the 2D map when you select a Setup Order in the plan.

**Note:** landmines assigned to AI groups number 2 and higher move into the AI groups’s painted setup zone
**Occupy Buildings**

This option tells the unit which floor to occupy if it enters a building. If a unit is not inside a building, this option has no effect.

**Stance**

This option defines the basic behavior and combat posture of a unit for a given Order.

- **Cautious** - shoot only when a clear target presents itself and don’t get too worked up when one does. This helps conserve ammo and limits how much the Group makes its presence known to the enemy.

- **Active** - shoot early and shoot often. This is generally the best option when the Group is being tasked with assaulting a known enemy position.

- **Ambush** - instructs the units to only open fire if the enemy closes within a specific distance. Several distance options are available, from 75m to 1000m.

- **Ambush Armor** - functions like Ambush, but unit will only open fire if armored vehicles come within a specific distance.

- **Hide** - just as it sounds! This instructs the Group to avoid doing anything that might attract attention, such as moving or shooting. Units that get shot may return fire, but other units in the Group will try to remain hidden.

**Passenger Status**

This option tells infantry carrying vehicles (and bunkers) to Dismount its passengers or keep them Mounted. Keep in mind that this option is activated BEFORE the designated Map zone is reached! If you want to dismount after reaching a map zone, you will need to create one Order for getting there mounted, and then a second order (with or without a Map Zone) to dismount on location.

*Note: There is no way to instruct the AI to Mount units once Dismounted due to the complications of coordinating vehicles and infantry (real life military units train for months to get this right!). Practically speaking, it would be rare to see infantry units get into and out of vehicles multiple times within the scope of a Combat Mission battle, so it is less of a limitation than it may initially appear to be.*

**Plans**

Plans are the glue that holds together Groups, Map Zones, and Orders. They act as “scripts” for the AI to follow, but not in the traditional FPS/RTS sense in which tactical behavior is tied to trigger points, patrol routes, etc. Instead, it is a set of behavioral instructions just like in a real military formation. For example, the “script” doesn’t say “Tank 231 goes from this point to this point and then tries to shoot here”, rather it says “Tank 231 will try to move through this area and shoot at any threats it sees”. The actual tactical moves and decisions the unit makes are left up to the TacAI, which means they are context sensitive decisions.

When the player starts to play a scenario, Combat Mission selects one semi-randomly chosen Plan to be used for the duration of the battle. This allows the Computer Player to be unpredictable each time a scenario is replayed, yet still...
follow specific instructions made by the scenario designer. Or not!

You can create multiple Plans for Combat Mission to randomly choose based on weighted values. A Plan with “Used Sometimes” is two times more likely to be chosen than “Used Rarely” while “Used Frequently” is four times more likely to be selected. If a value is used more than once then the chances of selection of the others is adjusted so these ratios are maintained. Alternatively, the Scenario designer may choose to make only a single Plan for a particular side, thereby guaranteeing that one Plan is always the one used.

To create a Plan, and its components, select one of the five possible Plans from the list in the user interface to the left. The first popup menu controls the chance that the selected Plan is going to be used in a battle. The second popup menu designates which Group is considered the “Current Group”. When selected, existing Orders assigned to that Group can be seen and manipulated, and new ones can be created. The third popup controls the Current Order for the Current Group. The first of the 16 possible Orders is always Setup. New orders can be added by clicking on the Add button, existing orders can be deleted by clicking on Delete.

To copy a Plan, select the Plan that you desire to be copied, and press CTRL-C to copy it. Nothing will happen visually, but the plan has been copied. Next, select another Plan that you wish to overwrite, and press CTRL-V. A window asking for confirmation will appear. Select OK to copy the Plan. Copying Plans is very useful when you want to just use variations of a single Plan, without having to tediously recreate all of the waypoints for the AI Groups.

Note: Plans need to be tested by the designer in order to make sure they work as expected. However, since CM randomly chooses a Plan it is difficult for the designer to be sure of debugging a specific Plan if there is more than one. To overcome this, simply change the chance of the desired Plan happening to “Used Frequently” and the others down to “Not Used”. Just remember to change the values back to whatever it is you want before sending the battle off to be played by others!

EXIT BETWEEN ... AND ...

“Exit Between ... and ...” tells the AI Group at what scenario time to leave their current Map Zone and when to arrive at the next Map Zone.

The first number tells the Group to stay at the current Map Zone until the specified scenario time is reached. With this setting a Group never moves on to the next Order before the specified time is reached.

The second number defines the latest time that an AI Group should arrive at it's next Order, and causes the Group to try very hard to get to the next Order in the plan before the specified scenario time is reached. This does not mean the Group will do it, just that it will try. If it has taken excessive casualties, is immobilized or heavily engaged, it may blow the set time. It will still attempt to execute the next order in the plan, just not within the time that the scenario designer allotted for it.
Note: the time set in “Exit between ... and ...” is absolute scenario time and not a duration. “1:00” means “one minute after the beginning of the scenario”, and NOT “one minute after the last order”.

You can increase the “jumps” for the time settings by holding the SHIFT key while you click on the + or - buttons.

**Example:** Exit Between 5:00 and 10:00

These settings mean: the units in this Group will remain executing the current order (at the current Map Zone) for 5 minutes after the beginning of the battle. They are not allowed to leave sooner. After 5 minutes, the units are free to begin leaving the Map Zone and start executing the next order in the plan. They do not have to leave immediately, however, before 10 minutes scenario time pass they really should be gone.

Note: all of a Plan’s Orders are saved into the scenario file even if there are no Groups assigned to it. This allows the designer to move, remove, redo, and otherwise manipulate units and Groups without worrying about wiping out work done on a Plan prior to the changes. Obviously, if no Groups are assigned to an Order none of the Order’s actions are carried out in the game, so there isn’t any point of creating Orders that have no Groups, though there is also no problem if unassigned Orders are left in the file since the Computer Player simply ignores them.

### Correct Timing

The AI editor lets you coordinate various orders and groups in a plan to some degree through the use of the “Exit between ... and ...” time settings. These can be a little confusing when first working with them.

In short, the first number instructs the group to keep executing an order until that time in the scenario, while the second number instructs it to leave a Map Zone and move on to the next order in the plan before that time is reached. The two main sources of confusion often are:

- the time settings are absolute scenario time, not relative “duration”. This means that the time needs to be adjusted accordingly for each order within a group’s plan to reflect the time passed in the scenario.

**Example:** If you want two orders to be executed for about 5 minutes one after the other, then Order 1 is set to Exit Between 5:00 and 5:30, and Order 2 should be set to Exit After 10:30. Notice that this will not GUARANTEE that the second order is executed for 5 minutes.

- the times are merely guidelines for the AI. The AI will attempt to stick to the time plan, but not at all costs. Combat effects, fatigue, and other factors may make the
AI blow the schedule. The AI will still proceed with executing each order within a plan, one after the other, but may disregard the schedule set by the scenario author. This is more true for the second time setting than the first time setting to some extent. After all, it is easier to simply sit in place for a certain time than to move out exactly on time.

Note: the more strictly you set the timing for a plan, the higher the chance that the AI won't be able to remain on schedule. Setting the “Exit Between ... and ...” times for an order very close together is asking for trouble. While it may work reasonably well early in the plan, as you get to the later stages, you should set the times further and further apart to account for the unavoidable delays and keep at least some level of control. If you don’t, then the AI will simply ignore your schedule altogether.

You do not HAVE to use the “Exit Between ... and ...” settings! Simply leaving them on default will mean that the AI completes one order after the other without delay, as fast as the given order and the combat situation and condition of the troops allows. In fact, for the majority of situations this may be just the right setting!

### Triggers

Sometimes you will want an Group to act based on battlefield conditions rather than set times. This is achieved with the use of Triggers. You can tell a Group to “Wait For” another Group to execute an Order or to “Wait for” a unit (enemy or friendly) to touch a Trigger Objective. The same basic principles apply to both Order and Objective type Triggers, however you will probably find some situations where one type works better than the other.

What Triggers can not do is provide alternate commands. AI Orders are still followed one-after-another without branching. Triggers simply allow you to control when the next Order executes based on the Trigger parameters you choose.

#### Setting up a Trigger

Triggers are always set up first and then linked to specific Orders. A Trigger can be used by as many Orders in as many Friendly Groups as you want, but an Order can only be assigned to use one Trigger. Setup can never be used as a Trigger and the last Order of a Group can never be triggered.

For an Objective Trigger you must first designate a Terrain Objective on the map, then choose what sort of unit can trip it. You can choose between friendly or enemy and either any type of unit or only armored ones.

For an Orders Trigger you must identify a specific Order (Setup is not an Order) in a friendly Group and change the popup just below the Order Number to “Can Trigger” from “Not Trigger”.

Now that you have a Trigger specified you need to instruct one or more Groups to use it. Find the Order you want to wait for a Trigger and click on the “Wait For...” button at the bottom of the Orders panel. When you do this a dialog appears with a popup menu that shows all the Triggers you have made. Select one and
it becomes the active Trigger for that Order.

**EXIT BETWEEN TIMES**

The first thing to understand is how the "Exit Between" times affect tripping. The first time tells the AI to NEVER start the Order until that time even if the Trigger is tripped. The second time tells the AI to NEVER start the Order later than that time even if the Trigger is not tripped. The time period between the first and second settings is when the Order is paused waiting for the Trigger to be tripped.

If you want a Group to always wait for a Trigger to be tripped leave the first timer to 00:00 and set the second timer to something greater than the scenario’s maximum game time. If you want a Group to give up on a Trigger if it isn’t tripped by a particular time (a failsafe) then leave the first timer to 00:00 and set the second timer to the time you have in mind. Sometimes you will want a Group to wait until a specific time even if the Trigger is tripped, in which case you set the first timer to that time. If the Trigger is tripped before then the Group will start executing it’s Order only when the first timer’s time is reached. If it hasn’t been tripped by then the Group will remain idle until either the Trigger is tripped or the second timer’s time is reached (whichever happens first).

**THE TRICKY PART**

While setting up Triggers is fairly straightforward, getting them to do what you expect is not necessarily as easily done. The more complex your Plan is, the more interdependent Groups are to each other, the more challenging it is to get the results you want. This section tries to get you started on the right path.

The most important, and definitely most difficult, concept to understand is which Order to select as the Trigger. The natural inclination is think of Triggers being tripped when an Order is complete (i.e. the units arrive in the painted area). This is not how it works. Instead a Trigger is tripped when the designated Order starts, not when it ends. Which means if you want to key off of units arriving in the painted area of Order 5 you must select Order 6 as the Trigger, not Order 5. While this may be counter intuitive to us Humans, to the computer it’s solidly logical and there are very good reasons for it.

The second most common source of error is having two or more Groups use Triggers to “leap frog” each other. This can definitely work, however designer error and/or unforeseen game events can cause a huge chain reaction that stops your AI from functioning. For example, you could find Group 2 waiting for Group 3 which is waiting for Group 4 which is unexpectedly waiting for Group 2. This error is commonly called “circular logic”. Careful use of the Exit Between timers can limit the damage, but keeping things simple is an even better way to go.

Combining Objective and Orders Triggers can produce some sophisticated behavior if done right. For example, Group 2 Order 4 waits until Objective Blue is tripped by enemy armor, at which point it starts a wide flanking action using three additional Orders. Order 6 places the units in a key spot which signals that Group 3 should begin its own movement. In which case Group 3 would be set to trigger off Order 7 so that it starts it’s attack when Group 2 is at the key spot.

**TIP!** In the event that you want the last action of an Group to be a Trigger (which it can not be by default) you can fake out the system. Create your last
Order to do whatever action it is you want done, then create a new last Order with the parameters to be the same as the previous one and no painted objective zone. Then go back and assign a Trigger to the previous Order. This allows the last meaningful action of that Group to act as a Trigger even though technically it’s not it’s last set of instructions. That’s because the actual last Order is nothing but a repeat of the previous instructions.

TIP! There is no explicit way to instruct a Group to face after completing an Order. However, you can “paint” the rearward destination 1 Action Spot further than you want them to go, then create a new Order and paint the Action Spot where you want them to end up. What happens is the units move past where you want them to wind up, end that Order, then start the new Order which requires them to turn around and drive “forward” towards the enemy by 1 Action Spot. If you do not use Exit Before/After time variables then the progression from one Order to the next will be seamless.

**SUPPORT TARGETS (ALLIED OR AXIS)**

The scenario designer can specify Support Targets for the Computer Player’s artillery and air support to use at the beginning of the scenario. Such artillery strikes represent preplanned bombardments for a side controlled by a Computer Player. If a Human player is in control of a side the designer’s assigned Support Targets are simply ignored.

When Support Targets are specified, all Artillery and Air Support Assets allocated to that side’s force are considered available for the AI to use. The only requirement is that a valid spotter have line of sight (LOS) to the designated target(s) in order to initiate the strike. All normal support rules apply such as C2 links, delay times, etc. Artillery and Air Support Assets not used against the Support Targets are available for the AI to use during the regular course of the battle.

Up to 20 independent Support Targets can be designated. Simply select a target number and paint the zone to be fired at in the 2D map. Zones can be any size, contiguous or disjointed, though practically speaking it is best to keep in mind the actual amount of assets available. If one target zone covers half of the map, but the side only has a battery of two measly 82mm mortars available that are low on ammo, don’t expect an earth shattering map-covering artillery strike. Instead, it is more likely that the AI spotter will randomly pick one place out of the entire zone and pound it until the mortars are empty.

Each target can be assigned one of three possible missions. These determine the intensity and duration of the strike:
Destroy - heavy intensity, long duration. Issue this type to cause maximum damage. Available assets, ammo, and size of the target area are especially critical here. A couple of 60mm mortars aren’t going to level a city block, for example, but 4 batteries of 155mm Howitzers certainly can!

Damage - medium intensity, medium duration. Good for a quick, devastating shock to a particular area. Good balance between ammo conservation and damage.

Suppress - low intensity, short duration. This is best used for harassing fire or to pin an enemy force down to allow friendly on map units take advantage of the situation.

Preplanned strikes arrive at the beginning of a scenario, but not always immediately in the first few seconds. Normal C2 delays apply. Each target is attacked in order, and if multiple assets are available, several targets can be attacked simultaneously.

Any support assets that are not used up for the pre-planned bombardments are available for the AI Player to use dynamically during the battle as long as it has what it needs to call in a strike (e.g. proper spotter, adequate communications links, etc.). In other words, the AI Player is bound by the same rules as the Human Player, as explained in various sections of this manual.

3D PREVIEW

The 3D Preview displays the battlefield in 3D mode, which can be useful for spotting possible issues with terrain, elevations, or the overall look of the map. It is also good for getting a feel for how to set up the AI’s Orders and Plans. Additionally, Preview mode allows the direct manipulation and fine-tuning of certain map aspects which cannot be accessed from the 2D Map Editor, such as buildings and Flavor Objects.

EDITING BUILDINGS

In 2D mode, you choose the basic building types and determine their placement on the map. The actual look of the building is determined randomly from a number of options specific to each type of building. However, these automatically assigned attributes can be overridden and customized, if desired.

CMx2 features two major types of buildings - modular buildings which are more generic building “blocks” that can be up to 8 stories high and are made to be arranged into various shapes and forms, and independent buildings that are more specific in their design, and, as the name implies, usually are not combined with other buildings. The two buildings types differ in some details as far as how they work in the editor.

MODULAR BUILDINGS

For each side and each floor of each building the texture, number of doors, and number of windows can be set. If the wall is exposed it can have a balcony of one sort or another. The type of roof can be changed as well, provided that alternative roofs are available for the building.

One of the more interesting, and powerful, features is the ability to completely remove walls by toggling through the “window/door layouts” until the wall disappears. This allows adjacent buildings to be combined into larger structures, such as a massive warehouse or L shaped house. Since individual walls on individual floors
can be removed, it is possible to have a building complex that is open on some levels and closed on others, or 3 stories in one section and only 2 in another section. The tactical possibilities created by this feature should not be overlooked!

**Note:** If modular buildings are placed directly adjacent to each other, windows and doors will automatically be removed from the adjoining walls, leaving them blank.

In general, each of the following clicks and key+click combinations toggles through the available options for each building in succession.

- **Single Wall**
  - CTRL-CLICK on a side changes window/door layout for wall
  - CTRL-SHIFT-CLICK on a side adds balconies for that wall

**Note:** for upper levels without balconies, door configurations are skipped except when the camera view is inside the building. This makes it easier to set up “interior” walls between immediately adjacent buildings.

- **Single Side**
  - CTRL-SHIFT-CLICK on ground floor adds balconies to all floors on that side

- **Entire Building**
  - ALT-CLICK changes window/door frames for all four sides
  - SHIFT-CLICK changes the buildings texture for all four sides
  - CTRL-CLICK on roof changes shape/type of roof (if available)
  - ALT-CTRL-CLICK changes the windows/door layout for all floors on the same side of a building
  - ALT-SHIFT-CLICK cycles through stages of major damage to building, starting at a blown-out roof, progressing through blown-out upper levels, to complete rubbling.

- **Independent Buildings**
  Individual buildings largely work like modular buildings, with a few notable differences: the window and door layouts are fixed and cannot be changed, and no balconies can be added. The following key+click combos apply to Independent Buildings:
    - CTRL-CLICK on a side/roof changes cycles through stages of pre-battle damage for floor/roof
    - SHIFT-CLICK changes the buildings texture for all four sides
    - ALT-CTRL-CLICK cycles through stages of major damage to building, starting at a blown-out roof, progressing through blown-out upper levels, to complete rubbling.

- **Editing Flavor Objects**
  The placement and rotation of Flavor Objects can be finetuned in 3D Preview mode. After placing a Flavor Object in regular 2D mode in the general area where you would like to have it, you can “nudge” it into position and also rotate it to achieve realistic placement. You can also precisely place a flavor object by ALT-left clicking on it, and then clicking on the desired destination.

This is done through a combination of keys and mouse clicks, as follows:

- **LEFT CLICK** - rotate object
- **SHIFT+LEFT CLICK:**
  - nudge object in the direction the camera is facing
- **ALT+LEFT CLICK** - Select object for precise cursor placement
- **CTRL+LEFT CLICK** - delete object
MAKING CAMPAIGNS

New Campaigns for Combat Mission are technically quite easy to make, however since they require many custom made battles it can be somewhat time consuming to put together because each individual battle takes a fair amount of effort to make.

A Campaign is a semi-dynamic string of individual battles linked together. Each battle for a Campaign is just like every other scenario made in the Editor, save one major feature: a common pool of units imported from a central “core units” file. This allows Combat Mission to track individual units from battle to battle, which in turn allows the results of a previous battle to have a direct effect on those that come later.

At the heart of a Campaign are two sorts of battles; primary and branches. Primary battles are those that represent the optimal path from start to finish. If a player wins each battle these are the only ones that are played. Branches are those battles that the player is diverted to after failing to win the previous battle. There is a great deal of flexibility as to how these features are used, enabling campaign designers to customize the structure of a Campaign to conform to a particular “plot”. In fact, the campaign does not have to branch at all if that is what the designer wishes to do.

Note: in theory you can create loops in the branching structure, by directing the player to a scenario he played previously, e.g. after a loss. While this is possible, please keep in mind that any damages and changes to the map from the previous fight are not saved. This means that destroyed buildings from the first time through are magically rebuilt, craters filled in, burning vehicles removed, etc. Therefore it might be a good idea to avoid such loops for the most part.

It is possible to have units tracked from battle to battle on both sides. However, this is not recommended in general since it means the same two forces face each other battle after battle. That’s not very interesting! Plus, with the high casualty rate typical for World War Two frontline engagements, it is unlikely that a significant portion of the Core Units would survive more than a few battles. Still, it’s an available feature and players are welcome to experiment with it if they want.

CORE UNITS FILE

This is a regular scenario file that does nothing more than provide a common pool of units to draw from and certain elements needed to present the Campaign to the player. It is as simple as purchasing some units and setting up the mission information (briefings, title, etc.). Combat Mission ignores everything else so don’t worry about the map, unit placement, etc.

Battles within a Campaign can use units that are not in the Core Units File, therefore it is only important to put units in here that are central to the story. For example,
if the Campaign revolves around a single Rifle Company and a Tank Platoon, you don’t need to put in an Engineer Platoon or a Cavalry Platoon that are only used once. Such auxiliary units which don’t make an appearance in more than one battle can be added into any scenario normally using the Unit Editor as one would for a stand alone battle.

One very important thing to keep in mind is how CM tracks units from battle to battle. When a formation is put into the Activated Units column of the Unit Editor (i.e. purchased) unique identification numbers are assigned to all the units within it. This allows CM to know that Tank 1234 in Battle #1 is the same Tank 1234 in Battle #2. After a unit appears in the Activated Units column it can be manipulated, such as having a unit’s Experience changed or deleting a formation so it isn’t available, just like in a normal scenario. These changes can be undone or redone as often as desired. However, these changes are not automatically incorporated into existing battles for the Campaign. To have such changes registered each existing scenario file must be “synchronized” with the Core Units File in order to bring those changes into existing battles (see below).

### SCENARIOS (BATTLES)

There is nothing inherently different between scenarios made for a Campaign and those made for stand alone use. Maps, AIs, Mission Parameters, etc. all have to be created just like any other stand alone battle. The only significant difference is that some (or all) of the units from one (or both) sides can be imported into a scenario so that they carry through from battle to battle. Also, it is not necessary to make the small 170x170 picture that represents the scenario in the Battle selection dialog because it is ignored.

Importing units is quite easy. Create a new scenario in the Editor, choose the Units Editor, and then select the “Import Campaign Units” option. An open dialog appears so the Core Units File can be located and selected. Once confirmed, all the units in the Core Units File are imported into the current scenario file.

The next step is to whittle down the Core Units to those needed for the current battle only. Often this is a small subset of the total units found in the Core Units File. Select the Purchase Units option and look in the Activated Units column. All Core Units are there with a notation that they are, indeed, Core Units. To remove unwanted units simply do what is done for any other scenario: select the unit, or formation, and select the Delete button in the lower left corner. This toggles the unit “off” so it won’t appear in the battle at all. It can be toggled back “on” at any time, like a normal scenario, by repeating these steps. Additional, non-core, units can be purchases at any time as in any other scenario.

From time to time changes may be made to the Core Units File that require synchronization with existing Campaign battles. This is generally an extremely easy and painless thing to do. Just open up the scenario file and Import Campaign Units again. Core Units already in the scenario retain almost all of their customization, such as placement, Group assignments, Orders, etc. Therefore, synchronizing with the Core Units File does not wipe out hard work! What it does do is remove units no longer in the Core Units File, imports newly added units, and updates attributes (such as names, experience, etc.). The latter is probably the only potential drawback of synchronizing since customized settings like that must be redone.
Note: any formations completely removed from the Activated Troops list in the scenario will reappear and must be deleted again (if that is still desired). This is to make sure deleted formations can be brought back in if the designer changes his mind after removing them. It’s very important to know this, since reintroduced formations appear in default positions in the 3D environment automatically, which can create a rather “interesting” game experience until it is fixed in the Editor.

### Campaign Script File

A group of completed scenarios are just that until you use the *Compile Campaign* feature. In order to do that, though, a Campaign Script File must exist. This is a TXT file which Combat Mission uses to understand which battles are fought when, what the conditions are for going to the next one, and how much the units should be refreshed between battles.

The script is quite simple. The first part is the Campaign Header to help CM set up the Campaign as a whole. The first variable specifies which side the Campaign is played from (Allied or Axis), if a Human Opponent is allowed (No or Yes), the text shown to the Allied player after the last battle (Victory and Defeat), and the text shown to the Axis player after the last battle (Victory and Defeat).

What follows are a variable number of Battle Entries, one for each Battle in the Campaign. Within the first section of the Battle Entry is the scenario file name, the minimum victory level needed to win, the scenario file name to go to after a win (blank signals end of Campaign), and the scenario file name to go to after a loss (blank signals end of Campaign).

Campaign scripts can specify a minimum and maximum overall campaign victory level based for any battle that ends the campaign. Normally, to signal the end of a campaign, the [NEXT BATTLE IF WIN] and/or the [NEXT BATTLE IF LOSE] fields are left empty. However, any of the following list of keywords can optionally be entered there instead, signaling both the end of the campaign and either a minimum required overall campaign victory (if following [NEXT BATTLE IF WIN]) or a maximum allowed victory (if following [NEXT BATTLE IF LOSE]). This is most useful for “early ends” to campaigns where you want the final score to reflect the fact the early end of the campaign more than the success or failure of each battle along the way. Note that each keyword must start with an underscore.

- `_total defeat`
- `_major defeat`
- `_tactical defeat`
- `_minor defeat`
- `_draw`
- `_minor victory`
- `_tactical victory`
- `_major victory`
- `_total victory`

The next section in the Battle Entry is the percentage chance an individual unit has
of being completely replaced if lost, repaired if damaged (vehicle only), topped off with full ammo, and brought back to a fully rested state. If the Campaign contains no Core Units for a particular side, there is no need to fill in that side’s variables.

Note: the very beginning of a Campaign starts out with a special Campaign Briefing. This is identical to a normal battle’s briefing, complete with Operational Order and maps. CM looks for this information in the Core Units File, which should be loaded when the Campaign is compiled (see next section).

Here is a sample of a two battle Campaign Script with dummy values inserted:

/*
Note the characters before and after this text. They allow designers to put in comments, or notes, such as why something was done a certain way. Anything between these characters is ignored by Combat Mission. Otherwise an error will occur when the Campaign is compiled.
*/

// Alternatively two back slashes can be entered to create a comment. There’s no functional difference between this method and the previous mentioned method.

/* Campaign Header*/
[PLAYER FORCE] blue   // options are: blue/red
[HUMAN OPPONENT ALLOWED] no  // no/yes

[BLUE VICTORY TEXT] You won!
[BLUE DEFEAT TEXT] You lost!

[RED VICTORY TEXT] You won!
[RED DEFEAT TEXT] You lost!

/*Battle #1*/
[BATTLE NAME] My First Little Battle  // note, do not include “.btt”, just the file name
[WIN THRESHOLD] tactical victory  // total defeat, major defeat, tactical defeat, minor defeat, draw, minor victory, tactical victory, major victory, total victory

[NEXT BATTLE IF WIN] My Second Little Battle  // a blank signals an end of the campaign

[BLUE REFIT %] 20  //always express this a number between 0 and 100
[BLUE REPAIR VEHICLE %] 40
[BLUE RESUPPLY %] 70
[BLUE REST %] 80

[RED REFIT %] 10
[RED REPAIR VEHICLE %] 10
[RED RESUPPLY %] 50
[RED REST %] 60

/*Battle #2*/
[BATTLE NAME] My Second Little Battle

[WIN THRESHOLD] minor defeat

[NEXT BATTLE IF WIN]  // end campaign

[NEXT BATTLE IF LOSE]  // end campaign

[BLUE REFIT %] 20
[BLUE REPAIR VEHICLE %] 40
[BLUE RESUPPLY %] 70
[BLUE REST %] 80
Compiling a Campaign

A Combat Mission Campaign consists of a single file (with the extension .CAM) that contains all the information the game needs to play a Campaign from start to finish. The single file format ensures that it can be transported from person to person without missing pieces. It also ensures that players can’t cheat by opening up individual battles in the Editor to peek or alter elements to make it easier to win.

Note: This means the person making the Campaign must keep the individual battles or forever lose the ability to make changes to the Campaign!

Compiling a Campaign is technically quite easy, however mistakes in the Script File are easy to make and that probably means a couple of failed attempts are likely. Not to worry, though, since Combat Mission gives useful feedback about what the mistake is that is preventing a compile from happening.

Before starting, put all the files for the Campaign into a single directory. The Core Units File doesn’t have to be in the same directory, though it does help keep things tidy. Once this is done, do the following things in this order:

1. Enter the Editor
2. Load the Core Units File
3. Click on the Editor selection popup menu and choose “Make Campaign”
4. A dialog comes up that gives some reminders of what is about to happen.
5. When you click on Make Campaign, an Open Dialog comes up and asks for the Campaign Script File.
6. Select the Campaign Script File and click “Open”.
7. If the Script File contains no errors, a new file, with the .CAM, extension appears in the Campaigns directory. The file name is taken from the currently open scenario, which should be the Core Units File.

Note: if there are errors, a dialog pops up and says what the problem is. Simply make the correction needed and repeat the steps above. Since CM stops and reports the very first error it detects, each error requires a fix and another compile attempt.

Once a Campaign is successfully compiled, it must be located in the Campaign directory, in the Game Files folder, in order for Combat Mission to offer it as a choice in the Campaign option within the game. Campaign files received from other people also need to go into the Campaign directory in order to be available for play. The size of a Campaign file is directly related to the size of the combined scenario files that are compiled. Therefore, Campaigns tend to be several megabytes in size.
CREATING QUICK BATTLES

Any regular scenario can be turned into a Quick Battle Map. In order to be picked for a Quick Battle, the .btt file needs to be placed in the Quick Battle Maps folder in the game directory. Theoretically you can simply copy an existing scenario into that folder and see what happens. Unused settings or features (such as any units on the map) are simply ignored. Practically, there are a number of additional points to consider when copying maps or when creating them from scratch.

Setup Zones

Quick Battle Maps MUST have valid Setup Zones for Axis and Allied sides. Without valid Setup Zones units of both sides will probably end up right on top of each other. Not fun!

AI Plans

Quick Battle Maps MUST have an AI plan for BOTH sides. You can use more than one plan and you can use as many groups in each plan as you like. The AI player will randomly assign units into groups.

Note: Since nobody knows which units will be taking part in a given Quick Battle, it makes sense to create AI plans in a much more generic way than for regular scenarios.

Victory Conditions

Quick Battles consider only OCCUPY terrain objectives and unit casualties for determining victory conditions. All other objective types and parameters are ignored. All terrain objectives are converted to OCCUPY objectives automatically, and all Units are part of a force-wide UNIT objective.

Quick Battle scores are determined differently than in Missions. The total point value is automatically set to 1,000 VP. Out of the 1,000 VP available, a portion will be allocated to the OCCUPY terrain objectives and the remainder of the VP will be assigned to the UNIT objective.

The ratio of VP awarded for terrain objectives versus casualties will vary based on the type of battle, with Meeting Engagements awarding the least VP for terrain objectives and the most VP for unit casualties, and Assaults awarding the most VP for terrain objectives while de-emphasizing unit casualties.

The relative VP values of the terrain objectives in a Quick Battle is determined by the relative VP values that the map designer assigns to each of the objectives.

For example, if a designer creates three terrain objectives, and gives one of the objectives 500 VP while giving the other two 250 VP each, then in every Quick Battle on that map, the first terrain objective will be worth twice as much VP as either of the other two. The ratios of the VP's values are important, not the actual VP values themselves!

Axis and Allied Sides are interchangeable in QBs. An Axis Attack scenario can be picked for an Allied attack QB, and the game will automatically switch sides for the players.
**UNITS ON THE MAP**

Any units placed on a QB map are simply ignored and deleted, and will not appear in the QB.

**TERRAIN**

The type of terrain you set for a map determines when it will be available for a QB. If a player wants to play a city map QB, only maps defined as city maps will be available for him.

**BATTLE TYPE**

Probe, Attack and Assault maps are selected when either of these options is selected for a QB. Meeting Engagement maps are only selected when the player chooses to play a Meeting Engagement scenario.

**Note:** Assault maps automatically provide a certain level of intel to the attacking player about the defender's positions (as one would realistically expect).

**MODS**

**Note:** Mod Tools are only available for the PC version at this time.

Two Mod Tools (RezExplode and RezPack) are included in the Mod Tools directory. Both programs work with “.brz” files, which are “packed” data files containing the individual sounds and graphics used by Combat Mission. For simplicity, we'll refer to the contents of a “.brz” file - the sounds and graphics - as “resources”. These contents are not normally visible, but can be extracted using RezExplode.

RezExplode takes a “.brz” file and “explodes” it into its individual resources (for example, “.wav” files for sounds and “.bmp” for graphics). These individual resources can then be edited or replaced by you.

RezPack takes the resources that you have modded, and “packs” them back into a single “.brz” file. This is not only convenient, but allows users to (de)activate a “mod pack” easily by moving a single “.brz” file into or out of the CMx2 “Mods” folder.

Inside the main Combat Mission folder is a folder called “Data”. Here is where all the sounds and graphics for the game are stored. You’ll see files with names like “Version 100.brz”, “Version 101.brz” and possibly others. This is not, however, where you will be putting your mods. To mod CMx2, you’ll use RezExplode to access the contents (resources) of the “.brz” files that ship with the game (like “Version 100.brz”), then edit the ones you want, and then use RezPack to recombine your modded versions of the sounds and graphics into a new “.brz” file that you will name. These “.brz” files are then put into the Mods folder (for PC users, this is located in the My Documents folder; for Mac users, it’s inside the app package under Resources) to activate the mod.

**LOADING ORDER**

When Combat Mission starts up, it loads all the .brz files it finds in the Mods folder, as well as the My Documents/.../User Data folder. However, it is possible that a given sound or graphic (say, “tank texture.bmp”) might be contained in more than one .brz file, and the two files might be different despite having the same name. Combat Mission has a method to ensure that the “latest” version of a sound or
graphic is always the one used by the game: the .brz file name that is LATER in alphabetical order is given priority. For example, if “tank texture.jpg” is contained in both “A.brz” and “B.brz”, the version contained in “B.brz” will be used, and the one inside “A.brz” will be ignored. Similarly, “Version 101.brz” takes priority over “Version 100.brz” because it comes later alphabetically.

As you explode the .brz files that come with the game, you’ll notice some duplicates of various texture graphics and such. The reverse-alphabetical loading order allows later-version .brz files to take priority over the earlier ones. This is important because you want to make sure that your mods get priority over the sounds and graphics that ship with the game. See below for further details.

**REZEXPLODE**

To access the contents of a .brz file, COPY it into the “input” folder inside the RezExplode folder. Now run RezExplode by double-clicking it.

There is no user interface. Just wait a few moments until an “exploded” folder appears. Inside there you’ll find the contents of the .brz file you just exploded. The files inside the “exploded” folder are the ones you’ll want to consider modding, and later repacking using RezPack.

**REPACK**

When you have finished modding the sounds or graphics you want, you can package them back up as a new .brz file. Copy your modded files into the “input” folder inside the RezPack folder. It is OK to copy nested folders here - RezPack will dig down into the folder hierarchy to find all your modded files.

Run RezPack. There is no user interface. Wait a few moments until a “packed.brz” file appears. You should rename this file as you wish. It is ready to be moved into Combat Mission’s “Data” folder (see section below for details).

RezPack also creates a file called “log.txt” or “log error.txt”. Inside this file you’ll see some useful information. If the file is called “log error.txt”, it means that you accidentally packed two or more resource files with the same name (inside different nested folders) and the log file will list these “conflicts” at the top of the file. You will likely want to remove all but one of the conflicting files and run RezPack again. Also contained in the log.txt file is a list of all the resource files you packed, and the nested folder hierarchy (if any) they came from.

**MODS IN ACTION**

Now that you have created your mods as .brz file(s), it is time to see them work inside Combat Mission. Here is the easiest way to be sure that your mod files get loading priority over the files that ship standard with Combat Mission.

First, note that any enclosing folder names are included with file names in the alphabetical priority comparison for loading. Now go inside your My Documents/../User Data/Mods folder and create a new folder called “Z”. Because “Z” comes after the names of the standard game files (“Version XXX”) you are guaranteed that any mods you put into the “Z” folder will be loaded and used by Combat Mission.

Second, note that among the .brz mod files you create and put into this “Z” folder, the alphabetical rule still applies within that folder. So if you have “MyMod1.brz” and “MyMod2.brz” files both inside the “Z” folder, data from “MyMod2.brz” will take priority over “MyMod1.brz” for any duplicate contents.
You may also place single *non-brz* files into the Mods folder (such as individual WAV or BMP files). Combat Mission can recognize individual BMP or WAV files even when not packed into a BRZ file. This is not recommended when creating a “mod pack” for use by others because dozens or hundreds of individual files are difficult to manage, but it can be useful while you are creating your mod, and want to test out small edits. Individual files are given loading priority over ALL .brz files regardless of how they are named.

**IMPORTANT**

Don’t remove the “Version XXX.brz” files from the Data folder. The loading-priority system will ensure that your mods are used when present.

Don’t monkey with the contents of Combat Mission’s Data folder EVER. The proper place to put your mods is inside the Mods folder inside the appropriate My Documents directory (e.g. /My Documents/Battlefront/Combat Mission/..).

Mods you create and pack as .brz files do NOT have to replace (or include) all the contents of whatever .brz files you originally “exploded”. You should RezPack ONLY the resources you modded, and Combat Mission will locate the others in their original .brz files.

Please note that while you are invited and encouraged to make and distribute mods for CMx2 so other players can enjoy them, the selling of mods or including them in compilations which are then sold is prohibited by the End User License Agreement.

A good place to share your mods is our Battlefront.com Repository at www.battlefront.com/repository
TRoubleshooting

While we are taking utmost care in preparation of this software to avoid bugs, today’s myriad of available systems, software and hardware configurations makes it impossible to guarantee 100% compatibility. Below you will find a few known issues as well as a list of contacts available to help out.

An up-to-date Troubleshooting Guide is also available at our webpage:
http://www.battlefront.com/helpdesk

- ANTI-VIRUS/SECURITY SOFTWARE

Our games are encrypted in order to protect them from hackers. This encryption can, depending on your anti-virus/security software settings, trigger so called “false positives”. This happens e.g. when you allow your software to flag unknown code (so called “heuristic scanning”) - being encrypted, our software is more likely to be considered “unknown” than unencrypted software.

All of our games include so-called Digital Certificates with Battlefront.com, Inc. as the publisher. If you see this, then you do not need to worry that the software may be infected, and can safely adjust your anti-virus/security software settings and/or whitelist the falsely identified file(s). If you don’t know how to do this, then you can contact your anti-virus software vendor, and we also list a few handy tips in our Knowledgebase at http://www.battlefront.com/helpdesk.

- “VIRTUAL MACHINES”, PROCESS SNIFFERS, DEBGERGERS...

These types of software/developer utilities, while sometimes useful and having their legitimate uses, are used by hackers to decompile program source code. Our software is protected against these types of intrusions, and will refuse to launch if it detects access attempts. Not all such tools are transparent to the user; for example, some Anti-virus software packages use virtualization technology (e.g. “Virtual Keyboard” or “Sandboxing” tool). If the game does not launch, please first make sure that you do not have any utilities of this kind running.

- MULTI-GPU

On certain systems with multiple video cards a known bug prevents players to select units occasionally. Turn off the additional video card(s) to solve this problem.

- MULTIPLE VIDEO CARDS (SLI) VERY SLOW

If you are running multiple nVidia video cards running in SLI mode, download the latest Forceware drivers (169.21 at least).

- UNITS DISAPPEAR WITH SHADOWS ON

This problem seems to affect people with certain combination of newer (8000 series) GeForce cards and various OS and video driver combinations. Until Nvidia releases a new set of Forceware drivers that specifically address this problem, simply play the game with shadows disabled (use Alt-W to toggle shadows on or off).

- LEVEL OF DETAIL

CM:BN tries hard to keep up framerates and will automatically downsample textures, and adjust model quality, and level of detail calculations if it detects performance limits (VRAM used up etc.) This may lead to a subpar graphics quality during gameplay. Often it is a better idea to manually adjust the model and textures quality downward in the Game Options Menu, leading to better overall look and faster framerates.

- INTRO VIDEO

If you would like to disable the intro video playing at game launch, hold down the “V” key at game startup. This is a toggle and remembered for future launches. If you want to bring the video back, simply keep “V” pressed again during the next launch.

Tech Support

- BUGS

If you run into a bug, or have problems in running or installing the game, please visit our Tech Support forum at:
http://www.battlefront.com/community

If you do not find a solution to your problem there, please post a support ticket at
http://www.battlefront.com/helpdesk

- PATCHES

Please also do not forget to check regularly for the latest patches to the game at:
http://www.battlefront.com/patches

You can also do an auto-check to find out if your version of the game is up to date. In your (PC) Start>Program Group or (Mac) game directory, you will find a link called “Check for latest version”. Clicking
the link will automatically compare your currently installed version of the game with the latest version available for download, and the results will be displayed in your browser.

■ LICENSING
For problems with licensing or unlicensing the game, please refer first to the Knowledge Base at: http://www.battlefront.com/helpdesk
If you do not find a solution to your problem there, please “Submit a support ticket” there.