GAME MANUAL

WARGAME of the YEAR EDITION

COMMAND
MODERN AIR / NAVAL OPERATIONS

USENET WotY-2013 GOLD

GROGHEADS READERS' CHOICE AWARD WINNER

matrix games

WarfareSims.com

EPILEPSY WARNING

PLEASE READ THIS NOTICE BEFORE PLAYING THIS GAME OR BEFORE ALLOWING YOUR CHILDREN TO PLAY.

Certain individuals may experience epileptic seizures or loss of consciousness when subjected to strong, flashing lights for long periods of time. Such individuals may therefore experience a seizure while operating computer or video games. This can also affect individuals who have no prior medical record of epilepsy or have never previously experienced a seizure.

If you or any family member has ever experienced epilepsy symptoms (seizures or loss of consciousness) after exposure to flashing lights, please consult your doctor before playing this game.

Parental guidance is always suggested when children are using a computer and video games. Should you or your child experience dizziness, poor eyesight, eye or muscle twitching, loss of consciousness, feelings of disorientation or any type of involuntary movements or cramps while playing this game, turn it off immediately and consult your doctor before playing again.

PRECAUTIONS DURING USE:

- Do not sit too close to the monitor.
- Sit as far as comfortably possible.
- Use as small a monitor as possible.
- Do not play when tired or short on sleep.
- Take care that there is sufficient lighting in the room.
- Be sure to take a break of 10-15 minutes every hour.

USE OF THIS PRODUCT IS SUBJECT TO ACCEPTANCE OF THE SINGLE USE SOFTWARE LICENSE AGREEMENT

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PREFACE

Congratulations! You have purchased COMMAND: MODERN AIR/ NAVAL OPERATIONS, the powerful global simulation of modern warfare at sea, in the air, in space and over land. While we, the COMMAND development team, have done our best to make COMMAND'S user interface and gameplay intuitive, your gameplay experience will be greatly enhanced by reading this manual.

1. INTRODUCTION: WHAT IS COMMAND?

COMMAND is a real-time wargame/simulation of historical and hypothetical air and naval operations starting immediately after World War II and moving into the foreseeable future (2020+). COMMAND's included scenarios feature a wide range of scales, ranging from duels of nuclear-powered submarines in the open ocean to clashes of missile boats in the littoral to battles of entire carrier fleets, up to theater-wide air and naval operations in Korea, Vietnam, Iran, Pakistan, the South China Sea and more. Additionally, COMMAND's powerful integrated scenario editor gives you the tools to construct any scenario, from pirate skirmishes all the way to strategic nuclear war.

You will be fighting your digital war on a 3-dimensional globe showing land and ocean-bottom terrain in great detail, augmented where necessary by numerous map layers that include aerial and satellite imagery.

COMMAND puts you in control of weapon systems such as aircraft, ships, submarine, and ground units, as well as huge arrays of supporting elements, from reconnaissance satellites, airbases, and replenishment forces to headquarters and special-forces units. You can issue broad directions to your forces and they will follow

them, but you are able to take charge and intervene at any point. Of course, your virtual foes will try to eavesdrop and track your movements and actions, maintain fog of war, or even lead you astray with well-planned deception operations.

Most of the time, your primary concern will be the coordination of combined and even multinational operations of various air and naval forces. Not all operations are huge in scope; your assignments will range from peacetime and low-intensity warfare such as intelligence or counter-piracy operations all the way to full-blown conventional or even nuclear clashes.

This simulation aims to educate and entertain players, showing the sheer complexity of modern warfare and acknowledging the relentless hard labor, service and sacrifices of thousands of members of armed services, as well as industrial workers, scientists and engineers. COMMAND represents a tool to remember the lessons of the past, understand today's operations, get insights on the conflicts of tomorrow and have fun too.

2. INSTALLATION

2.1. SYSTEM REQUIREMENTS

Please ensure your system meets the minimum requirements listed below.

Minimum system requirements, with recommended requirements in parentheses:

OS: Windows XP SP3 / Vista / 7 / 8
CPU: 1 GHz (Dual-core Pentium and above recommended)
RAM: 1 GB (2GB+ recommended)
Video/Graphics: DirectX 9.0c compatible video card with 128 MB RAM
Sound: Compatible sound card
Hard disk space: 10 GB Free

DVD-ROM: Yes, for boxed version
DirectX version: DirectX 9.0c (Suitable Direct-X version bundled with game)

2.2. INSTALLING THE GAME

To install the game, insert the game DVD disc into your DVD drive. If you have disabled the Autorun function on your DVD or if you are installing from a digital download, navigate to the DVD or download file location, double-click on the installation file, and if it is a zip archive, then double click on the executable (exe) file that is shown inside the archive. The correct file name will normally include the words "SetupRelease". Follow all on-screen prompts to complete the installation.

2.3. UNINSTALLING THE GAME

Please use the Add/Remove Programs or Programs and Features option from the Windows Control Panel or the "Uninstall" link in the game's Windows START menu to uninstall the game. Uninstalling through any other method will not properly uninstall the game.

2.4. PRODUCT UPDATES, BONUS CONTENT AND REGISTERING YOUR GAME

In order to maintain our product excellence, Matrix Games releases updates containing new features, enhancements, and corrections to any known issues. All our updates are available free on our website and can also be downloaded quickly and easily by clicking on the "Check for Updates" link in your Game Menu or by using the "Update Game" shortcut in your Windows START menu folder for the game.

We also periodically make beta (preview) updates and other content available to registered owners. Keeping up with these special updates is made easy and is free by signing up for a Matrix Games Member account. When you are signed up, you can then register

your Matrix Games products in order to receive access to these bonus game-related materials. Follow this process:

1. Sign Up for a Matrix Games Member account: THIS IS A ONE TIME PROCEDURE; once you have signed up for a Matrix account, you are in the system and will not need to sign up again. Go to www.matrixgames.com and click the Members hyperlink at the top. In the new window, select Register NOW and follow the onscreen instructions. When you're finished, click the Please Create My New Account button, and a confirmation e-mail will be sent to your specified e-mail account.

2. Register a New Game Purchase – Once you have signed up for a Matrix Games Member account, you can then register any Matrix Games title you own in your new account. To do so, log in to your account on the Matrix Games website (www.matrixgames.com). Click "Register Your Game" near the top of the menu in the Members Club to register your new Matrix Games purchase.

We strongly recommend registering your game as it will give you a backup location for your serial number should you lose it in the future. Once you've registered your game, when you log in to the Members section you can view your list of registered titles by clicking My Games. Each game title is a hyperlink that will take you to an information page on the game (including all the latest news on that title).

Also on this list is a Downloads for Registered Games hyperlink that takes you to a page that has all the latest public and registered downloads, including patches, for your registered titles. You can also access patches and updates via our "Latest Downloads" section (http://www.matrixgames.com/products/latestdownloads.asp).

2.5. RE-DOWNLOADING YOUR GAME

If you were logged into your Members Club account when you purchased your game, it will be automatically registered and you can access an automatic re-download link by going to http://www.matrixgames.com/members/myorders.asp or using the "My Orders" link in the Members Club. If your download does not show up there, you can contact our Help Desk at http://www.matrixgames.com/support/ to receive a new download link. This process generally takes one business day, but is often faster during normal work hours.

2.6. GAME FORUMS

Our forums are one of the best things about Matrix Games. Every game has its own forum with our designers, developers and the gamers playing the game. If you are experiencing a problem, have a question or just an idea on how to make the game better, post a message there. Go to http://www.matrixgames.com and click on the Forums hyperlink.

2.7. TECHNICAL SUPPORT

Should you have a technical problem with the game, the best way to get help is to post a note in the Technical Support sub-forum of the main game forum at http://www.matrixgames.com/forums. You'll then hear back from either our Matrix Games Staff, the development team, or from one of the many helpful players of the game. This is usually the fastest way to get help. Alternatively, you can contact our Help Desk at http://www.matrixgames.com/support/ . Support requests will generally be answered within 24 hours, except on weekends or national holidays.

2.8. SUPPORT

The quickest way to get responses from members of either COMMAND development team or the simulation community is to:

- Register as a new user of the forum at matrix games forums (http://www.matrixgames.com/forums/).

- Log in, and find the Command support area.

- (Optionally) Do a quick search for previous posts and threads on keywords best reflecting your problem.

- Start a new thread with a meaningful name and (optionally) a quick reference to an unsuccessful search for "prior art". As a minimum, please specify the version of COMMAND you are running and the scenario (if there are any problems with gameplay), and the mode of play (solitaire, PBEM, speed chess or synchronous).

- Wait for replies.

- What to do when editing a scenario: If you need assistance editing a scenario there are resources that will help. We hope this manual will be a primary resource, but we do expect to see questions and posts on our support forums which the developers will monitor along with experienced players.

- COMMAND includes extensive tutorial scenarios and videos – make use of them!

2.9. A NOTE FOR MULTITASKERS

COMMAND does not automatically pause when you switch to other applications. The message popup will still occur for those messages set to popup as requested in the Game Options menu.

3. IMPORTANT TERMS

There are several bits of information those in a hurry to get started need to know. These will be elaborated in greater detail throughout this manual and the tutorials.

Units: Units are the entities in the simulation. There are many types of units and many of these units can house other units; for example, an aircraft carrier can house aircraft, or an airbase can have hanger units, runway units, and these hanger units may contain aircraft units. Many units can be directly controlled or assigned to missions. There are special units such as individual facilities, sonobuoys, missiles, and many weapon types that may or may not be directly controlled and cannot be assigned a mission. Airbases can be assigned missions.

Groups: Groups are units that have been placed together in the simulation into one cohesive unit. This is done by drag-selecting units and pressing the G key.

Mounts: Many units have mounts. These are usually weapons or sensors. An example would be a gun mount on a ship, a hard point on an aircraft, or a sonobuoy dispenser on an anti-submarine warfare (ASW) helicopter. Mounts usually require ammunition that is already loaded, such as a missile on an aircraft (single shot mount) or a gun mount with a magazine associated with it for reload. There are ways to reload mounts and magazines if the scenario designer desires to provide loaded ammunition bunkers, ships' magazines for aircraft or at-sea replenishment for ships.

Magazines: These are components of units that are used to store weapons. These must have weapons in them for weapons to fire or aircraft to launch combat-oriented missions.

Missions: Missions make the battle space manageable and allows the scenario designer to set up an effective AI controlled opponent. The purpose of missions is to allow units or groups of units to engage in a common task, such as ASW. There are many mission types and mission options, such as Rules of Engagement, Doctrine and Postures.

Formations: Formations are usually a group of units (normally associated with ships, but may be extended to aircraft formations), a central unit(s) and escorts. Each unit in the formation usually has

a primary task and patrol zone, designed to mutually support the whole formation from any threat.

Rules of engagement (RoE) and Doctrine: This also encompasses mission options and orders. Many units house other units, like a cruiser with an embarked ASW helicopter. The cruiser is assigned a mission or patrol zone within a formation which has a specific EMCON condition. If the embarked helicopter is not assigned a specific mission, it will inherit the RoE, Doctrine and EMCON of the parent unit (the cruiser), this can be overridden if you decide to change any of the aforementioned settings (you will be prompted to affirm the override).

You can skip right to the tutorials or read further for more detailed information on the items above.

4. FUNDAMENTALS

4.1. STARTING COMMAND

Start command by either clicking on the Desktop Shortcut or on the Command.EXE file in the Command folder. The screen below is shown with five options.
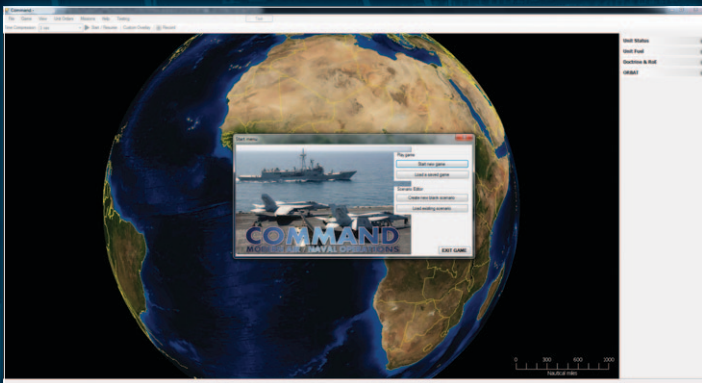
"START NEW GAME" and "LOAD SAVED GAME" places the simulation in play mode and opens a menu with two tabs on the left and a file menu below them. The "START NEW GAME" tab shows scenario files and allows starting the selected scenario from the beginning and the "LOAD SAVED GAME" tab shows saved-game files and allows loading those saved games. Selecting a scenario or saved game will show the title and a brief description of the scenario.

The "CREATE NEW SCENARIO" places the simulation in the edit mode and starts the simulation is a blank mode.

The "LOAD EXISTING SCENARIO" places the simulation in the edit mode and allows loading a scenario or saved game.
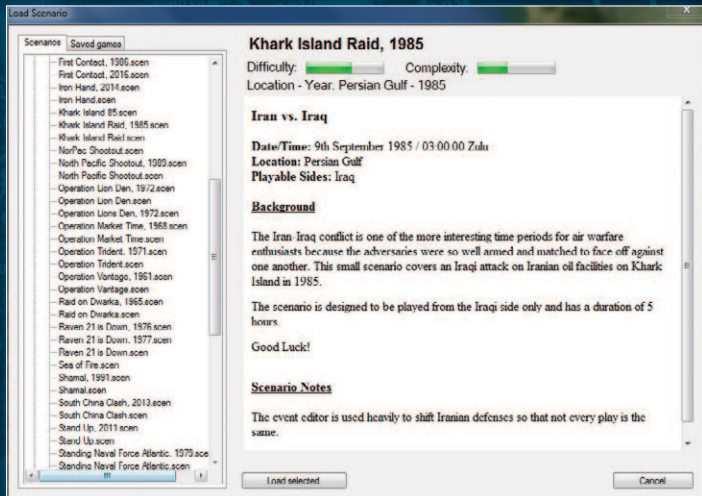

The load scenario dialog is composed of list of scenarios or saved games on the left and a large text box with name and description on the right. The left scenario drill-down list is tabbed and allows you to view and choose scenario folders, files (scenarioname.exe) or save games (scenario.sav files).

To load a scenario or save game you must select one by point and clicking it from the left side menu. If the entry has a plus sign next to it is a folder which when clicked will open revealing individual scenario or save game files that can be individually selected. When satisfied, click the load selected button at the bottom and the scenario or save will load.

When you load a scenario in either mode the application will match the scenario with the necessary database version. When you edit a scenario it will start with your default database version. If you need to change this you can do so in the scenario editor. This will be described later in the manual.

You will now be presented with the select-a-side dialog.
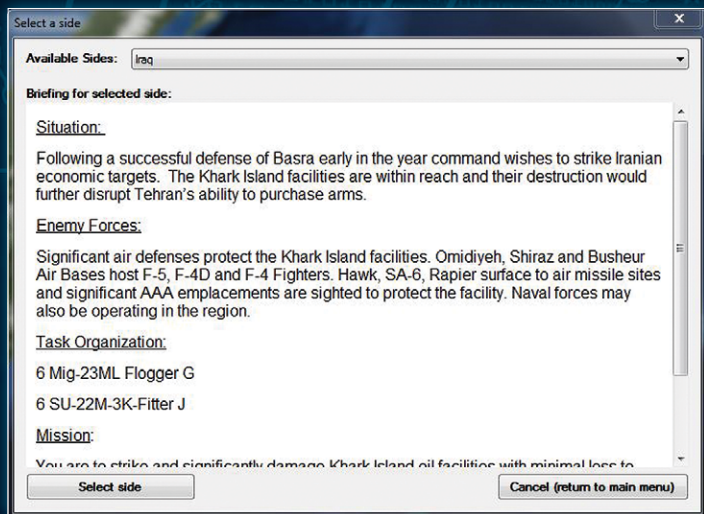
Selecting a side is pretty straightforward. Simply select a side in the drop down menu at the top, read the orders and description and click the select side button when satisfied with your choice.

The realism settings dialog will now launch:
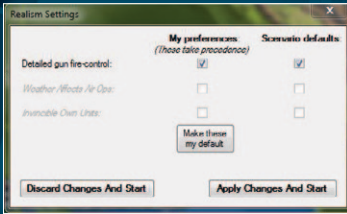
This realism settings dialog lets you view your preferences, the defaults the scenario editor set and set the current game's the way you'd like. Simply select a check box to turn on that preference and click Apply Changes or Discard Changes to launch the scenario. You can also save your defaults by clicking "Make these my defaults" so that the next time you launch a scenario they will be set to the way you like them. If choices are grayed out they are unavailable to be selected.

Your scenario or save is now set to begin and the general game UI should be displayed. You can now start your game at any point by


clicking the start game button on the top of the display.

5. USER INTERFACE

Command's user interface (UI), in simplest terms, is a zoomable globe bordered by a menu, game controls and informational displays.

5.1.1. THE GLOBE DISPLAY

The map globe interface combines power and simplicity. Using a mouse, you can point and right-click to rotate and use the mouse wheel to zoom in and out. You can use the view menu item at the top of the screen to manipulate the information displayed on the globe, including turning on and off the various range rings and activating the many layers included with the game. You can also add your own imagery as an overlay by using a third-party program to grab the imagery and pressing the custom overlay button to display it.
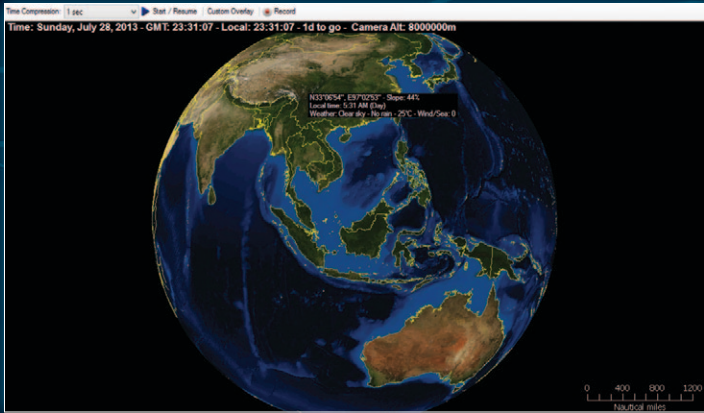
Similar to the real Earth, our game world is imperfectly round. It has a very rough surface with many different changes in elevation and a whole lot of water. Like the real world, what this translates to in COMMAND is that our physical models (sensor, visual, navigation, etc.) are all subject to limitations in their line of site (LOS) due to terrain and the curvature of the earth. To get a better understanding of this feel free to mouse over globe and notice the mouse data block's display of land elevations while over land and bathymetric data (including convergence zone [CZ] information) while over water.

The game controls are located below the menu items on the map and currently include: a start button, time compression toggle, custom overlay and record button.

- The **Start button** starts the simulation. Once it's pressed the game clock starts and it becomes ...

- The **Stop/Pause button,** which lets you pause the game.

- The **Time Compression drop-down menu** lets you set the time increment that command moves forward.

- The **Custom Overlay** button lets you add imagery you retrieved from 3rd party sources to the display. See the Section 8.3 of this manual for specific instructions on how to do this.

- The **Record** button activates Commands internal movie maker. You can use this to view or play files later. Once pressed it becomes the stop recording button The files this generates are only capable of being viewed in Command and can be large.

Time: Monday, July 29, 2013 - GMT: 23:58:35 - Local: 21:58:35 - 23hrs59m to go - Camera Alt: 692881m - AUCount:1 - PulseTime:0ms
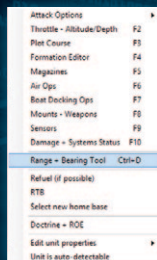
You will notice game information displayed at the top border of the globe display. This information includes: game time in GMT, local time, remaining time in scenario, the camera zoom altitude in meters, AU count (unit count) and a pulse time (game speed indicator).

Note AU count and Pulse Time are diagnostic settings that are not turned on by default. You can turn them on in game options by checking the Game Diagnostics Check box.

5.1.2. MOUSE FUNCTIONS

Your mouse has a number of further functions in the UI.

First you will notice the cursor has a data block next to it which displays information on the environment of the current area it is pointed at. Depending on whether it is over land or sea this information includes: position in latitude and longitude; elevation and depth in meters; convergence zone (CZ) layer information (sonar model), local time and weather.

Attack Options	▶
Throttle - Altitude/Depth	F2
Plot Course	F3
Formation Editor	F4
Magazines	F5
Air Ops	F6
Boat Docking Ops	F7
Mounts - Weapons	F8
Sensors	F9
Damage + Systems Status	F10
Range + Bearing Tool	Ctrl+D
Refuel (if possible)	
RTB	
Select new home base	
Doctrine + ROE	
Edit unit properties	▶
Unit is auto-detectable	

5.1.3. RIGHT CLICK ON UNIT DIALOG

You can right-click on a unit to display a drop-down menu of popular functions in the game.

5.1.4. ATTACK OPTIONS

Engage Target(s) Auto: This function will order the selected unit or group to attack a designated target or group of targets. After selecting this function designate a target by clicking on a target or drag selecting one or more. The firing unit or group will then move to get within the firing parameters of the weapon to be used. If there is more than one weapon the unit will work from longest ranged weapon to shortest. You can also call on this function using the F1 hotkey or from the Unit Orders drop down menu.

Engage Target(s) Manual: This function calls on the weapons allocation dialog which allows players to manually allocate weapons to selected targets. This is a a great function to use in conjunction with plotted courses to allow for off axis attacks or more fine grained strike planning however you must manually put your units in the correct firing parameters for weapons to fire. Please see the Engage Target(s) section in the Drop Down menu's chapter for further detail.

To use call select the function and the click or drag select one or more targets. The weapons allocation dialog will then launch allowing you to allocation weapons to targets. This function can also be called using the Shift+F1 key combo or from the Unit Orders drop-down menu.

Bearing-Only Attack: The bearing only attack allows players to fire guided weapons without designating a target but instead designating a point which their guiding sensor(s) will active to hunt targets. Be aware that doing this may put neutrals at risk as the sensor may not know friend from foe. You can also call on this function using Ctrl+F1 hotkey combo or from the Unit Orders drop down menu.

Drop Target: This function allows a player to drop one or more units from it's target list. After selecting this function simply click on the unit you would like to drop or drag select multiples.

Disengage (Drop All Targets): This function drops all targets from the unit target lis and the unit will continue on with its previously assigned mission or plot.

Ignore Plotted Course When Attacking: If units are on plotted courses and are given an attack order they will fly to the end of their plotted course and carry out the attack by default. Selecting this options turns that behavior off and units will attack immediately.

Function key functions: Allow you to call on unit level function in the game. Please see their specific sections in the Drop Down Menu chapter of the manual for a detailed explanation of each. .

The Range and Bearing Tool: This tool acts as a measuring tape for players. To use it select the option (or hit Ctrl + D) and click an point on a map and drag out you will see it measure range in nautical miles and bearing relative to the point you chose.

RTB: If an aircraft is selected using this function will order an aircraft to return to its home base.

Doctrine and ROE: Lets you set Unit level doctrine and ROE (Rules of Engagement). Please see Doctrine and ROE section in the Drop Down Menu section of the manual for a detailed explanation.

Edit Unit Properties: Displays a set up drop downs to quickly navigate to magazine and ready aircraft dialog.

Unit is auto-detectable: The unit can be seen without being in range of a sensor in the age. This is generally off by default for mobile units and on for fixed units such as buildings. You can turn it off to model hidden fixed facilities that need to be explicitly detected, such as underground WMD facilities.

Select new home base: If you'd like to designate a new home base for a unit select this option and click on the new home base or ship on the map.

Set Orientation: Allows you to adjust the unit facing. This is crucial for land units that have sensors that point in one direction.

To use, simply move the slider bar to match your desired bearing.
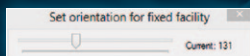
Is normally best to activate the radar to see what the arc is.

5.1.5. CONTROL RIGHT CLICK ON MAP DIALOG:

You can also Ctrl button + right mouse click on an empty spot on the map for some other functions.

- **Add Unit** appears in edit mode and calls on the add unit dialog to drop a unit where you clicked.

- **Add Reference Point** allows you to drop one reference points where you clicked.

- **Define Area**: Allows you to click and drag a four sided area with

5.2. UNITS, GROUPS AND WEAPONS SYMBOLS

Units can be utilized in the game as individual units or groups. Groups are useful to create as you can give many units common orders and you can organize ships into formations for a better common defense.

To group units simply drag-select the units you would like to group together and press the G key. You will now notice they have merged into one group symbol, which you can rename to whatever you would like.

If you'd like to remove members or dissolve the group:

- In game mode, you can detach individuals by select then in unit view (see below) and pressing the d key. Once you get down to one unit the group will dissolve.

- In editor mode you can select the group and press the delete key once which will dissolve the group.

Units and Groups are displayed on the game map as color-coded symbols. The colors note postures (player side, friendly, unfriendly and hostile) and the symbols themselves let you know what kind of units they are.

	Player Side and Friendly*	Neutral	Hostile	Unfriendly	Unknown
Aerostat					
Air Decoy					
Fixed Wing Aircraft					
Helicopter					
Air Group					
Air Base					
Installation					
Mobile Unit					
Mobile Group					
AAA					
SAM					
Radar Site					
Armored Unit					
Infantry					

Mechanized Infantry					
Gun Artillery					
Rocket / Missile Artillery					
Surface Unit: Aircraft Carrier					
Surface Unit					
Submarine					
Surface Group					
Subsurface Group					
Missile					
Torpedo					
Satellite					
Active Sonobouy					
Passive Sonobouy					
Unknown	NA	NA			

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* Allied sides are marked with A under them; one-way friendly sides (e.g. you are friendly towards them but they are nautral towards you) are marked with F under them.

Unguided Bomb	
Depth Charge/RBU	
Unguided Rocket	
Bottom Mine	
Floating Mine	
Moored Mine	
Mobile Mine	

Weapons Symbols

Unit Aimpoint Counts
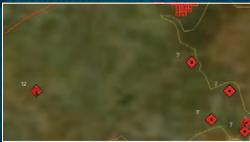
The small white numbers next to units are a mount and sensor aimpoints within the unit. This allows players to know how many components (ex. Each tank of a 4 point tank platoon) are within a unit so they can allocate the correct number of weapons).

Reference Points: Reference points are markings that can be used as area boundaries, waypoints or simple markers. There are several types with different properties.
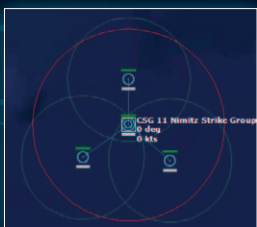
Unselected/Unlocked Reference Point

Selected Reference Point

Locked Reference Point

5.2.1. GROUP MODE AND UNIT VIEW MODE

You can toggle between unit view and group view by pressing the 9 key on the keypad of your keyboard. To check which mode you are in please check the value on the button left hand side of your display.

Group view is default and displays the group symbol and group datablock for units that have been grouped together. You can see individual units in a group when it is selected but cannot select and give individual orders to ships.

Unit view displays every unit and datablock of every unit on the map. You can select and give individual units orders in this window.

5.3. RIGHT SIDE INFORMATION PANEL

The dialogs on the right side of the display are the unit/group information dialogs. These are utilized by left clicking a unit in the display which changes the different dialogs displaying information about the selected units. What and how much is displayed depends on what the player has access too. If the unit is on the player side, friendly or the game is in scenario editor mode the player will have access to all information. If in game mode and the player is neutral, unfriendly or hostile the player will only have access to what their contact information filters too.

5.3.1. UNIT STATUS DIALOG

Name: The unit or group name will be displayed at the top.

Type: Clicking on this opens the database viewer with the selected unit displayed. If a group is selected, Clicking will produce a list of

the group's composition. Clicking a unit name on the list opens the database viewer with that unit displayed.

Group Composition: If the selected unit is a group you can click the down arrow button to display the member classes of the group. Clicking on individual entries will launch the platform display.

Contact Report: Clicking this button opens up the contact report dialog that presents a list of detected emissions (sensor) and a list of possible unit matches. This is helpful in identifying the unit. Clicking on the various entries in the possible matches list will launch the platform display giving players full information on the unit.
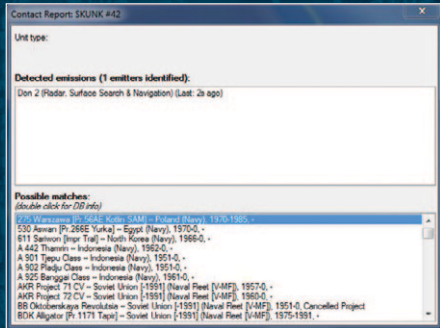

Side: The unit or group side is displayed.

Course: Indicates the current course for a mobile unit or facing direction for a stationary unit or fixed facility.

Speed: Indicates the unit's current speed.

Group lead/lead can slow down (group reform) checkbox: When selected, allows the formation leader to slow down when it is necessary for group members to move to regain their position in a formation. This prevents group leaders from breaking away from the main group and is selected by default.

Damage: Shows the Total amount of damage the unit has at this moment.

Damage Ctrl Button: Opens the Damage Status window. This displays the damage conditions of the unit and its sensors, mounts and magazines.
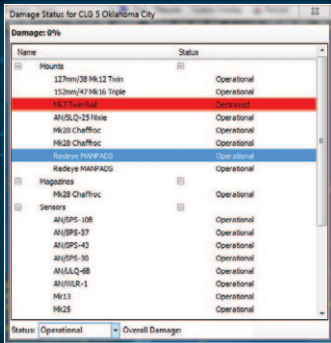
In Editor mode, you can change the values of these to add damage to ships and units in constructed scenarios.

Fire and Flood Meters: Display the fire and flood damage as it occurs.

Magazines: Pressing the magazine button launches the magazine dialog which displays individual magazines, weapons records and number of weapons carried.

In edit mode, you can add new weapons records to magazines and you can edit ammunition amounts in the weapons records. This allows you to supply mounts and hosted aircraft with the weapons and ammunition needed to any you have added to the host unit.
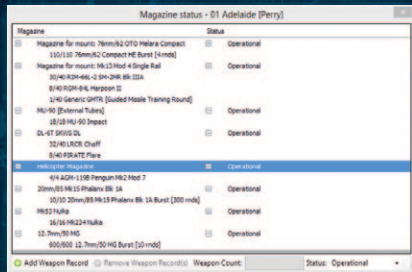
Boats Button: Displays the number of available boats and total boats in the selected unit. Pressing the button launches the Docking Ops Dialog.

The Boat status tab displays docked boats grouped by type. The name at the group level gives a unit count and type name and at the unit level gives the individual unit name, status (locked, launching), assigned mission and time to ready or launch.

The launch individually button allows you to select one or more row and launch them as individuals. The launch as group allows you
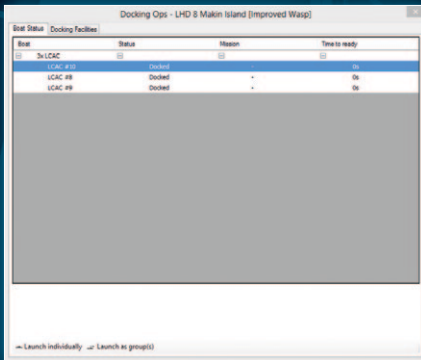
to select one or more rows and launch them as a group by type.

The Docking facilities tab allows you to view by unit and docking facility/component. When launched, you will see a launch time displayed next to each unit entry.
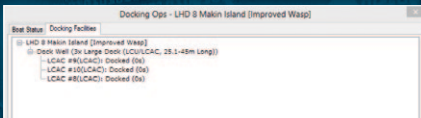
Aircraft Button: Shows the number of available aircraft and total aircraft in the selected unit or selected group. Clicking the button launches the Air Ops dialog which is used to manage hosted aircraft.

The air ops dialog has two tabs: Aircraft Status and Air Facilities.
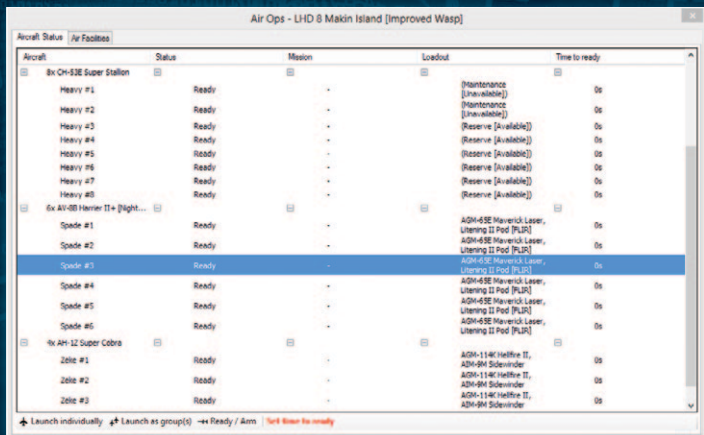
5.3.2. AIRCRAFT STATUS DIALOG

The aircraft status dialog groups aircraft by type with individual units shown in drop-down lists. You can expand and retract the lists by clicking the + and - button next to each unit type.,

The columns display current information on the hosted unit.

Aircraft: At the group level displays the unit count and type name. At the unit level displays the unit's given callsign.

Status: Shows the current status of the aircraft. These include:

- Ready: A/C is available for use.
- Readying: A/C is in the process of reloading and refueling.
- Taking off: A/C is in the takeoff process

Mission: Shows the name of the mission the aircraft is assigned to. The field will be blank if unassigned.

Loadout: Shows the current Loadout of the aircraft or the loadout being fitted if the aircraft is being readied.
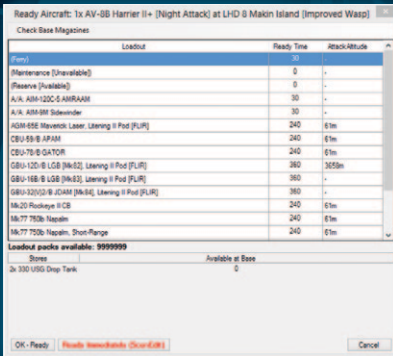
Time to Ready: Shows the time remaining until the aircraft is available. 0s is shown when the aircraft is ready. When an order is given for an aircraft to launch the launch time is then displayed.

Launch Individual button: Pressing this button after selecting one or more aircraft will order them to launch and as individuals.

Launch as Group(s): Pressing this button after selecting numerous aircraft will launch them as a group. If the selected aircraft are of different types and loadouts they will be launched as separate groups or individuals by type and loadout.

Ready/Arm: Launches the Ready Aircraft Dialog which allows you to change the loadout of your aircraft with available munitions.

The ready aircraft dialog displays a list of available loadouts, the ready time and attack altitude the primary munitions are deployed

by the AI at. If you click on each row the stores fields at the bottom will display the individual components (munitions, pods, tanks, sonobuoys) for each loadout and the number available in the parent units' aircraft magazine.

To choose one simply select the weapon row you like and press the OK-ready button or Ready Immediately (Scenedit) button.

If the parent unit does not have the unit you can add it by click the check base magazine button at the top which allows you to view the magazine dialog and edit munitions.

Set time to Ready: You can set a value for when you'd like an aircraft to become available using this dialog. Just fill in the days, hours and minutes filed to complete.

5.3.3. AIR FACILITIES TAB
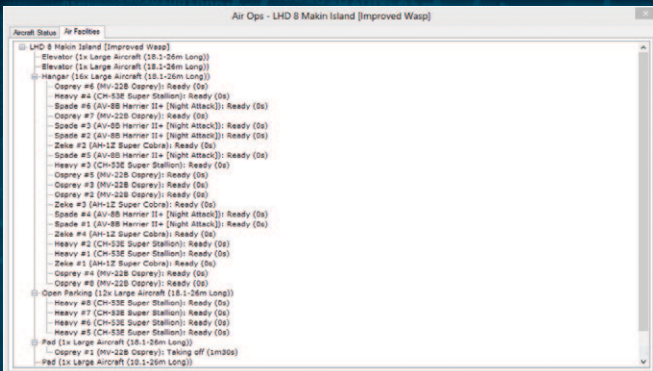
This dialog displays hosted aircraft grouped by the units and component facilities (hangars, open parking spots, revetments, elevators etc.). You can follow the progression of aircraft from hangar to elevator/taxiway to pad/runway. A launch time is provided.

Mission: This field displays the current mission name and type.
**Status**: This displays the unit's current status.

Values can be:

- **"Engaged Defensive"**: The unit is actively maneuvering to avoid enemy fire or other imminent threats.

- **"Engaged Offensive"**: The unit is actively maneuvering to intercept its primary target and either "buzz" it or engage it.

- **"Forming Up"**: The unit is part of a group forming up and is waiting for the group members to appear.

- **"On Attack Run"**: The Unit is totally committed to its attack run against a specific target, not deviating even for defensive maneuvers.

- **"On Patrol"**: The unit is on a patrol mission.

- **"On Support Mission"**: The unit is on a support mission.

- **"On Ferry Mission"**: The unit is on a ferry mission.

- **"On Plotted Course"**: The unit is following its plotted course, laid out either manually by the player or automatically by the unit's "AI crew".

- **"RTB (Bingo Fuel)":** The unit has reached the minimum amount of fuel necessary to return to its base, and is heading home.

- **"RTB (As ordered)"**: The unit has been expressly ordered by the player to head for home, and is complying.

- **"RTB (Winchester)":** The unit has reached Winchester status (ie. has expended its primary weapons as defined by its loadout & mission) and is getting back home.

- **"RTB (Mission over)":** The unit considers its job done (e.g. it had a strike mission with specific targets assigned and these targets are all gone), and it's returning home.

- **"Tasked on Mission"**: The unit is maneuvering according to the needs of its tasked mission (typically a strike mission).

- **"Unassigned"**: The unit has no mission or other orders, waiting for new commands.

- **"Slowing Down (to allow group to form up)":** The unit is at the lead of a group and is deliberately slowing down (thus slowing down the entire group) so that the other group members can get to their group stations.

- **"Refuelling/Replenishing"**: The unit is refueling/replenishing from a suitable provider (tanker, UNREP ship etc.)

5.3.4. SENSORS BUTTON

Pushing this button launches the sensor dialog that displays a list of all sensors on a unit. This includes the sensor type, status and a check box showing whether it is active or not.
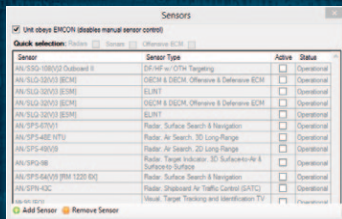
To make any changes you will need to uncheck the Unit obeys EMCON check box as EMCON setting are inherited from unit/mission or side settings. You can then activate or deactivate each sensor by either checking off the active check box in the list or activating them in groups by using the Quick selection check boxes. Keep in mind that passive sensors are always on and cannot be turned off.

The **Add Sensor button** launches the Add Sensor dialog which allows you to add a sensor to a platform.

The **Remove Sensor button** works by selecting a sensor and then pressing this button.

5.3.5. WEAPON BUTTONS

Pressing this button launches the Weapons Dialog which displays information on all weapon mounts on a platform.

The **Weapons Dialog** displays a list of all weapons grouped by mount. The black root level text describes the mount, its capacity and status. The subset blue weapons record text describes the individual weapons in the mount, the time to fire and a checkbox that allows players to mark certain weapons as the reload priority in the case of a mount that shoots different weapons and ammunition. The gray subset text notes the capacity to carry the weapon but the lack of any.

Add Weapons Record Button: Allows players to add a weapons record to any mount by selecting the mount and pressing this button.

Remove Weapon Record(s) Button: Allows players to remove weapons records by selecting the record(s) and pressing this button.

Add Mount Button: Press this button to add a new mount.

Remove Mount Button: Select the mount(s) and press this button to remove them.

Edit Weapons: To change the number of weapons in a record select the record, click the change button, enter a numeric value in the weapons field and then click set.

Unit Fuel: A green bar that shows the amount of fuel remaining. All units consume fuel except facilities and land units. Units with nuclear power plants will not run out of propulsion fuel. Fuel consumption rate is a function velocity for all units and is not a linear relationship. A/C have fuel consumption modifiers for altitude and throttle setting including afterburner

Total units remaining and time until expended are displayed below. These will change based on consumption.

5.3.6. DOCTRINES, POSTURES, AND RULES OF ENGAGEMENT

Doctrine & RoE: Shows the unit/groups Doctrine and Rules of Engagement settings.

- **Change Button**: Click this to open the Doctrine & RoE/ EMCON dialog, below.
- **Doctrine & RoE Dialog**: This dialog lets you set Rules of Engagement (RoE) settings for units and groups. Doctrine and Rules of Engagement govern platform behavior, or posture, towards other platforms in the scenario. The Scenario Designer sets the initial Doctrines and RoEs and may enable the player to edit one or all of these.

5.3.7. GENERAL TAB

Doctrine and RoE options under the General tab include the following:

Use Nuclear Weapons: Determines if the platform is authorized to employ nuclear weapons. This has three options:

- **YES**: Use of Nuclear Weapons is authorized.

- **NO**: Use of Nuclear Weapons is not authorized.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

Engage Non-Hostile Targets: Determines how a platform would behave if it is engaged by a Non-Hostile Contact. This has three options.

- **YES**: Engage unknown, unfriendly or hostile targets.

- **NO**: Follow Posture settings.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

RTB When Winchester: When a platform, usually an aircraft, has expended a certain amount of its ordinance, it is considered in a "Winchester" condition and will return to its parent platform. Tolerances are set by aircraft roles within the database. This RoE has three options.

- **YES**: Unit will return to base when loadout role tolerance has been met.

- **NO**: Unit will ignore loadout role tolerance and continue to attack with any legal weapon.

- **INHERIT**: Posture setting is the same as the parent mission or side ROE.

Engaging Ambiguous Targets: Sets the AI behavior when considering using a weapon. Each weapon has certain tolerances calculated on-the-fly for down/cross-range; most direct-guidance systems want a

precise target, most LOAL weapons have relatively strict cross-range tolerance (equal to the sensor swath) but relaxed downrange tolerance because of their BOL ability, area-effect weapons can tolerate up to their kill zone etc. If the target's ambiguity figures are greater than the weapon tolerances, this is explained in the manual weapon allocation window and the weapon will not be fired. This dialog has four options:

- **IGNORE AMBIGUITY**: An ambiguous contact is any contact with an uncertainly area. The AI will ignore the ambiguity when determining whether or not to launch a weapon.

- **OPTIMISTIC**: The target uncertainty area must be smaller than 3x the weapon tolerance for the AI to launch the weapon.

- **PESSIMISTIC**: The target location uncertainty must be less than the weapon tolerance for the AI to launch the weapon.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

TIP: This setting is of great help if you want to make the AI (both friendly and enemy) conservative & cautious with its fire discipline (fire only under a solid fire control solution), or conversely model a trigger-happy or poorly-trained unit, group or entire side that throws weapons right and left without much caution.

Automatic Evasion: The game has a number of pre-programmed evasions routines that the AI will undertake if it detects it is under attack. This RoE gives you the ability to turn this behavior of and off.

- **YES**: Units will continue to evade.

- **NO**: Units will not evade attacks.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

Maintain Standoff: This RoE setting allows players to take advantage of the weapons range advantage of a particular platform may have against known adversaries. It does this by staying inside its weapon

range but outside the target's weapon range until ammo has been expended. Standoff options are:

- **YES**: Units will maintain standoff.

- **NO**: Unit will charge target and engage with all weapons regardless of any advantage.

- **INHERIT**: Posture setting is the same as the parent mission or side ROE.

Use Refuel/Unrep: Determines whether the unit/group/side will use tankers and/or UNREP assets to refuel/replenish. Useful for reserving the resupply assets (often a scarce resource) for specific forces.

- **YES**: Units will refuel or preform replenishment.

- **NO**: Units will not refuel or perform replenishment.

- **INHERIT**: Setting is the same as the default value, parent mission or side ROE.

5.3.8. EMCON TAB
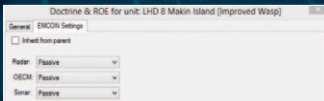
EMCON is the Emissions Condition of the platform. For a full description, see Section 5.1.8, below.

6. DROP-DOWN MENUS

COMMAND'S menu and game controls are located at the top border of the UI.

The menus are standard drop-down dialogs that are activated by clicking them once, which displays the drop-down menu's choices, and then clicking the item you would like to activate. There are a number of hot keys which call a number of these functions as well that you can view by clicking the Unit Orders menu item. You can find a list of all hotkeys at the end of this manual.

6.1. GAME OPTIONS MENU

In the "Game" drop-down menu, pressing on the "Game Options" tab opens the game options menu with the following tabs:

General game settings

- Use Autosave: The game regularly saves as "Autosave.Scen" in the "/scenarios" directory.

- Show Diagnostics: Displays error message with stack trace and other pertinent information when an error or crash occurs.

- Message Log in Separate Window: Removes the message log from the main UI and displays it in a separate window.

- Use Game Sounds: turns sounds on and off.

- Realism button: Enables control over the level of detail of various models in the game.

- Detailed Gun Fire Control: When activated, guns have their Ph and CEP values realistically affected by the quality of their fire-control director and may altogether be incapable of firing if their sensors are blocked or knocked out. When disabled, guns can fire even without any director guiding them, and their accuracy is unaffected by sensor & weather limitations.

- Show Altitude In Feet: Altitudes displayed in unit datablocks and the Unit Status dialog are expressed in feet (US Measurement Standard).

6.1.1. MESSAGE LOG

The Message Log has three columns:

- Message Type: Regards the type of information that is displayed.

- Show on Message Log: Displays that message type when they occur if checked.

- Raise Pop-Up: If checked, initiates a Pop-Up message and pauses the game when the message type occurs.

6.1.2. ORDER OF BATTLE

This dialog is composed of two tabs that let you view your order of battle by group or mission or task. Each order of battle view is composed of hierarchical drill-down lists of units that when selected in the order of battle dialog will be selected and centered on the game map. Plus or minus symbols next to items allow you to expand and retract lists of units, allowing you to quickly navigate around your order of battle. You can also call this dialog by using the "O" hotkey.
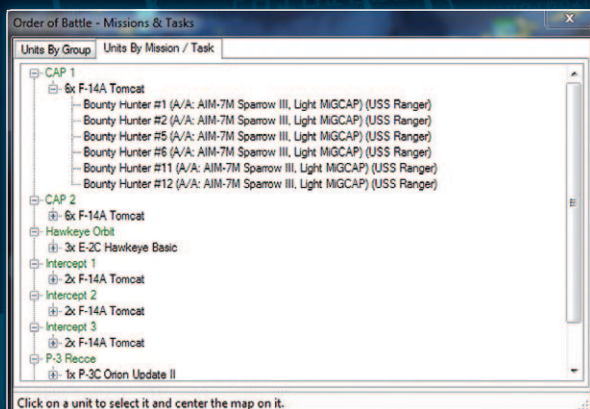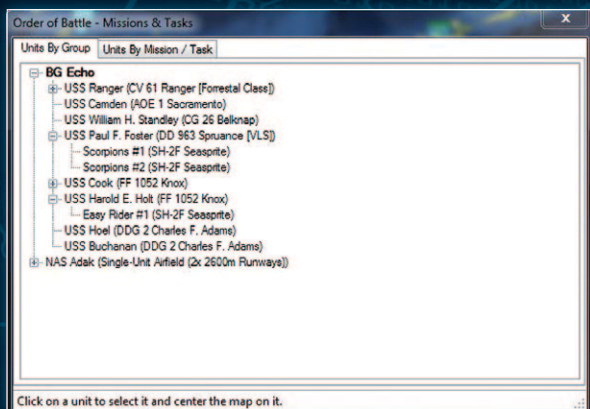
6.1.3. DATABASE VIEWER

This dialog you displays all units in the database that is currently selected.
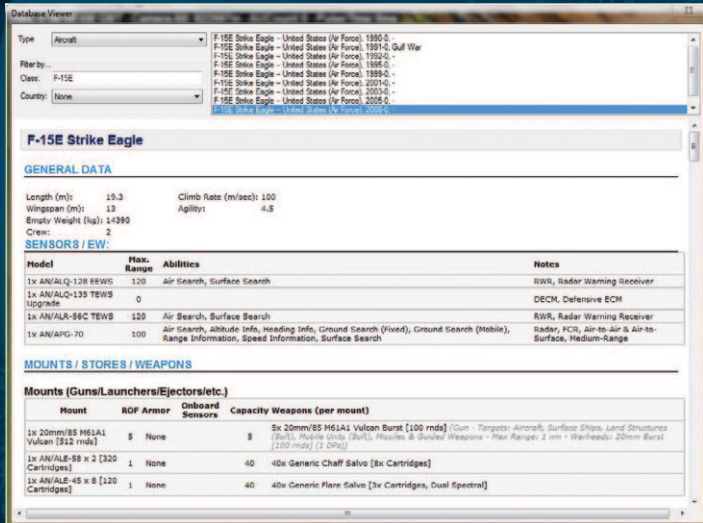
To view, select a type and unit from the list that appear on the right. Unit information is displayed below. This display also lets you filter results by name or by country.

This display is fairly important in helping make good decisions about how units and weapons should be used against certain targets in the game. Please take note of ranges, weapon characteristics and damage point values.

## 6.1.4. BROWSE SCENARIO PLATFORMS

This dialog allows users to see all units used in the launched scenario. You can filter by side

and the list is organized by platform type. Double clicking a unit name will launch the platform display where you can see information on the unit.

6.1.5. SCENARIO DESCRIPTION

This dialog displays a text description of the currently loaded scenario.
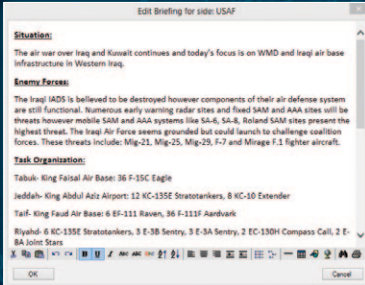
6.1.6. SIDE BRIEFING

This dialog displays the current selected side's briefing.

6.1.7. SIDE DOCTRINE + ROE

This dialog lets you set the side's Rules of Engagement settings. Rules of Engagement settings are hierarchical in command and this is where you would set them as a player at the highest level to let them flow down to mission and then groups/units.

Doctrine and Rules of Engagement: Governs platform behavior, or posture, towards other platforms in the scenario. The Scenario Designer sets the initial Doctrines andROEs and may enable the player to edit one or all of these. Doctrine and ROE can be seen by clicking on the "Doctrine and ROE" button in the Unit Information Box. There are various types of postures that are listed below.

For more on this menu, see Section 4.3.6.1, above.

6.1.8. EMCON TAB

EMCON is the Emissions Condition of the platform. This sets the ordered status of all emitters with regard to Radar, Active Sonar, and OECM (Offensive Radar Jamming). Each emitter category has its own setting and has two states:

- **PASSIVE**: Radars, Active Sonar, and OECM off.

- **ACTIVE**: Radars, Active Sonar, and OECM on.

Setting EMCON: There are a number of ways of setting EMCON for a unit or group of units. At the beginning of the game, the EMCON settings have been set by the scenario designer. If the player does nothing, all Platforms will inherit the initial EMCON settings The player can manually set EMCON settings in a variety of ways.

EMCON Default Value: The default value for EMCON is "Inherited", where the platform inherits its EMCON condition from its parent platform and/or as set for that side by the scenario designer.

Inherited EMCON: EMCON can be inherited from the scenario designer settings, Mission EMCON settings, Group EMCON settings, or Parent Unit EMCON settings.

- Platforms assigned to a mission will inherit the mission's EMCON settings and any embarked or assigned platforms will also inherit them.

- Aircraft automatically inherit their EMCON settings from either their parent platform or their mission is assigned to one.

Manual EMCON: setting the EMCON settings of a platform or a group. Click on the unit or group and select the "SENSORS" button on the unit information window. Set the desired EMCON settings. You may get a message to confirm the manual override of the EMCON settings.

6.1.9. RECORDER

This selection launches the game's replay viewer. COMMAND has in-game recording capability as well as the ability to jump in and play at any particular point of that recording.

How it works:
You can start and stop any recording by clicking the red recording button at the top of the UI. When you do the recording is saved as a .rec file in the recordings directory of your COMMAND directory.

These files are huge, given very long names and are not currently convertible to any other format. If you use this function often best practice is to navigate to the folder to rename the file to something that makes sense while retaining the .rec extension. You will want to clean this directory out as well as the files are huge.

To view and manage any recordings you can launch the viewer by selecting recorder in the Game drop-down menu.
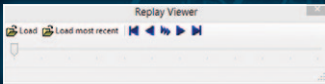
The replay viewer functions are very similar to any other video player's control. You use the Load and Load most recent functions to pull of the videos you have recorded. You use all the video function buttons and slider to navigate to the point of the video you'd like to view. If you'd like to play you simply close the viewer and proceed to play.

6.1.10. MESSAGE LOG

Selecting this menu item presents the message log options clear and print to file.

Clear: This function clears the currently selected side's message log. This is useful for scenario editors to clear any messages that appeared during editing (God's Eye View Mode).
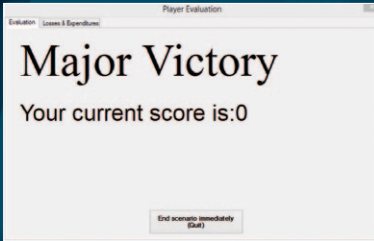
Message Log: This function writes the contents of your message log to the AALog.Txt file your Command directory. This is good for after action analysis of the game mechanics.
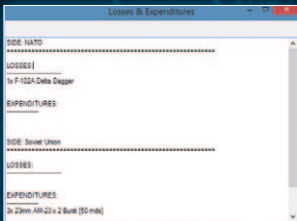
6.2. LOSSES AND EXPENDITURES

This menu item launches the losses and expenditure dialog which displays the losses and weapon expenditures of all sides of a scenario.

6.2.1. SCORING

Selecting this menu item displays the Players evaluation.

This dialog includes an **Evaluation** and a **Losses and Expenditures** tab.

The player evaluation tab displays scoring information derived from what a scenario editor configured using the event editor's scoring action and the scenario editor's scoring feature. There is End scenario immediately (Quit) button at the bottom which allow players to end the scenario they are currently running.

The Losses and Expenditures tab displays the unit losses and weapon expenditures of all sides of a scenario.

6.3. MAP SETTINGS DROP-DOWN MENU

The Map settings drop-down allows players to manipulate what they see on the central globe display. They can turn features on and off by clicking on the drop down menu items. They are activated when a check mark appears next to them in the drop down.

Sensors Range Rings

  ▪ Air Sensors appear as white rings or arcs.

  ▪ Surface Sensors appear as yellow rings or arcs.

  ▪ Active Underwater Sensors appear bright green rings or arcs.

Weapons Range Rings

  ▪ Air weapons ranges appear as pink rings or arcs.

  ▪ Surface weapon ranges appears as dark red rings or arcs.

  ▪ Underwater weapons ranges appear as dim green rings or arcs.

Show Non-friendly Range Symbols

When activated, the simulation will display the theoretical range-ring for a detected contact. These are appear as broken lines but share the color characteristics of friendly range rings.

Merge Range Symbols

This merges all range rings of a particular side to unclutter the UI.

Illumination Vectors

Many modern weapon systems use or require a fire-control radar to illuminate a target to guide weapons to them or improve their accuracy. This includes most modern deck guns and many surface-to-air missiles. This is displayed as a broken red line leading from shooter to target.

Using the drop-down menu, you can set this to be displayed for: the selected unit, all units or None by clicking on your choice in the drop down. It is set to None by default to lower the clutter on the display.

Targeting Vectors

Displays a broken green line from shooter to target and a small text date block below showing how target was allocated (manual or auto) and the expected time of weapon release.

Using the drop-down menu you can set this to be displayed for: the selected unit, all units or None by clicking on your choice in the drop down. It is set to None by default to lower the clutter on the display

Datablocks

Displays unit name, course and speed to the right of unit in white text in the display.

Using the drop-down menu you can set this to be displayed for: the selected unit, all units or None by clicking on your choice in the drop down. Selected unit is set to be the default value.

Datalinks

Displays any communication link between units.

Using the drop-down menu you can set this to be displayed for: the selected unit, all units or none by clicking on your choice in the drop down. It is set to "None" by default to lower the clutter on the display

Map Grid

Displays a latitude and longitude layer that adjusts its increments to your zoom level.

Relief Layer

Enables a colorful layer that displays elevations well.

Borders and Coastline

Enables and disables the yellow border and coastlines layer. The border and coastline layer is modified by year and does reflect most border changes in the world during and after the Cold War.

6.4. UNIT ORDERS DROP-DOWN MENU

Unit actions are commands the player gives to the unit, multiple units, or groups.

6.4.1. ATTACK ORDERS

The following attack orders are available through this dialog:

Engage target(s) (Auto): This function will order the unit or group to attack a designated target or group of targets.

To use select the firing unit, select this function and then designate a target by clicking on a target or drag selecting one or more. The unit or group will then move to get within the firing parameters of the weapon to be used. If there is more than one weapon the weapon with the longest range will be chosen followed by the next longest so on and so forth.

If the unit is assigned to a plotted mission it will continue to the end of its current course unless you right click the firing unit , go to attack options and select the ignore plotted course option.

This function call be called using the F1 hotkey or from the right click on unit dialog.

Engage target(s) (Manual): Selecting this function and then clicking on or drag selecting one or more targets call the weapons allocation dialog which let players manually allocate weapon to selected targets.
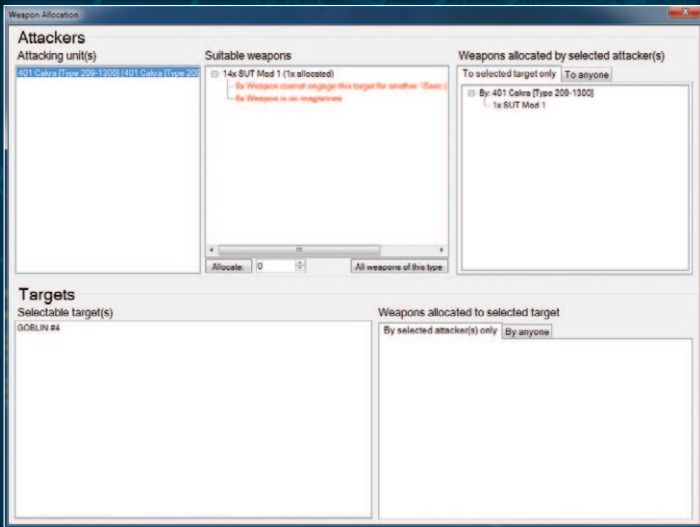
The dialog is organized by having attackers, their weapons and allocations listed at the top and the selected target list and allocations to them listed below.

To allocate a weapon to a target:

1. First select one target from the target list below by clicking on it so it is highlighted.

2. Select an attacker from the list above. If they have a legal weapon to fire on the target it will appear in the suitable weapons list group by weapon type. If the weapon is legal but outside on or more firing parameters the reason will be written in red text (see complete list of reasons and solutions below). If the weapon is within firing parameters you will see green text saying "OK - Can fire."

3. You then allocate the number of weapons to the target by populating the allocated field below the suitable weapons list and clicking the allocated button or you can double click any weapons line in the suitable weapons list. If you are not sure how many weapons to allocate, please review both weapons and targets in damage values as well as the defender in the platform display. Once allocated, the weapons will appear in both the Weapons Allocated By Selected Attacker(s) list at the top and the Weapons Allocated To Selected Target at the bottom.

4. If you'd like to de-allocate weapons you can do so by double-clicking the individual weapon's lines in the Weapon's Allocated by Selected Attacker(s) list.

5. When are satisfied, you can complete the process by closing the dialog by clicking the red x. You would then have to ensure the firing platforms remain in firing parameters by manually plotting, adjusting speeds and assigning to missions.

Bearing Only Attack: The bearing only attack allows players to fire guided weapons without designating a target but instead designating a point which their guiding sensor(s) will active to hunt targets. Be aware that doing this may put neutrals at risk as the sensor may not know friend from foe. You can also call on this function using Ctrl+F1 hotkey or from the right click on unit orders drop down.

6.4.2. MY @#%^@†% WEAPON WON'T FIRE!!!

COMMAND makes few (if any) compromises when it comes to the various factors affecting weapons and their effect on targets, as

well as their employment. As a result, you may find yourself in a situation where it is not immediately obvious why the unit you just ordered to engage the enemy is not firing yet.

A very effective method of getting good feedback on weaponry limitations is to perform a manual weapon assignment. Your virtual crew runs the available weapons through an exhaustive checklist of conditions that (depending on the weapon and target) have to be met before the weapon at hand can be fired.

Here is a summary of the no-fire explanations, what they mean and what you can do as a player to overcome them:

- **Weapon mount is not operational**: The weapon mount (gun, missile launcher, torpedo tube etc.) holding the weapon in question is out of action (probably damaged or destroyed) and cannot fire.

- Solution: Be patient until the mount is repaired (if not destroyed outright). If possible, have the weapon unloaded from this mount so that it can be transferred to another suitable one, if such exists.

- **Unit is not authorized to use nuclear weapons**: The unit as attempting to fire a nuclear weapon but has no authorization to do so.

- Solution: If you can (you may not be allowed to), set the unit's "Use nukes" doctrine setting to "Yes".

- **Target speed [target speed in knots] is much higher than the weapon's maximum target speed ([weapon maximum target speed in knots]):** This applies mostly to SAMs and ABMs. Most such weapons have a limit to how fast a target they can intercept, either because of kinematic limitations or because their seekers and guidance systems can cope with only so much weapon-to-target closing speed. For example most versions of the Patriot SAM can intercept tactical ballistic missiles, and the latest PAC-3 versions can tackle medium-range ballistic missiles, but ICBMs are a no-no.

- Solution: None really, unless the target somehow reduces speed. Use another weapon.

- **Target altitude ([target altitude in meters]) is higher than the weapon's ceiling ([weapon maximum target altitude in meters]):** Quite simply, the target is flying to fast for the weapon to reach up and intercept it.

- Solution: None, unless the target later descents. Use another weapon.

- **Target altitude ([target altitude in meters]) is lower than the weapon's minimum engagement altitude ([weapon minimum target altitude in meters])**: Most SAMs have a minimum engagement altitude below which their guidance systems suffer disproportionally from ground clutter and other factors. If the target is below that altitude then the weapon cannot engage.

- Solution: Wait for the target to rise higher, or use another weapon.

- **Weapon is not BOL-capable**: The unit is attempting a BOL (Bearing-only Launch) shot but the weapon does not support this.

- Solution: Execute a direct (non-BOL) shot or use another weapon.

- **Weapon needs a precise target location**: Related to BOL ability or lack thereof, this weapon needs a precise target location instead of an ambiguous estimate in order to have a reasonable chance of damaging the target. Guns usually fall into this category, as do other weapons like ASW rocket launchers.

- Solution: Obtain a precise target location and use the weapon, or use another weapon that is more tolerant of target ambiguity.

- **Weapon is not loaded on mount**: The weapon is present on the unit but not loaded on any of its mounts (e.g. stored in one of the magazines).

- Solution: Wait for weapon to be loaded on mount; if necessary assign reload priority to it.

- **Weapon is not suitable for this target**: The weapon is generally not suitable for this target type (e.g. torpedo against aircraft)

  - Solution: None; use another weapon.

- **Altitude too high (Valid: [weapon minimum launch altitude] to [weapon maximum launch altitude])**: Frequently happening with aircraft but can also apply to submarines. The unit is high above the weapon's launch envelope.

  - Solution: Dive until you are within launch parameters.

- **Altitude too low (Valid: [weapon minimum launch altitude] to [weapon maximum launch altitude]):** Flip-side of above; the unit is too low/deep to use the weapon.

  - Solution: Rise up until you are within launch parameters. (Careful! You usually go deep/low for a reason - to stay out of enemy sensors/weapons. Coming up may mean attracting the wrong kind of attention.)

- **Target is outside weapon boresight limits**: This is usually a problem with forward-firing weapons on aircraft (guns, rockets etc.) but may also manifest with fixed-azimuth (non-turreted guns).

  - Solution: Maneuver the unit so that the target is within boresight limits (typically dead ahead of the unit's front).

- **Target aspect ([target aspect in degrees]) is out of envelope for a stern-chase weapon**: Most often a problem with early AAMs but also certain old torpedoes: The weapon is not very maneuver-friendly and needs to be fired almost directly behind the target.

  - Solution: The unit must maneuver itself behind the target as much as possible.

- **Target aspect ([target aspect in degrees]) is out of envelope for a rear-aspect weapon**: Similar to the above, but with less tight constraints.

    - Solution: As above; get behind the target (or off to the side) and launch the weapon.

- **Weapon cannot engage this target for another [time value in sec] (OODA loop limitation)**: Each unit has a certain delay between first detection of a contact (or being given its data from elsewhere) and being able to target and engage it (the so called "OODA loop" – yes, the one from John "40-second" Boyd). With surprise threats this delay can often be fatal.

    - Solution: None really, just hope that the countdown runs out before the target becomes an imminent threat. If it is already an imminent threat (e.g. incoming anti-ship missile) and it looks like it's beating the clock, hope that the unit has automated point-defence systems that can ignore the OODA countdown and engage it. If not... brace for impact.

- **ASW torpedo must be dropped within 0.5nm of contact/aimpoint**: ASW torpedoes must be dropped close to the estimated target submarine position in order to have a fair chance of catching up to it before running out of fuel.

    - Solution: Get closer to the sub's estimated position and drop.

- **Target is out of weapon's range**: Quite simply, the target is out of this weapon's maximum range.

    - Solution: Get closer, or use a longer-ranged weapon.

- **Target is within weapon's minimum range**: Flip-side of the above; the weapon has a non-trivial minimum firing range and the target is within it.

    - Solution: Open the distance or use another weapon without the minimum range limitation.

- **Horizontal range to target ([range to target in nm]) is greater than the weapon's downrange at this altitude ([weapon downrange in nm]):** This most often happens with aircraft-launched ballistic weapons (guns, rockets, unguided bombs etc.). The higher the altitude of the carrier aircraft, the greater the distance at which it can literally toss the weapon towards the target. At higher altitude this distance shrinks dramatically.

  - Solution: Get closer, or rise to higher altitude to increase toss range. Both these options carry counter-detection/engagement risk so choose carefully (or use another weapon with better standoff).

- **Target is within 5 nm and outside the weapon mount's engagement arc**: This typically applies to ship turrets/launchers. Command currently ignores mount arc limits for engagements at distances over 5nm; the implicit assumption is that at such distances captains micro-maneuver their ships to unmask their weapons as necessary, and often even perform "over the shoulder" shots with guided weapons. At distances below 5 nautical miles however, there is no time or space for maneuvers and shot-tricks; a ship engages a threat only with the weapons it can bring to bear down the threat's azimuth. This can make life difficult for large ships trying to engage smaller, more agile opponents or pop-up threats like sea-skimming anti-ship missiles.

  - Solution: Try to turn around so the weapon you want to use is unmasked. If the target is a high-speed incoming threat (torpedo, missile e.g.) you have very little available time so this may possibly not work.

- **Cannot fire weapon through ice**: You are attempting to engage a target through the ice pack (e.g. shoot at a submarine with an air-dropped weapon).

  - Solution: None.

- **Cannot fire missile while under ice**: You are attempting to fire a missile from a submerged submarine under the ice.

  - Solution: None.

- **Cannot use torpedo on ice**: You are attempting to drop a torpedo from an aircraft/helicopter to an under-ice submarine.

  - Solution: None.

- **Gun has no local control and no available directors**: The gun is designed to work with a fire-control sensor on the same unit which is currently out of action (for any number of reasons: Damaged/destroyed, jammed, cannot detect target etc.), and it (the gun) has no local/manual control as backup. It is essentially "blind". NOTE: This limitation appears only if you have enabled the "Detailed gun fire control" realism setting.

  - Solution: If the FC director suitable for the gun is functioning but unable to detect the target, do anything necessary to allow it to do so (counter jamming, change heading to unmask director etc.). Otherwise use another weapon.

- **Weapon must detect target prior to firing**: The weapon must "lock on" to the target on its own prior to launch, and cannot be fired "blindly" with the expectation of post-launch lock. Most IR-guided AAMs fall in this category.

  - Solution: Position the firing unit in optimum position for the weapon to detect the target (e.g. in a dogfight, try to get on the target's tail as much as possible). The weapon will do the rest.

- **No weapons director available to illuminate the target**: The guided weapon (usually missile) needs a compatible FC director to provide illumination to the target in order to guide the weapon, and no such sensor can be found (in an operative state). Similar to gun-fire control limitations.

- Solution: If the FC director suitable for the gun is functioning but unable to detect the target, do anything necessary to allow it to do so (counter jamming, change position to obtain line-of-sight etc.). Otherwise use another weapon.

- **All illumination channels suitable for this weapon are in use**: Related to the above; we found a suitable FC illuminator for the weapon but all available illumination/guidance channels are in use.

  - Solution: This indicates that one or more engagements are currently in progress. Wait for the engagement(s) to conclude so that the illumination/guidance channels can be freed up.

- **All directors are unable to illuminate this target (insufficient reflection, no LOS etc)**: The guided weapon (usually missile) needs a compatible FC director to provide illumination to the target in order to guide the weapon, and no such sensor can be found (in an operative state). Similar to gun-fire control limitations.

  - Solution: If the FC director suitable for the gun is functioning but unable to detect the target, do anything necessary to allow it to do so (counter jamming, change position to obtain line-of-sight etc.). Otherwise use another weapon.

- **No datalink channel available to guide this weapon**: The weapon has a mandatory datalink (such as the guidance wire on a TOW anti-tank missile) and no channel is currently available.

  - Solution: This indicates that one or more engagements are currently in progress. Wait for the engagement(s) to conclude so that the datalink channels can be freed up.

- **Target is out of weapon's DLZ**: The target is out of the weapon's dynamic launch zone (DLZ; see "DLZ and why it's important" in the Appendix at the end of this manual).

- Solution: Get closer to the target or wait for it to change its heading/speed/alt so that it falls within the weapon's DLZ.

- **The target's downrange ambiguity ([weapon downrange ambiguity in nm]) is larger than [some percentage] the weapon's acceptable limit ([weapon acceptable downrange ambiguity in nm]):** This is directly related to the "Shooting ambiguous targets" doctrine setting. If the target's uncertainty area is such that its range ambiguity towards the firing unit is too large, the weapon will not fire. For example if the target's distance has a +/- 10nm margin of error, and the weapon has an acceptable limit of 2nm (seeker limit, warhead damage area etc.) then the unit will refuse to fire.

  - Solution: If you can (you may not be allowed to), set the firing unit's "Shooting ambiguous targets" doctrine setting to "Optimistic" or even "Ignore". This will make the unit all too happy to use the weapon against the target even with a large margin of error. Beware that this means a large probability that the weapon will miss altogether.

- **The target's downrange ambiguity ([weapon downrange ambiguity in nm]) is larger than [some percentage] the weapon's acceptable limit ([weapon acceptable downrange ambiguity in nm]):** As above, this time with regards to target cross-range instead of distance ambiguity.

  - Solution: If you can (you may not be allowed to), set the firing unit's "Shooting ambiguous targets" doctrine setting to "Optimistic" or even "Ignore". This will make the unit all too happy to use the weapon against the target even with a large margin of error. WARNING: Large angular margins of error mean that you have to be really lucky to get a successful hit.

6.4.3. MOVEMENT AND FORMATION ORDERS

Throttle/Altitude: Select a unit(s) or group and either press "F2" or select Throttle / Altitude on the Unit Orders drop down menu. The speed and altitude/depth menu opens. Maximum and Minimum values of speed or altitude/depth are set by the unit's capabilities and terrain.

- **Speed**: Either select one of the preset throttle settings or use the slider to select the desired speed. The unit(s) will respond to the command immediately. Select one of the presets or use the slider to set the desired altitude/depth. If the unit's altitude/depth is set by an assigned mission it may be overridden by checking the Manual override checkbox.

- **Altitude/Depth**: Either select one of the presets or use the slider to set the desired altitude/depth. If the unit's speed is set by an assigned mission it may be overridden by checking the Manual override checkbox.

- **Special Case for Submarines**: Submarines have special depth options.

  - **Just above the Layer**: The submarine will operate just above the Thermal Layer. This is optimal for use of towed array sonar.

  - **Just Below the Layer**: The submarine will operate just below the Thermal Layer.

  - **As deep as possible**: The submarine will operate at its test depth. If the sea floor is above test depth, the submarine will operate in a terrain hugging mode just above the bottom.

Plot Course: A unit's course is a single waypoint at the destination or a series of waypoints to a destination. The unit's current course is displayed on the map as line segments with waypoints designated by small boxes at the nodes.

- **Set Course**: Select a unit or group and either press "F3" or select Plot Course on the Unit Orders drop down menu. Click on the map at the desired waypoint location. Continue to add waypoints as desired until the final waypoint has been plotted, then click "F3" or Plot Course to finish.

- **Edit Course**: To edit or change a course or move a waypoint, "Left Click" on a waypoint and drag it to the desired location which will create a new waypoint.

- **Adding Additional Waypoints**: Select a unit or group. Does not work with multiple units/groups selected. Left click on the last waypoint or any waypoint and press F3. Left click on the map to place additional waypoints. Press "Esc" after the last waypoint is placed.

Edit Formation: Selecting this opens the Formation Editor dialog, which allows the player to assign a unit's location within a group's formation. You can select this function by pressing the F4 hotkey as well.
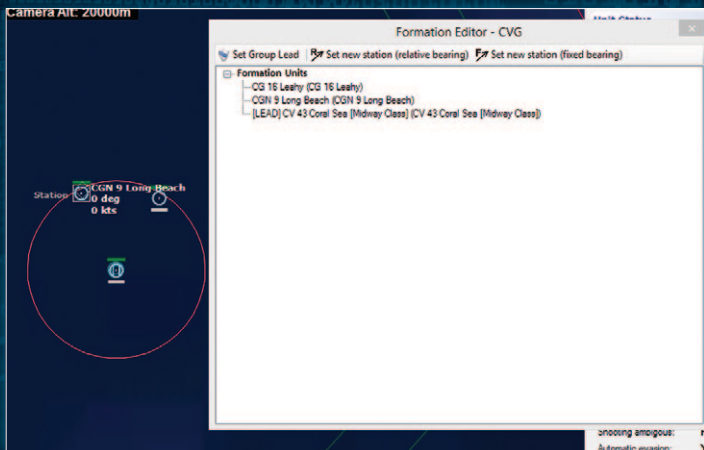
Group Lead: The lead platform is the center of the formation, usually a HVU (high value unit). When forming groups the game will try and pick the best possible candidate but players can change if they desire to do so. The Group Lead is shown in the editor window with "[LEAD]" in front of its listing.

Setting Group Lead: Select the desired unit from the platform display drop down list and click the Set Group Lead button.

Setting Patrol Stations: Players can set patrol stations of ships within the formation. To do so just select the ship from the formation editor listing so it is highlighted, click the set new station button (relative or fixed bearing) and then click a point on the map where you would like that position to be. You will know its created when you see a diamond marking the position with the word station next to it on the display. The unit will then move towards it when the clock begins.

Set new Station (relative bearing): The assigned unit will always maintain its position relative to a group's course. This formation setting is most

useful for ASW units, mine sweepers etc. as it clears a path for the HVU.
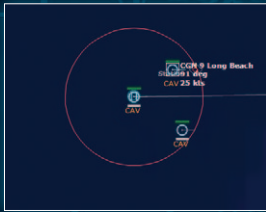
Set new Station (fixed bearing): The assigned unit it will maintain its position relative to the lead regardless of course. This setting is most useful to put units between the HVU and a known threat.

Magazines: This function opens the magazine dialog which allows you to view and manage the ammunition in your magazines. The F4 hotkey and the magazine button on the unit status dialog will open this dialog as well.

In edit mode you can add new weapons records to magazines and you can edit
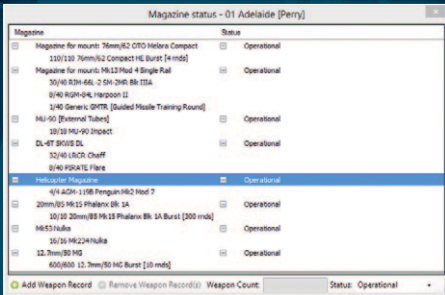
ammunition amounts in the weapons records. This allows you to supply mounts and hosted aircraft with the weapons and ammunition needed to any you have added to the host unit.

6.4.4. AIR OPS

This function launches the Air Ops dialog which allows you to manage and edit the aircraft hosted on your unit or group.

Clicking the button launches the Air Ops dialog which is used to manage hosted aircraft. You can also get to this dialog by pressing the F6 hotkey on your keyboard or pressing the aircraft button on the right side information panel.
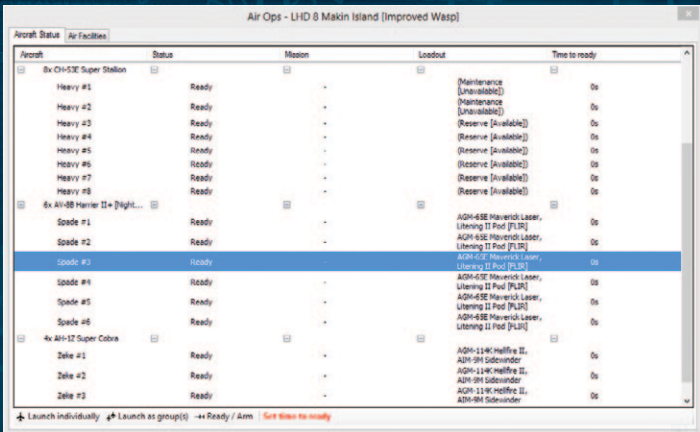
The air ops dialog has two tabs: Aircraft Status and Air Facilities.

6.4.5. AIRCRAFT STATUS

The Aircraft Status dialog groups aircraft by type with individual units shown in drop-down lists. You can expand and retract the lists by clicking the + and - button next to each unit type.,

The columns display current information on the hosted unit.

Aircraft: At the group level displays the unit count and type name. At the unit level, displays the unit's given callsign.

Status: Shows the current status of the aircraft. These include:

- Ready: A/C is available for use.
- Readying: A/C is in the process of reloading and refueling.
- Taking off: A/C is in the take-off process

Mission: Shows the name of the mission the aircraft is assigned to. The field will be blank if unassigned.

Loadout: Shows the current Loadout of the aircraft or the loadout being fitted if the aircraft is being readied.

Time to Ready: Shows the time remaining until the aircraft is available. 0s is shown when the aircraft is ready. When an order is given for an aircraft to launch the launch time is then displayed.

Launch Individual Button: Pressing this button after selecting one or more aircraft will order them to launch and as individuals.

Launch as Group(s): Pressing this button after selecting numerous aircraft will launch them as a group. If the selected aircraft are of different

types and loadouts they will be launched as separate groups or individuals by type and loadout.

Ready/Arm: Launches the Ready Aircraft Dialog which allows you to change the loadout of your aircraft with available munitions.

The ready aircraft dialog displays a list of available loadouts, the ready time and attack altitude the primary munitions are deployed by the AI at. If you click on each row the stores fields at the bottom will display the individual components (munitions, pods, tanks, sonobuoys) for each loadout and the number available in the parent units' aircraft magazine.

To choose one simply select the weapon row you like and press the Ok-ready button or Ready Immediately (Scenedit) button.

If the parent unit does not have the unit you can add it by click the check base magazine button at the top which allows you to view the magazine dialog and edit munitions.

Set Time to Ready: You can set a value for when you'd like an aircraft to become available using this dialog. Just fill in the days, hours and minutes filed to complete.

6.4.6. AIR FACILITIES TAB:
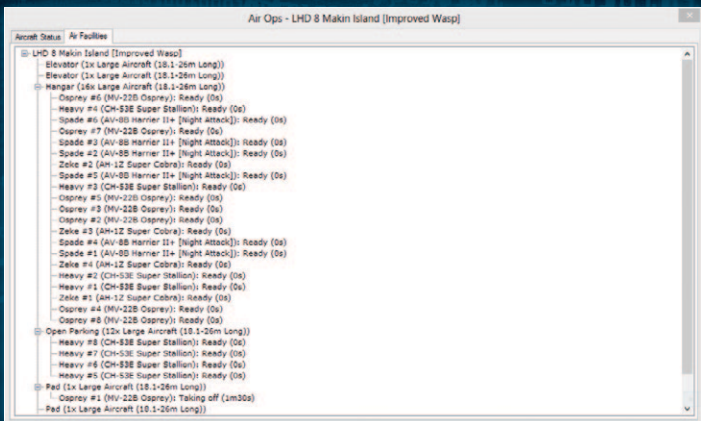
This dialog displays hosted aircraft grouped by the units and component facilities (hangars, open parking spots, revetments, elevators etc.). You can follow the progression of aircraft from hangar to elevator/taxiway to pad/runway. A launch time is provided.

6.4.7. DOCKING OPS

This function launches the Docking Ops dialog which allows players to manage embarked boats. This function can also be called with the F7 hotkey or clicking the boats button on the right hand information display.
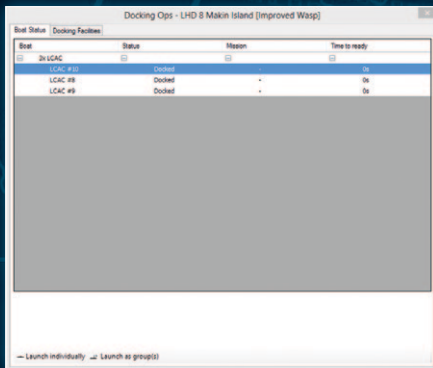
The **Boat Status tab** displays docked boats grouped by type. The name at the group level gives a unit count and type name and at the unit level gives the individual unit name, status (locked, launching), assigned mission and time to ready or launch.

The launch individually button allows you to select one or more row and launch them as individuals. The launch as group allows you to select one or more rows and launch them as a group by type.

6.4.8. WEAPONS

This function launches the Weapons Dialog which displays information on all weapon mounts on a platform. You can also launch it by pressing F8 on your keyboard or pressing the weapons button on the right side information display.

The weapons dialog displays a list of all weapons grouped by mount. The black root level text describes the mount, its capacity

and status. The subset blue weapons record text describes the individual weapons in the mount, the time to fire and a checkbox that allows players to mark certain weapons as the reload priority in the case of a mount that shoots different weapons and ammunition. The gray subset text notes the capacity to carry the weapon but the lack of any.

Add Weapons Record button: Allows players to add a weapons record to any mount by selecting the mount and pressing this button.

Remove Weapon Record(s) button: Allows players to remove weapons records by selecting the record(s) and pressing this button.

Add Mount button: Press this button to add a new mount.

Remove Mount button: Select the mount(s) and press this button to remove them.

Edit Weapons: To change the number of weapons in a record select the record, click the change button, enter a numeric value in the weapons field and then click set.

6.4.9. SENSORS

This function launches the sensor dialog that displays a list of all sensors on a unit. This includes the sensor type, status and a check box showing whether the sensor is active or not. This function can also be activated by hitting the F9 key or pressing the sensors button on the display.
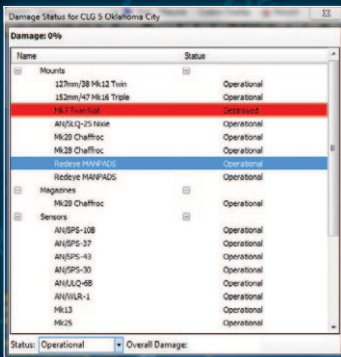

To make any changes you will need to uncheck the Unit obeys EMCON check box as EMCON setting are inherited from unit/mission or side settings. You can then activate or deactivate each sensor by

either checking off the active check box in the list or activating them in groups by using the Quick selection check boxes. Keep in mind that passive sensors are always on and cannot be turned off.

The **Add Sensor** button launches the Add sensor dialog which allows you to add a sensor to a platform.

The **Remove Sensor** button works by selecting a sensor and then pressing this button.

Damage Control: This function opens the Damage Status dialog (F10 hotkey) and "Damage Cntrl" button in the Right Side Information Panel as well. This displays the damage conditions of the unit and its sensors, mounts and magazines.

In **Editor mode**, you can change the values of these to add damage to ships and units in constructed scenarios.

6.4.10. EXCLUSION ZONES

Selecting this function allows the player to create an air, ship, submarine or land unit exclusion zones. Exclusion zones in COMMAND are designated areas that, if entered by an object not belonging to the player, such as a ship or planer, will change the player-sided posture to something the player has previously specified.

A good example of where this might be useful is if you wanted to create a "No Fly Zone" similar to what was over Iraq in the 1990s. You could designate an area and then make all air contacts flying into the zone be designated as unfriendly (to be intercepted but not fired up on) or hostile (to be immediately attacked) by creating an

intercept mission designed to launch upon detection of a unfriendly or hostile target.
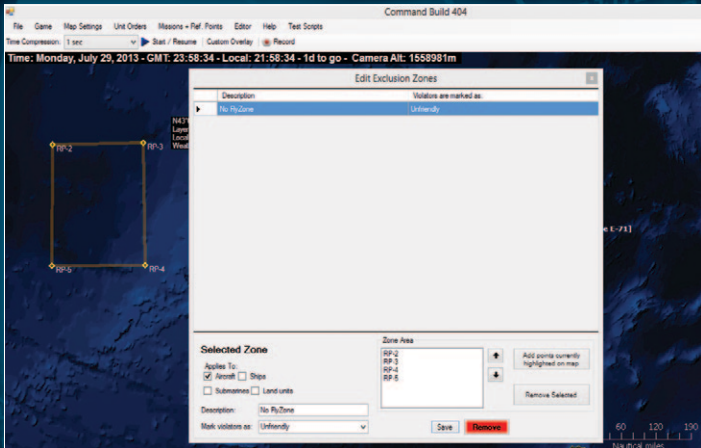
To create an exclusion zone:

1. Drop some reference points to mark an area. It is suggested you use the control right click function to define an area (drop 4 reference points). Please make sure they are activated by clicking them.

2. Click on Exclusion Zones from the Unit Orders drop down and select Create new from selected reference points or Edit Existing which will launch the Edit Exclusion Zones dialog.

3. Notice that your reference points now have a border drawn. You can click and drag reference points to change the zones shape.

4. You can designate the zone to apply to Aircraft, Ships, Submarines, land units or all by checking all off.

5. You can name the Zone by filling out the description.

6. You can specify a posture using the drop-down in the Mark Violators field.

7. You can designate and undesignated reference points using the Zone area fields, To add click and highlight one or more reference points on the map.

8. To remove reference points select them in the zone area field and click remove selected.

9. To save your exclusion zone click the save button.

10. To remove a zone, select the zone from the list at the top of the dialog and press the remove button.

11. To close, click the red X on the top right-hand side of the dialog.

6.5. MISSION AND REFERENCE POINT DROP-DOWN MENU

This drop down menu's purpose is to create missions. Depending on the mission type, a player may have to select a unit or drop reference points prior to launching the mission editor.

6.5.1. ADD NEW MISSION

Function calls the new mission dialog which allows a quick creation of a mission. Some missions require that you either select a target or add reference points prior to creating them. Please review mission descriptions below.
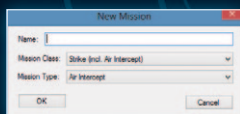
- Name Field: Enter a name for your mission

- Mission Class Drop Down: Choose the mission class of your mission.

- Mission Type: Choose a mission type. They type's available in this drop down vary based on the Mission Class you chose.

- Okay button launches the Mission Editor.

6.5.2. MISSION EDITOR

Function launches the mission editor which allows you to create, edit and manage missions.
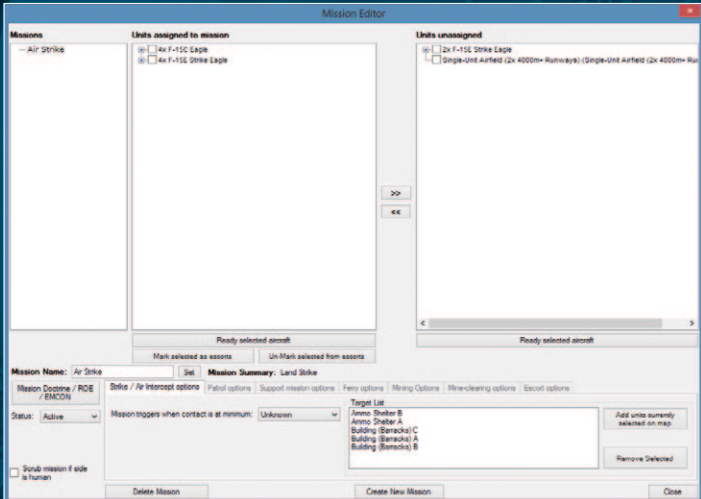
The general workflow of assigning units to missions is as follows. First select the mission you would like to add a unit to on the far left Mission List by clicking to highlight it.

1. Then go to the Units Unassigned list on the right and select the units you would like to assign to the mission by selecting the open checkboxes next to them. The dialog does group aircraft of the same type and loadout together, so you may have to expand the group by clicking the + symbol next to them or select the entire group by selecting the root level checkbox.

2. When satisfied, click the left arrow which then populates the Units Assigned to a Mission list. If you'd like to un-assign a unit it's the reverse process. Select the unchecked box next to

the unit in the Units Assigned to a Mission list and click the right arrow.

3. Under these lists are three buttons which allow you to edit the units in your list.

Ready Selected Aircraft: Selecting a checkbox next to an aircraft in the list and pressing this button calls the ready aircraft dialog. This allows you to make quick changes to aircraft loadouts.

Mark aircraft as escorts: Selecting checkboxes next to aircraft allows you to set them to be air to air or SEAD escorts within a strike group. When you do you will notice a [Escort] marker in their descriptions.

Un-mark from escorts: Selecting checkboxes next to aircraft set to escort sets them to conduct normal mission behavior and not escort behavior.

The fields, buttons and dialogs at the bottom of the dialog allow you to change mission behaviors or parameters.

Mission Name Field: Allows you to edit the selection mission's name. Just delete the current value and populate with what you'd like it to be and press the set button.

Status: Allows you to set the mission as active or inactive. This serves two function. Setting a mission to inactive allows you to manually turn the mission on and off without deleting it. There is a mission status change action in the scenario editor's event editor. This allows designers to set a mission as inactive and use a range of triggers to activate it.

Scrub Mission if Side is Human checkbox: If checked, this mission will not populate into a players mission list in play mode. This only appears in edit mode.

6.5.3. MISSION PARAMETER TABS

These all vary based on mission type. Please review mission type descriptions below to understand how options work.

Delete Mission Button: Selecting a mission and pressing this button deletes it.

Create New Mission Button: Pressing this button launches the Add New Mission dialog.

Close Button: Close the Mission Editor Dialog.

6.6. MISSIONS

AI-controlled missions are tasks that platforms or groups of platforms can be assigned. The various mission types can have subtypes and their own Doctrine and EMCON. Missions are either Area Oriented or Task Oriented. Area Oriented missions such as Patrol Missions are defined by Reference Points, Task oriented missions such as Strike are defined by target units, Reference Points (area)

Selecting an area based mission in the mission editor will show an outline of the mission area on the map.

There are six mission classes.

6.6.1. FERRY MISSION

A Ferry Mission transfers an air unit from one location to another. The destination for a Ferry Mission is always a Unit, Facility, or Base that can house the unit to be ferried. This can include friendly and neutral air facilities.

To create a ferry mission:

1. Select the destination unit or facility

2. Add a new mission and when the dialog launches add a mission name and select the ferry mission type. Click the ok button which will launch the mission editor.

3. Assign the desired units to the mission

4. Set the Mission Doctrine/RoE/EMCON settings by pressing the button.

5. Set the Ferry Mission specific settings "Ferry Behavior":

   a. One-Way: The mission will execute one time and will automatically scrub once complete.
   b. Cycle: The mission will cycle between the start and destination points after the normal turnaround time for that unit at each end.
   c. Random: The mission will randomly trigger a cycle.

6.6.2. SUPPORT MISSION

Support missions allow players to assign specific units to follow waypoint-driven paths. They are most useful for AEW (airborne early warning), Refueling (air to air refueling) and reconnaissance missions.

To create a support mission:

1. Create and Select the desired Reference Points on the map

2. Create a new mission, select the support mission category and type in a name for the mission. Click the OK button the launch the mission editor.

3. A line will appear on the map showing the support mission course (loop) path. The loop path may be adjusted by moving or editing the reference points.

4. Assign the desired unit(s) to the mission.

5. Set the Mission Doctrine/RoE/EMCON settings by pressing the button

6. Set the Support Mission specific settings:

   ▪ 1/3 RULE: If checked, will keep 1/3 of the available aircraft airborne if possible.

   ▪ ONE-TIME ONLY: The mission will execute one time only and will be deleted and assigned units freed after completion.

      a. Navigation Type:

b. Continuous Loop: The A/C will loop around the mission's assigned reference points until Bingo Fuel.

- Single Loop: The A/C will make one circuit around the mission's assigned reference points and return to its base.

- Transit Throttle: Throttle setting for the aircraft while transiting to the first mission reference point. Settings are Loiter/Creep, Cruise, Full, Flank/AB.

- Loop Throttle: Throttle setting for the aircraft while executing the support loop. Settings are Loiter/Creep, Cruise, Full, Flank/AB.

- Mission Reference Points. Reference points may be added or deleted to/from the mission. To add make sure the reference points are selected on the map and click the add

7. Verify on the map the Support Mission path shown with a green line.

6.6.3. PATROL MISSION

A patrol mission is an area mission defined by reference points. Any mobile unit may be assigned a patrol mission. If a facility or group is assigned this mission, all of its A/C will be assigned this mission.

Patrol Mission Types:

- AAW PATROL: Units assigned to this mission will actively search for and investigate/identify airborne contacts.

- ASW PATROL: Units assigned to this mission will actively search for and investigate/identify sub-surface contacts.

- ASuW PATROL (NAVAL): Units assigned to this mission will actively search and investigate/identify waterborne contacts.

- ASuW PATROL (GROUND): Units assigned to this mission will actively search and investigate/identify contacts on land.

- ASuW PATROL (MIXED): Units assigned to this mission will actively search and investigate/identify any non-submerged contact.

- SEAD PATROL: Units assigned to this mission will actively search and engage targets emitting radar.

To create a patrol mission:

1. Create/select at least three reference points on the map to define the patrol area.

2. Create a mission, select the patrol mission class and types from dropdowns, type in a name and click the OK button which will open the mission editor.

3. A shaded box is shown on the map depicting the patrol area. A folded box or bow-tie shape is the result of the Reference Points not being placed sequentially around the perimeter of the desired area. It is best to use the right-control-click Define Area function as it will drop four reference points in the correct order

4. Assign appropriate units to the mission.

5. Set the Mission Doctrine/RoE/EMCON settings by pressing the button

6. Set 1/3 RULE: If checked, will keep 1/3 of the available aircraft airborne if possible.

7. Set "Investigate Contacts Outside Patrol Area" If checked, the units assigned to the mission will leave the patrol area to investigate/identify nearby contacts. If unchecked they will restrict their activities only to their defined area.

8. Set "Active Emissions Only Inside Patrol Area" If checked, the units will transit to the patrol area with radars off to avoid giving away the location of their parent unit.

6.6.4. STRIKE MISSION

This mission type also includes Air Intercepts. Strike missions are attack missions with specific or categorized targets and defined attackers.

Strike Mission Types:

- AIR INTERCEPT: Units assigned to this mission will attempt to intercept and engage the selected Air Contacts.

- LAND STRIKE: Units assigned to this mission will transit to within the selected weapon's range and engage the selected land targets.

- NAVAL ASuW STRIKE. Units assigned to this mission will transit to within the selected weapon's range and engage the selected surface contacts.

- ASW STRIKE: Units assigned to this mission will transit to within the selected weapon's range and engage the selected submerged contacts.

To create a strike mission against a categorized target:

1. Add a new mission and choose the strike mission class.

2. Choose a mission type (air intercept, land strike, naval ASuW strike, ASW Strike) which defines the category of targets your unit will hunt for.

3. Click OK, which will launch the mission editor.

4. Assign appropriate units to the mission.

5. Set the Mission Doctrine/RoE/EMCON settings.

6. Define trigger options

Keep in mind that this mission launches against targets on a first-detect basis. It is most useful for ASW or air intercept strikes.

To create a strike mission against a specific target or set of targets:

1. Select or group select a set of targets on the map.

2. Add a new mission and choose the strike mission class and category you would like to use. Click the OK button when complete which launches the mission editor.

3. Assign the appropriate unit to the mission. You can look in the platform display to select the best platform and aircraft loadout to use.

4. Select an appropriate mission trigger.

5. Set the Mission Doctrine/RoE/EMCON settings.

6. Click Add Units to populate the Target List. If you'd like to remove any units, select the entry in the list and click the Remove Selected button.

Mission Trigger Options:

- UNKNOWN: Mission will launch at its set time regardless if the target side and disposition is known.

- UNFRIENDLY: Mission will launch at its set time if the target is at least classified as Unfriendly. If the launch time is reached and the unit is not classified as at least Unfriendly, the mission will hold and only trigger once the target classification changes to at least Unfriendly.

- HOSTILE: Mission will launch at its set time if the target is classified as Hostile. If the launch time is reached and the unit is not classified as Hostile, the mission will hold and only trigger once the target classification changes to hostile.

6.6.5. MINING MISSION

All mining missions are defined, in terms of area, by reference points. Units assigned to this mission will place mines randomly within the defined area, must be capable of deploying mines, and must have mines available.

To Create a Mining Mission:

1. Create and select the reference points designating the area to be mined.

2. Add a new mission and select the Mining Mission type.

3. Add suitable units to the mission. The only effective units for this mission are certain surface ships, submarines, and aircraft that are specially equipped to dispense mines. The mine layer must also have mines available.

4. Set the Mission Doctrine/ RoE/ EMCON by pressing the button.

5. Set 1/3 RULE: If checked, will keep 1/3 of the available aircraft airborne if possible. Has no effect if aircraft are not assigned to the mission.

6. Set the "Arming Delay." This sets the amount of time before the mines will arm after being deployed. The default setting is 2 hours. This time allows the unit(s) laying the mines to safely exit the area.

7. Verify the proper reference points are activated and add by pressing the Add Points Currently Highlighted on Map button, which populates the Edit Mining Area reference point list. You can remove any points by selecting them in this list and pressing the Remove Selected button.

6.6.6. MINE-CLEARING MISSION

All mine-clearing missions are area missions defined by reference points. This mission type is also used to locate mines. Units assigned to this mission will patrol their mission area hunting for mines. If mine(s) are located, the unit(s) will maneuver in such a way to place them in their sweep path. Only units equipped to sweep mines can do so; note that they still risk damage during the sweep operation. Units equipped with mine countermeasures equipment will have a

"MCM" button on their information panel. MCM-capable helicopter units have a variety of specific load-outs for detection and sweeping, some specific to a type of mine. Not all mines are sweepable.

Creating a Mine Clearing Mission:
Create and select the reference points designating the area to be cleared of mines.

Create a new mission, select the Mine Clearing Mission category and type in a mission name. Click OK and the mission editor will launch.

Add suitable units to the mission. The only effective units for this mission are certain surface ships, submarines, and aircraft that are specially equipped to detect and/or sweep mines. Some units only have a mine-detection (not sweeping) capability, and will patrol the area attempting to detect mines. Units with minesweeping equipment will patrol their mission area hunting for mines.

Set the Mission Doctrine/ RoE/ EMCON by pressing the button.

Set 1/3 RULE: If checked, will keep 1/3 of the available aircraft airborne if possible. Has no effect if aircraft are not assigned to the mission.

Verify the proper reference points are activated and add by pressing the Add Points Currently Highlighted on Map button, which populates the Edit Mine Clearing Area reference point list. You can remove any by selecting reference points in this list and pressing the remove selected button.

6.7. REFERENCE POINTS

Reference points are markers that can be placed on the map. Reference points are used to define mission areas, objectives, and marking locations.

Placing Reference Points
You can place reference points on the game display in several different ways:

- Pressing the Ctrl button on the keyboard and right-clicking the mouse will give you two options that give that allow you to quickly add reference points.

- Add reference point: Selecting this will let you select a point on the map to drop a reference points.

- Define area: Select this will let you left click drag out an area defined by four reference points. This is very useful in creating square areas for missions.

- You can also drop a reference point from the menu by selecting add reference point from the Mission + Ref Points drop down menu.

Selecting and Deselecting Reference Points

To select and deselect reference points just click on them on the UI. With no special properties they appear as gold diamonds when selected and dim x's when not. You can click and drag to select more than one reference point.

Deleting Reference Points: To delete a reference point, select the reference point and select Delete Selected Ref Points from the Missions and Ref. Points drop-down menu.

Moving Reference Points: If unlocked, you can move reference points by clicking and dragging them on the map.

Naming Reference Points: By default, reference points are given arbitrary names based on unit count when added. To rename the reference point make sure it is the only reference point selected, and press the "R" button on your keyboard. The Rename Reference dialog should appear allowing you to change it. If it does not, you likely have another reference point selected.

6.7.1. CHANGING REFERENCE POINT PROPERTIES

You can change several properties of reference points in the game in the Mission and Ref. Points drop-down.

Making Reference Points Relative: These properties give you the ability to anchor reference points to moving surface unit of your or a friendly side. These are set by selecting reference points, choosing the property in the drop-down list and then selecting the unit or group in the display they will be relative to. This allows you to create mission(s) with defined areas that move relative to a certain unit or its course, such as assigning any aircraft to a mission that protects a moving surface unit (AAW, ASW) or units.

Make selected Reference Points Relative (Fixed) bearing to... : Reference points set to this maintain their position relative to the selected unit or group. This is useful when you know the bearing of a known threat and want to keep a patrol between it and the selected unit regardless of the unit's course. Reference points that are set to this always have an [f] in their name.

Make selected Reference Point(s) relative (Rotating) bearing to ... : Reference points set to this maintain their position relative to the selected unit or group's course. This is useful when you would like to patrol ahead of a group or unit regardless its course. Reference points that are set to this always have an [r] in their names.

Locking and Unlocking Reference Points: You can lock and unlock reference points in the game by selecting the reference points and choosing the Lock and Unlock Ref. Point(s) selections in the Mission + Ref Points drop down menu. Locked reference points appear as padlocks are unchangeable by players in game mode.

Delete Selected: Deletes any selected reference point.

7. EDITOR DROPDOWN MENU

The following functions are only available while in the editor mode. Enter the editor mode by going to the main menu and click "Create new blank scenario" or "Load existing scenario".

Scenario Times and Duration: This drop down allows you to set the current scenario time, the scenario start time, scenario duration, complexity, difficulty and location.

**Scenario Current Time**: Sets the current scenario time.

- Enter a date by either selecting and manipulating the individual elements of the date field (day name, Month, Day, Year) or clicking the calendar icon which will launch a small calendar dialog that can be used to choose a date.

- Enter a time by manually manipulating the hour, minute and second fields or typing them in.

Scenario starts on: Sets the time the scenario actually starts on.

- Enter a date by either selecting and manipulating the individual elements of the date field (day name, Month, Day, Year) or clicking the calendar icon which will launch a small calendar dialog that can be used to choose a date.

- Enter a time by manually manipulating the hour, minute and second fields or typing them in.

Scenario Duration (And lasts for) Field: Enter a numeric value in the days, hours, mins (minutes) fields to set this.

Complexity: Allows editor's to set a scenario complexity using a 1 to 5 scale. This will be reflected by the Complexity green bar scale in the load scenario dialog.

Difficulty: Allows editor to set a scenario difficulty using a 1 to 5 scale. This will be reflected by the Difficulty green bar scale in the load scenario dialog.

Location: Allows editor to fill in a text value noting location that will be displayed in the location field of the load scenario dialog.
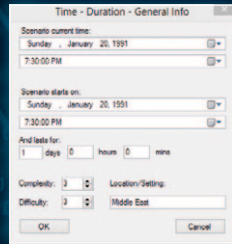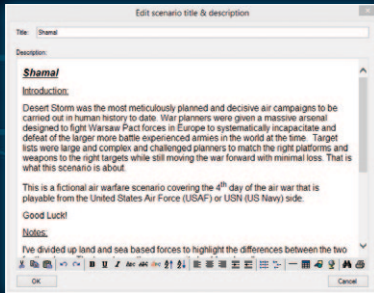
Title and Description: This dialog allows editor's to add the scenario Title and descriptive text that appears in the Load Scenario Dialog.

Title Field: Enter a text value to give the scenario a title. It will appear in the load scenario dialog under title.

Description: This field allows editors to add text, pictures and links to the scenario description that appears in the load scenario dialog lt. It is copy and paste capable and includes most common Windows text edit functions.

To add text: Type and edit using the appropriate buttons. You can highlight over existing text and use the function buttons to make edits.

Pictures: Add pictures as needed.

Links: Add links to background materials, etc. as needed.

Change Database: This drop down dialog allows editors to see the current database and select a database they would like to use.. There are two different databases to choose from and be one or more variants of each depending on updates. To select a database select the version you would like by clicking on the version and a checkmark will appear next to it in the list.

7.1. SCENARIOS VS. DATABASES

COMMAND has two databases that store all information on platforms (aircraft, ships, submarines, ground facilities and satellites) and components (weapons, sensors, mounts, magazines, communications gear, etc.) used in the simulator. The CWDB database covers the years from 1950-1979, and the DB3K database covers 1980 to the near future.

The databases contain a myriad of platforms. Platforms that span 1980 – those that exist in both databases – are automatically synchronized to ensure they are identical. Below is a list of the number of platforms present in the 1980-onwards database plus unique platforms in the 1950-1979 database.

Aircraft: 3000 + 2100 = 5100 total
Ships: 2250 + 1500 = 3750 total
Submarines: 450 + 300 = 750 total
Ground facilities: 1850 + 650 = 2500 total
Satellites: 60 including 700 pre-defined orbits
Weapons: 2600 + 200 = 2800 total
Sensors: 4700 + 250 = 4950 total
Pre-defined aircraft loadouts: 15900 + 2600 = 18500 total
Weapon mounts: 2050 + 350 = 2400 total
Weapon magazines: 1100 + 250 = 1350 total

The two databases come in different versions. New versions contain additional platforms and components, or fixes to the existing ones. Scenarios store information about what database version they were built with, and when a scenario loads it automatically loads the correct database. This prevents errors caused by scenario/database mismatches, and ensures that the scenario will play exactly the way the scenario author intended.

7.1.1. SCENARIO MAINTENANCE

When a scenario is created and saved it is linked to the database it was created with. Some information from the database is saved with the scenario, which in effect locks a scenario to a certain database version. Therefore, the simulator must always load the correct database for the scenarios.

When a platform or component in the database is updated and you want a scenario to reflect those changes, you must migrate (aka rebuild) the scenario to the latest database. Typically when a scenario is under construction and you want to use a platform that was recently

added to the database. Or when the latest database contains fixes made to existing platforms or components that you would like to take effect in the scenario.

Rebuilding a scenario with the latest database has to be done in the scenario editor. In addition to rebuilding single scenarios it is also possible to rebuild multiple scenarios in one operation. Single scenarios can be either shallow rebuilt or deep rebuilt. Multi-rebuild of scenarios uses the deep rebuild method.

To open the Scenario Migration window, first load the desired scenario in the Scenario Editor. Then go to 'Editor' => 'Upgrade scenario to latest DB version':

7.1.2. REBUILD SINGLE SCENARIO

To rebuild the currently loaded scenario press the Rebuild Current Scenario button. The lower half of the window will display log messages from the rebuild process. When the Apply INI File option has been selected you will be asked to select the scenario config file (INI file, described later) that shall be used during the rebuild.

7.1.3. REBUILD MULTIPLE SCENARIOS

To rebuild multiple scenarios in one operation press the Deep-Rebuild All Scenarios In List button. Follow the instructions in the lower half of the window, including selecting the location of the Scenario List file. This file contains a list of the scenarios to rebuild along with their associated scenario config files (INI files, described later). The Scenario List file has to be generated manually and typically looks like this:

```xml
<?xml version="1.0" encoding="utf-8"?>
<ScenarioList>
   <Scenario>
      <ScenarioFilePath> <!-- C:\Command\Scenarios\Battle of
Chumonchin Chan.scen --> </ScenarioFilePath>
      <ConfigFilePath>   <!-- C:\Command\Scenarios\Battle of
Chumonchin Chan.ini --> </ConfigFilePath>
   </Scenario>
   <Scenario>
      <ScenarioFilePath> <!-- C:\Command\Scenarios\Battle of
Latakia.scen --> </ScenarioFilePath>
      <ConfigFilePath>   <!-- C:\Command\Scenarios\Battle of
Latakia.ini --> </ConfigFilePath>
   </Scenario>
</ScenarioList>
```

To add a new scenario to the file, simply copy-paste the lines (tags) for an existing scenario, update the scenario file paths and names, and save the file.

7.1.4. SHALLOW REBUILD VS. DEEP REBUILD

A shallow scenario rebuild will retain the current inventory of mounts/sensors/stores etc for existing platforms in the scenario. But the performance characteristics of their equipment will be updated as per the latest database version. New units added to the scenario will be inserted as defined in the latest database version.

A deep rebuild will re-initialize all platforms in the scenario to their pristine state, fresh from the database. It re-sets the properties of each platform and all of their components, including the platform's weapons, sensors etc. It also completely resets damage status, fuel status etc.

Most scenarios can be rebuilt using shallow rebuild however if there is a complex change to the database you must use the deep rebuild

function. If you're not sure whether to use shallow or deep rebuild in a scenario, select deep rebuild.

7.1.5. LOG FILES

The scenario migration (rebuilder) tool will generate two log files located in the \Command\Logs directory. The first file is named SBR log file.txt and records any errors or warning encountered during the rebuild. The second file is named SBR plaform list. txt and creates a list of all the platforms present in the rebuilt scenario(s). The platform list also includes aircraft on the ground and docked vessels, and displays the loadouts used by all aircraft. Each platform's scenario name and database name (the two are usually different!), database ID# and scenario GUID is listed as well.

All detected errors are marked ERROR in the log. To look for error messages in the log simply open the log file in Notepad, press F3 or Ctrl + F, and search for the term ERROR.

7.1.6. SCENARIO CONFIG FILES (INI FILE)

If any changes/customizations have been made to a platform in a scenario and you would like to carry these over to the new version of the scenario after a deep rebuild, the changes will need to be re-applied. Re-applying the changes can either be done manually in the scenario editor by loading and unloading weapons etc, or automatically through the use of the scenario config file (or INI file). Using a config file saves you having to manually edit the platforms each time.

The scenario config files can either be crafted manually, or exported from an existing scenario. An exported config file will then contain all custom modifications made to the platforms in a scenario before the rebuild, and these can then be applied to the re-initialized platforms in the rebuilt scenario.

The most commonly used functionality is adding and removal of weapons and altering weapon quantities for mounts, mount

magazines and magazines. It is also possible to add and remove mounts, magazines, sensors and comm gear (including weapon datalinks).

The scenario config files can edit platforms in the following ways:

- Change mount's weapon quantity (for existing weapons)

- Change mount magazine's weapon qty (for existing weapons)

- Change magazine's weapon qty (for existing weapons).

- Delete weapon on mount

- Delete weapon in mount magazine

- Delete weapon in magazine

- Add new weapon record to mount (Warning: make sure to add associated weapon directors/illuminators or datalinks)

- Add new weapon record to mount magazine, i.e. a mount's local magazine. (Warning: make sure to add associated weapon records on the mount itself)

- Add new weapon record to magazine (aircraft ordnance in ammo dumps and carrier magazines especially)

- Add mount

- Add magazine

- Add sensor

- Add comm gear (typically weapon datalinks or command guidance systems)

- Delete mount

- Delete magazine

- Delete sensor

- Delete comm gear

7.1.7. SCENARIO CONFIG FILE TEMPLATES AND DELTA TEMPLATES

Scenario config files (INI files) can either be written manually in a text editor or created automatically by the simulator. Two types of config files can be created by the simulator, templates, and delta templates. Template files contain a simple list of all units present in a scenario, while Delta Template files contain all manually altered mounts, magazines, sensors or comms.

Template: exports the platforms present in the scenario to file. The generated file lists the platforms and their unique GUIDs, and is a starting point for manually crafting a scenario config file. To create the template file, go to Editor -> SBR -> Generate Template. Template files are saved in XML format and will typically look like this:

```
<?xml version="1.0" encoding="utf-8"?>
<ScenarioUnits>
    <Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff>
        <!--LCS 1 Freedom (LCS 1 Freedom [1839])-->
    </Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff>
</ScenarioUnits>
```

Delta Template: exports the delta (difference) between platform configurations in the scenario and those in the database. The Delta Template functionality is most commonly used to export aviation magazine changes or additions. But the generated file will also list platforms that have new and deleted weapons, weapon quantity changes, added/removed mounts and magazines, added and removed sensors, and added and removed communication gear and weapon datalinks. The Delta Template functionality will not export damage or changes in fuel levels.

Example: An aviation magazine has been given a new 0/10000 Mk84 LDGP weapon record which has been loaded with 200 weapons. The Delta Template will attempt to locate the 200/10000 Mk84 LDGP record in the database. Since no exact match is found for this weapon record, the Delta Template will look for a best match

using various conditions. It will end up adding a WeaponRecADD and WeaponRecEDIT entry to the scenario config file to first add the 0/10000 weapon record and then load 200 weapons in order to produce the desired result.

The Delta Template will also check mount and sensor arcs to look for differences between the scenario and database. Say a CWIS mount has been deleted and another added with a different arc. This will result in one insert and one delete statement in the Delta Template file.

To create the delta template file, go to Editor -> SBR -> Generate Delta Template. A delta template file would typically look like this:

```
<?xml version="1.0" encoding="utf-8"?>
<ScenarioUnits>
   <Unit_0c4328f6-8900-49c9-a1ee-bbf8e0a2ca92>
      <!--USS Ranger (CV 61 Ranger [Forrestal Class] [1628])-->
      <Mag_2_854>
         <WeaponRemove_1841 />
         <!--AGM-78D Standard [ARM]-->
         <WeaponRemove_150 />
         <!--AIM-7F Sparrow III-->
         <WeaponEdit_1084_8 />
         <!--AN/ALQ-99G [ICAP-2 Block 82] ECM Pod-->
         <WeaponEdit_444_48 />
         <!--AIM-54A Phoenix-->
      </Mag_2_854>
   </Unit_0c4328f6-8900-49c9-a1ee-bbf8e0a2ca92>
</ScenarioUnits>
```

Note that the template file has comments to ease manual edit of the file later on. The comments contain information such as mount and weapons names, and #IDs from the database. Any errors encountered during the Delta Tempate file creation will be logged to the \Logs\SBR INI template log file.txt file.

7.1.8. EDITING SCENARIO CONFIG FILES

To edit a scenario config file, open it in Notepad. Config files are stored in XML format and contain an entry for relevant platforms in the scenario. Scenario config files created using the Delta Template functionality will only contain the platforms that differ from the database, and if no differences are found the file will be empty. Scenario config files created using the Template functionality will contain all platforms.

A template file for a scenario with a single ship in the LCS 1 Freedom class will typically look like this:

```
<?xml version="1.0" encoding="utf-8"?>
<ScenarioUnits>
   <Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff>
      <!--LCS 1 Freedom (LCS 1 Freedom [1839])-->
   </Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff>
</ScenarioUnits>
```

Note that 'Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff' is the unique GUID identifier for the LCS 1 in the scenario. It will be different for all individual platforms. The line '<!--LCS 1 Freedom (LCS 1 Freedom [1839])-->' is a comment and can be altered as needed. It is good practice to always have meaningful comments for all lines in the scenario config files.

To add a new torpedo magazine with database ID# 240 to the ship, insert an 'Add Magazine' line. The line also has a comment for future reference:

```
<MagAdd_240 /><!--Torpedo Magazine [Internal Tubes] --
USN, 2005-->
```

The edited file looks like this:

```
<?xml version="1.0" encoding="utf-8"?>
<ScenarioUnits>
   <Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff>
```

```
    <!--LCS 1 Freedom (LCS 1 Freedom [1839])-->
    <MagAdd_240 /><!-- Torpedo Magazine Internal Tubes, USN
    2005 -->
  </Unit_a25be2bd-d06f-4162-959b-b3d7ccc1e5ff>
</ScenarioUnits>
```

To apply the changes to the scenario, make sure that the scenario is loaded in the Scenario Editor. Then go to Editor -> SBR -> Apply SBR and select the desired Scenario Config File. Return to the scenario, select the platform, open the Magazines window, and verify that the magazine has been added.

7.1.9. SCENARIO CONFIG FILE OVERVIEW

The commands that can be used in the Scenario Config Files are as follows:

Add mount: Mount with database ID# 434 is used as an example below. Note that Coverage has to be added as well, either each segment of a limited arc (Alternative 1), or a full 360 deg arc (Alternative 2). Both have been included in the example however only one should be used in the actual file:

```
    <MountAdd_434>
      <!--CADS-N-1 [3M87 Kortik]-->
      <Cov>
        <Seg>PMA1,PMA2,PMF1,PMF2,PS1,PS2,PB1,PB2,SMA1,
        SMA2,SMF1,SMF2,SS1,SS2,SB1,SB2,</Seg>
        <Seg>360</Seg>
      </Cov>
    </MountAdd_434>
```

Add magazine: Magazine with database ID# 240 is used as an example below:

```
    <MagAdd_240 /><!-- Torpedo Magazine Internal Tubes, USN
    2005 -->
```

Add sensor: Sensor with database ID# 2003 is used as an example. Note that Coverage has to be added for both search coverage and illumination/target tracking. The two coverages have been given different arcs for illustration purposes:

```
<SensorAdd_2003>
      <!--AN/AWG-9-->
      <Cov>
         <Seg>360</Seg>
      </Cov>
      <Cov_Ill>
         <Seg>PMA1,PMA2,PMF1,PMF2,PS1,PS2,</Seg>
      </Cov_Ill>
   </SensorAdd_4>
```

Add comm link: Missile datalink with database ID# 3 used as an example:
```
      <CommAdd_3 /><!--SA-10 Missile Datalink-->
```

Delete mount, magazine, sensor or comm link: Platforms carry a variety of equipment (components), and in many cases there are several mounts, sensors, etc, of the same type but with different coverage (arcs). In order to precisely specify what component to delete, you have to specify not only the database ID# of the component but also the component's number in the ship component list. In the example below we're deleting component #3 with database ID# 222 from a platform:

```
      <MountRemove_3_222 />
      <MagRemove_3_222 />
      <SensorRemove_3_222 />
      <CommRemove_3_222 />
```

If component #3 with ID# 222 is not found on the current platform a popup message will inform you of this fact, and an error message will be saved in the log file.

Edit, add and remove weapon record on mount, in mount magazines or in magazines: The below example edits Sea Sparrow mount

with component ID #3 and database ID# 552. Pre-defined weapon records in the database are added to the mount and its on-board mount magazine (WeaponRecAdd). The weapon quantity is then altered (WeaponEdit), and some of the weapons are then removed (WeaponRemove):

```
<Mount_3_552><!--Mk29 Sea Sparrow-->
    <WeaponRecAdd_5188 /><!--RIM-8J Talos-->
    <WeaponRecAdd_1557 /><!--RUM-139A VLA [Mk46 Mod
    5]-->
    <WeaponRecAdd_2626 /><!--Roland 3-->
    <WeaponRecAdd_944 /><!--RUR-5A Mod 3 ASROC RTD
    [10kT Nuclear DC]-->
    <WeaponEdit_1687_2 /><!--RIM-7M Sea Sparrow-->
    <WeaponEdit_885_22 /><!--RIM-8J Talos-->
    <WeaponEdit_1643_77 /><!--RUR-5A Mod 3 ASROC RTD
    [10kT Nuclear DC]-->
    <WeaponRemove_233 /><!--Mk182 SRBOC Chaff
    [Seduction]-->
    <MountMag>
        <WeaponRecAdd_5188 /><!--RIM-8J Talos-->
        <WeaponRecAdd_154 /><!--RUM-139C VLA [Mk54]-->
        <WeaponRecAdd_4015 /><!--S-8KO 80mm Rocket-->
        <WeaponRecAdd_2765 /><!--SAM-3 Kin-SAM [Type 93]-->
        <WeaponEdit_885_3 /><!--RIM-8J Talos-->
        <WeaponEdit_1193_88 /><!--SAM-3 Kin-SAM [Type 93]-->
        <WeaponRemove_233 /><!--Mk182 SRBOC Chaff
        [Seduction]-->
    </MountMag>
</Mount_3_552>
```

The following example edits the SRBOC magazine with component ID# 1 and database ID#717. Several pre-defined weapon records in the database are added (WeaponRecAdd), the number of weapons is then altered (WeaponEdit), and some of the weapons are removed (WeaponRemove):

```
<Mag_1_717><!--Mk36 SRBOC-->
   <WeaponRecAdd_2541 /><!--Generic Chaff Salvo [5x
   Cartridges]-->
   <WeaponRecAdd_5188 /><!--RIM-8J Talos-->
   <WeaponRecAdd_154 /><!--RUM-139C VLA [Mk54]-->
   <WeaponRecAdd_4015 /><!--S-8KO 80mm Rocket-->
   <WeaponRecAdd_2765 /><!--SAM-3 Kin-SAM [Type 93]-->
   <WeaponEdit_232_222 /><!--Mk182 SRBOC Chaff
   [Seduction]-->
   <WeaponEdit_885_3 /><!--RIM-8J Talos-->
   <WeaponEdit_1193_88 /><!--SAM-3 Kin-SAM [Type 93]-->
   <WeaponRemove_233 /><!--Mk182 SRBOC Chaff
   [Seduction]-->
</Mag_1_717>
```

If no mount or magazine on the current platform matches the component number and database ID# combination a popup message will inform you of this fact. An error message will also be saved in the log file.

7.1.10. SCENARIO OPTIONS
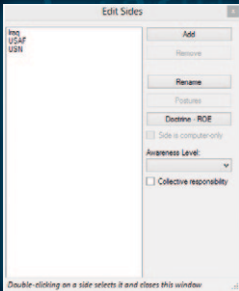
Add/Edit Sides: This function allows you to add sides to a game and edit their properties.

Sides may be human or computer controlled. A side's relationship with other sides is determined by its posture. Each side also has its doctrine which is part of the mechanism that governs its behavior.

- ADD A SIDE: Click "Add" and type a name for the side in the box that opens.

- DELETE A SIDE: Select a side and click "Remove"

▪ RENAME A SIDE: Select a side and click "Rename", Type in a new name in the box that opens.

Set Postures: This determines how each side interacts with other sides. The choices are Neutral, Friendly, Unfriendly, and Hostile. Select the side, then click "Postures", in the box that opens, select the desired posture from the drop down menu.

Posture choices:

▪ Friendly: Sides will not fire on each other and share contact information and air facilities.

▪ Neutral: Sides will not fire on each other and do not share sensor information.

▪ Unfriendly: Sides will not fire each other but will intercept when on patrol missions. They can conduct electronic warfare against each other.

▪ Hostile: Sides will fire on each other and can conduct electronic warfare against each other.

Doctrine–RoE button: This sets the default Doctrine, RoE, and EMCON for a side. All units and their spawned units will inherit these settings unless changed by a mission or manually. The editor can set these to be editable by players in game mode by checking off the Player Editable checkboxes.

Add a Unit: This function allows users to add a unit to a scenario. It can also be called from the ctrl + right click drop down menu.

To add a unit:

▪ Make sure you have the side you want to add a unit to selected in the Switch to menu.

- Select Add Unit from the Editor drop down and click a point on the map you'd like to place the unit. Please be sure that the place you selected to drop the unit you would like matches terrain suitable for the type (ships in water, buildings on land).

- Choose Type using the Type drop down. Your options are aircraft, ships, submarine and facility. Notice when you do so that your pick list on the bottom of the list switches to match your chosen type.

- Side should be the side you are set to but you could change it with this drop down. If you wish to add a side on the fly click the Add Side button which will launch the Add Side Dialog.

- The Name field allows you to name the unit by deleting the default text and typing it what you would like.

- There are filter options to assist you in finding units to add:

    - Filter By Class Field: Typing in this field filters items based on what you type.

    - Filter By Country Drop Down: You can filter by country by selecting a country from the drop down list.

    - Filter by Name (Alphabetically) You can filter alphabetically by click on the name Platform column. This arranges units by name alphabetically from a to z or z to a.

    - Filter by Country (alphabetically): You can filter alphabetically by country by clicking on the country at the top of its column. This will filter by country alphabetically from A to Z or Z to A.
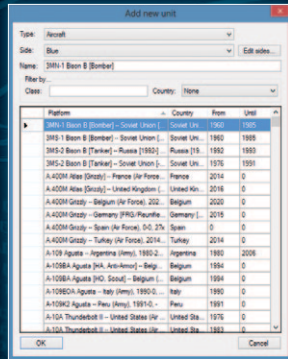
- Filter by From Date: Selecting From at the top of this column allows you to order by in service date.

- Filter by Until Date: Selecting Until from the top of its column allows you to order by out of service date.

When you find the unit you would like to add select it by clicking on it and press the OK button. If it's is a ship or facility it will be added to the map. If it's an aircraft, you will have to select a loadout and click ok.

Clone Unit: Many units of the same type and load-out may be placed by selecting an existing unit and pressing the hotkey "C" then clicking on the map to place a clone of the selected unit.

Move Unit: To move a unit on the map, select the unit then press the hotkey "M" then click on the map the desired new location for the unit.

Delete Unit: Select the unit or group and press the "DEL" key.

Select New Home Base: Found in the left click on unit drop down. Select this function to associate an aircraft with a home base. This should generally always be done to allow for accurate fuel calculations.

Unit Orientation: Found in the left click on unit drop down menu. Select this function to set unit bearing. This should always be done for radars or weapons systems that have limited arcs.

Add Satellites: This menu allows users to add Satellites to scenarios. It is currently auto-filtered to only display satellites currently in orbit in relation to the current time value you have set.

To Add a Satellite:

- Make sure the side you'd like to add them to are selected, and select

Add Satellite from the editor drop-down, which will launch the Add Satellite dialog.

- To add a satellite to a scenario work through the nation, type, and model drill down lists and select the checkbox of the satellite you would like to add.

- Press the Add Satellite button when complete and it will appear on the GUI.

To Delete a Satellite:
Select the unit on the game map and press the D key to delete it.

Edit AC: This function allows you to add aircraft to any facility or group that can accommodate them by calling the Edit Aircraft dialog. The current inventory of aircraft hosted on a unit are displayed on the left and the edit aircraft functions and pick list are on the right.

How to add an aircraft to unit or group:

1. Select the unit, group, facility or air base you would like to add aircraft too and select Edit AC in the editor drop down which will launch the Edit AC dialog. Please consider the amount of storage the unit has and runway lengths. The game does filter as best as it can but there are hybrid units that don't always fit the mold.

2. As in the Add Unit dialog you can filter by: Class Name, Country, Aircraft Name, Aircraft Country, From Date and Unit Date.

3. Select the aircraft that would like by selecting on it in the unit listing.

4. Callsign: This is an editable text field that allows you to give nicknames to units.

5. How Many: Enter a numeric value for the number of aircraft you would like to add.

6. Press the Add Selected button when complete.

Removing aircraft from a group or unit

1. Select the units you would like to remove from the current inventory list on the right. When you do so notice that Remove Selected button has appeared.

2. Set the number of units you would like to remove in the quantity field and click apply.

3. Click the Remove Selected buttons to remove the unit

Edit Docked Boats: This function allows editors to add boats or submersibles/UUV's to facilities or boats capable of hosting them. When launched the Edit Docked Boats dialog displays the current inventory of units already hosted on the vessel on the left and filters and a picklist to add boats on the right. This list is already filtered to display ships that fall within the correct size limitations to be hosted.

To add a boat or submarine:

1. Select the vessel you would like to host the boat or submarine and select Edit Docked Boats from the editor drop down which launches the edit docked boats dialog.

2. Use the type, class, country filters to display a list of possible units to host.

3. Select the unit you would like by selecting it in the pick list.

4. Add the number you wish to add in the How Many field.

5. Click the Add Selected button to add them. They should now appear in the current inventory list on the right.

To remove a boat or submarine:

1. Select the units you would like to remove from the current inventory list on the right. When you do so notice that Remove Selected button has appeared.

2. Set the number of units you would like to remove in the quantity field and click apply.

3. Click the Remove Selected buttons to remove the unit

Remove All Units of the Side: Deletes all units for selected side. Be careful as there is no undo.
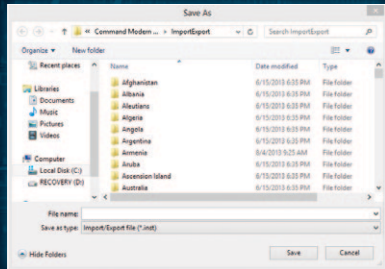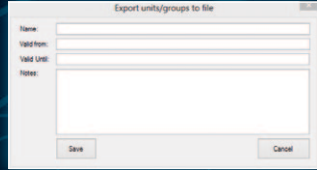
7.1.11. IMPORT/EXPORT UNITS

The import/export unit function is one of the most powerful tools in the game. It allows editors to save/export selected units and groups to a file and then import them into other scenarios at a later date or shared with other edits.

We have already prepopulated thousands of these files so that many of the airbases, air defense system or historical battlegroups might actually be there – saving you time and effort.

Save selected units/groups to a file - Creating import files

1. Select a unit or drag select multiple units and groups you would like to save so they are highlighted and then select save selected units/groups to a file from the editor>import/export units drop-down. This will launch the Export units/groups to a file dialog.

2. Fill in the Name, Valid From, Valid Until and Notes text fields if you'd like.

3. Press the Save button which will launch the Save As dialog.

4. Give the file a meaningful text name and when press the Save button. By default it will be given an .inst file extension and saved to the import/export folder in your command directory.


Load units/Groups from File - Importing

Selecting load units/groups from file editor>import/export units drop-down will launch the Load Group(s) from File dialog. The left side is a hierarchal listing of all folders and files in the import/export directory. The right side displays the information you entered when you created the file and a list of all group members.

To add units to your scenario:

▪ First find the unit or group you would like to add from the import listing on the left. You can open up the lists by clicking the + signs next to them to expose the files within folders.

- You must be sure to match the import with the database you are using. We have marked all folders that contain coldwar database files as CWDB and then their names. All others are DB3k files.
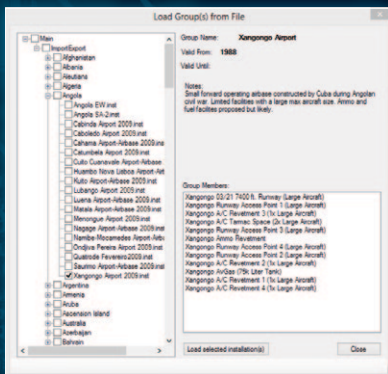
- You must be wary of duplicates as well. It is likely that the creator of the 1967 SAM site File used it to build the 1973 SAM site file and if you add both you'll get a duplicate key error message. If for some reason this is unavoidable just click okay and the duplicate will be skipped.

- Next mark the files you wish to import by selecting the open checkboxes next to them. If you'd like to select anything in a folder select the open checkbox next to it which will all select all folders and files under it.

- To import click the Load selected installation button which will populate the units for the selected side on the UI.

- To delete them you would have drag select and delete as you would a unit or group added any other way.

7.1.12. GENERAL TAB

Choices here for your scenario are much like those you would see in the Game Options drop-down while playing, only here you can choose them for each side.

Use Nuclear Weapons: Determines if the platform is authorized to employ nuclear weapons. This has three options:

- **YES**: Use of Nuclear Weapons is authorized.

- **NO**: Use of Nuclear Weapons is not authorized.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

Engage Non-Hostile Targets: Determines how a platform would behave if it is engaged by a Non-Hostile Contact. This has three options.

- **YES**: Engage unknown, unfriendly or hostile targets.

- **NO**: Follow Posture settings.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

RTB When Winchester: When a platform, usually an aircraft, has expended a certain amount of its ordinance, it is considered in a "Winchester" condition and will return to its parent platform. Tolerances are set by aircraft roles within the database. This RoE has three options.

- **YES**: Unit will return to base when loadout role tolerance has been met.

- **NO**: Unit will ignore loadout role tolerance and continue to attack with any legal weapon.

- **INHERIT**: Posture setting is the same as the parent mission or side ROE.

Engaging Ambiguous Targets: Sets the AI behavior when considering using a weapon. Each weapon has certain tolerances calculated on-the-fly for down/cross-range; most direct-guidance systems want a precise target, most LOAL weapons have relatively strict cross-range tolerance (equal to the sensor swath) but relaxed downrange tolerance because of their BOL ability, area-effect weapons can tolerate up to their kill zone etc. If the target's ambiguity figures are

greater than the weapon tolerances, this is explained in the manual weapon allocation window and the weapon will not be fired. This dialog has four options:

- **IGNORE AMBIGUITY**: An ambiguous contact is any contact with an uncertainly area. The AI will ignore the ambiguity when determining whether or not to launch a weapon.

- **OPTIMISTIC**: The target uncertainty area must be smaller than 3x the weapon tolerance for the AI to launch the weapon.

- **PESSIMISTIC**: The target location uncertainty must be less than the weapon tolerance for the AI to launch the weapon.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

Automatic Evasion: The game has a number of pre-programmed evasions routines that the AI will undertake if it detects it is under attack. This RoE gives you the ability to turn this behavior of and off.

- **YES**: Units will continue to evade.

- **NO**: Units will not evade attacks.

- **INHERIT**: Posture setting is the same as the parent mission or side RoE.

Maintain Standoff: This RoE setting allows players to take advantage of the weapons range advantage of particular platform may have against known adversaries. It does this by staying inside its weapon range but outside the target's weapon range until ammo has been expended. Standoff options are:

- **YES**: Units will maintain standoff.

- **NO**: Unit will charge target and engage with all weapons regardless of any advantage.

- **INHERIT**: Posture setting is the same as the parent mission or side ROE.

Use Refuel/Unrep:: This RoE setting allows players to turn automatic refueling on and off.

- ▪ **YES**: Units will refuel or preform replenishment.

- ▪ **NO**: Units will not refuel or perform replenishment.

- ▪ **INHERIT**: Setting is the same as the default value, parent mission or side RoE.

EMCON: EMCON is the Emissions Condition of the platform. This sets the ordered status of all emitters with regard to Radar, Active Sonar, and OECM (Offensive Radar Jamming). Each emitter category has its own setting and has two states:

PASSIVE: Radars, Active Sonar, and OECM off.

ACTIVE: Radars, Active Sonar, and OECM on.

Awareness Level: This sets the side's level of awareness of the units in the scenario. Note that any unit may be set to be automatically detected and classified by the scenario author, regardless of this setting.

- ▪ Normal: All units must be detected and classified using suitable sensors.

- ▪ Auto Side ID: All units must be detected but the side identified upon detection.

- ▪ Auto Side and Unit ID: All units must be detected but the unit's side and unit type is provided upon detection.

- ▪ Omniscient: Similar to "God Mode" which reveals everything detectable.

- ▪ Blind: Similar to a monitor failure.

Collective Responsibility: When checked; If any unit of a non-hostile side commits a hostile act, the whole side is designated hostile

Switch To: This drop-down allows you to switch the view perspective in the editor to each side you have created.
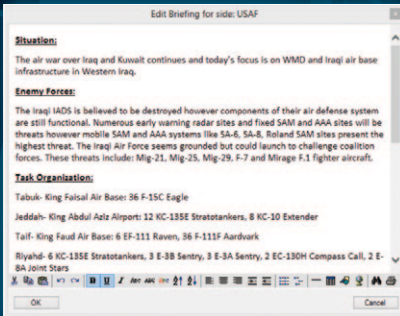
Edit Briefing: This function calls the edit briefing dialog which allows players to add text, pictures and links to the side briefings that appear for each side in the load scenario dialog and briefings dialog. You must switch sides using the editor switch to function to edit and add unique briefings for each side.
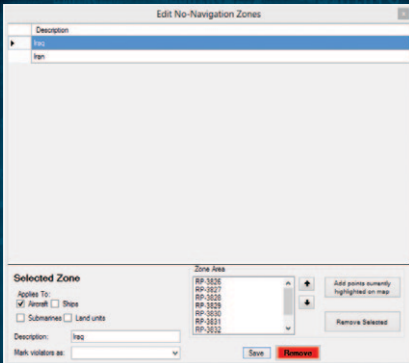
Edit Scoring Dialog: This dialog allows editors to apply scoring evaluation to their scenarios that appears in the victory conditions dialog. Points can be scored or lost in the game by using the scoring event in the event editor. This dialog is then used to evaluate that scoring.
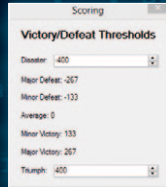
To use:

1. Make sure the side you'd like to apply scoring to is selected in the Switch To dialog.

2. When the scoring dialog is open, enter high and low values in the Triumph and Disaster fields.

No Navigation Zones: This function allows editors to define or edit areas where specific unit types cannot fly into.

The Edit No Navigation Dialog has a list of zones at the top and specific parameters for each at the bottom. You can navigate between zones by selecting each from the above list.

To create a No-Navigation zone:

1. Make sure the side you would like to create a zone for is selected.

2. Create and select reference points on the map that will be used to mark the area that units will be excluded from

3. Select Create new from selected reference points from the No Navigation Zones drop down which will launch the Edit No Navigation Zones dialog.

4. Notice that the selected reference points have populated the Zone area list. You can adjust their positions by clicking and dragging them on the map. You can remove them by selecting them in the Zone area list and clicking the Remove Selected button.

5. You can assign unit types to the zone by checking off any or all of the Applies to check boxes.

6. You can name or rename the zone by filling in the description text field.

7. You can save the zone by clicking the Save button which will populate the zone list at the top.

8. To remove a zone, select it from the list at the top and click the remove button at the bottom of the dialog.

God's Eye View: Provides an omniscient view of all units on all sides in the game.

- This setting is useful for editors to see what is really going on while testing a scenario.

- This setting also allows editors to create strike missions for targets that have not been detected but still need to be specified.

▪ Keep in mind that this does not reflect what each player side sees at any time as they see things through sensors and contacts could have moved many miles or are not 100-percent accurate.
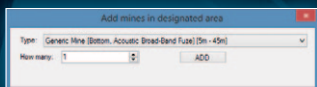
Minefields: This drop down menu allows editors to add and remove sea minefields.

To add and mines to a designated area:

1. Make sure you have switched to the side you would like deploy the mines.

2. Create and then select the reference points you would like to you use to define the area you'd like the mines to be placed.

3. Select Create minefield in designated area which launches the Add mines in designated area dialog.

4. Choose the type you would line and how many. Please consider the depth of the water and the depth parameters the mines can operate in prior to deploying. These are found in brackets after their name in the dialog.

5. When ready to add press the ADD button. The mines will be randomly distributed based on area and water depth.

To remove mines from a designated area:

1. Select the reference points or drop and select new reference points marking the area you'd like to remove mines from.

2. Select remove mines from designated area in the Minefields drop down menu.

Weather: This function allows editors to manipulate weather and sea conditions.

Use this menu to manipulate weather conditions in the game.

Simply slide the scales to manipulate average temperature, rainfall, sky (visibility) and wind/sea state conditions. These settings are currently global.

How weather impacts units in the game:

Temperature affects a number of sensors but primarily infrared ones. During the night, man-made and mechanical objects stand out more clearly against the background on infrared sensors. Conversely, during daytime (and particularly in hot climates) IR sensor range shrinks dramatically. Imaging sensors are less severely affected than older ones.

Rainfall affects both visual, IR and laser sensors. Visibility can shrink to as much as 1-5% of original range and similarly IR sensors are severely degraded by even light rain (e.g. in a rainstorm a Sidewinder may have an effective lock-on distance smaller than gun range).

Cloud coverage affects line-of-sight for visual and IR sensors. Light cloud coverage usually means scattered clouds at high altitude; aircraft can get under the cloud base and still visually acquire targets below, illuminate for LGBs etc. Thick cloud coverage means thick clouds at all altitudes; LGB guidance may be difficult or impossible unless the aircraft descends to low altitude, and spotting is likewise degraded.

Sea states affect primarily ship suitability (not currently modeled) and sonar performance. Surface ducting is useless in high waves and sonar ranges at or near the surface are severely degraded. High waves also raise the minimum safe altitude for low-flying aircraft
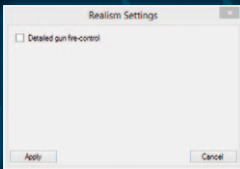
7.1.13. REALISM SETTINGS

This dialog allows editors to set default realism settings for scenarios.

To select a setting just select a checkbox and click the apply button.
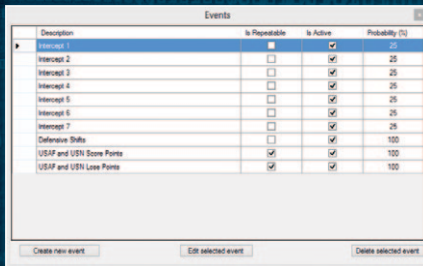
Detailed Gun Fire Control: When activated, guns have their Ph and CEP values realistically affected by the quality of their fire-control director and may altogether be incapable of firing if their sensors are blocked or knocked out. When disabled, guns can fire even without any director guiding them, and their accuracy is unaffected by sensor and weather limitations.

7.2. EVENTS

Event Editor: The event editor is a powerful tool that allows editors to give more variability to Command's Static AI and Editor's scenario storylines by introducing conditional and/ or random events into the time line of a scenario. In Command events are actions that occur as a result of a trigger.

You launch the event editor by clicking on Event Editor in the mission drop down and selecting Events from the dropdown. When you do so, the Event Editor dialog will launch the Events dialog.

Populated Event Dialog

The Events dialog includes a listing of all created events at the top and three function buttons at the bottom.

The event listing displays each event's: description (name), if it is repeatable, if the event is active and the probability of the event occurring. These values are all set when creating the event.

The function buttons are:

▪ Create a new event: Launches the Edit Event dialog. See below for functionality.

- Edit selected event: Selecting an even from the list and pressing this button opens the event in the edit event dialog for editing.

- Delete selected Event: Selecting and event and pressing this button deletes it.

Creating an Event: As mentioned, events are actions that are the result of a trigger. So we'll work through creating an event while describing each dialog used.

First, click the **Create New Event** button which launches the Edit Event dialog. This dialog includes basic event parameters at the top and specific triggers and actions sections below.

Events are constructed from actions and triggers so it is best to build them first. You can do so by pressing the edit trigger or edit action buttons that are found at the bottom of their sections. You could also edit them independently from the event editor drop-down by selecting either Actions or Triggers. **Once you have constructed the necessary actions and triggers, you can begin construction of your event in the Edit Event dialog**.
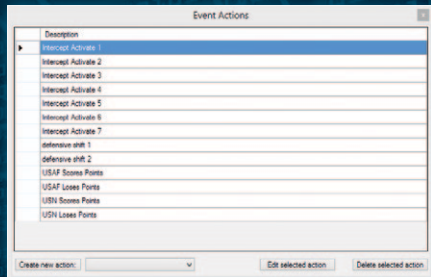
7.2.1. ACTIONS

You create actions by click on the edit actions button which brings you Event Actions Dialog. This dialog has a listing of all created actions at the top and function buttons at the bottom.

1. **To create a new action** you select the type from the drop-down menu at the bottom and press the Create New Action button which will launch the Edit Event action dialog, allowing you to construct the action and modify options and parameters. Descriptions of all are below.

2. **To edit an existing action**, select it from the list at the top and press the Edit Selected Action button, which opens the Edit Event Action dialog allowing you to modify the action options and parameters.

3. **To delete an action**, select it from the list at the top and press Delete Selected Action. Keep in mind that if you are using the action in an existing event it will be deleted as well.

What are Actions?

Actions are the result of a trigger, and may be used in many triggered events.

To setting up actions, click on Editor > Event Editor > Actions. A window opens listing the existing possible actions and options to create, edit, or delete the selected action.

Action Types:

Points: This allows adding or subtracting points from a side's score.

To use:

- Fill in a description of the action (ex. 100 Points to side Blue).

- Select a side that is to receive or lose the points.

- Add the Point change. Positive numbers to grant points and negative to subtract (ex. -100).

End Scenario: This action terminates the scenario. It is suggested that you add a message action prior to this letting the player know.

Teleport to Area: This is used to teleport units to within a reference designator defined area. This can be used to simulate the arrival of re-enforcements.

To use:

- Make sure you drop some reference points to mark the area the units will be teleported to. Select/activate them and make sure other reference points are deselected.

- Launch the event editor and add action

- Type in a description (for example, "1st platoon lands at airport").

- Click on "add points currently highlighted" to set the teleport area.

- Select the units you would like moved. They are selected when highlighted in blue.

- Click OK button.

Message: Creates a popup message with user-defined content. Please remember to tell players to activate their special message popup option in their Game Log message options to see this as a popup rather than a less visible entry in the game log.

To use:

- Fill in a description of the message (like "Blueside war warning").

- Use the drop-down to select the side that will see it.
- Use the text box to type the message you would like displayed.
- Click the OK button when complete.

Change Mission Status: Sets a mission to active or inactive. This action is designed to be used with the mission status field in the mission editor. Please be sure do set the mission status (active/inactive) to the status you'd like the mission to have a scenario start.

To use:

- Add a description of the action (such as "Activate Blue AAW Patrol").
- First select a side from the Side drop-down and then a mission from mission drop-down.
- Click the New Status drop-down and select a status.
- Click OK.

7.2.2. TRIGGERS

Triggers initiate events. A trigger can be used to initiate multiple events; however, each event must be set up separately. Triggers are created by selecting the Edit Trigger button which launches the Event Trigger dialog.
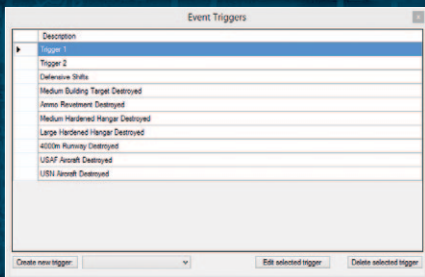
1. To create a new trigger you would select the type from the drop down menu at the bottom and press the Create New Action button which will launch the edit event trigger dialog allowing you to construct the trigger and modify options and parameters.

2. To edit an existing trigger, select it from the list at the top and press Edit Selected Trigger, which calls the edit event trigger dialog allowing you to modify the action options and parameters.

3. To delete a trigger select it from the list at the top and press Delete Selected Trigger. Keep in mind that if you are using the trigger in an existing event it will be deleted as well.

Trigger Types:

- Unit Destroyed: Trigger occurs when the specified unit is destroyed.

- Unit Damaged: Trigger occurs when a specified unit or class of units

- Unit Enters Area: Trigger occurs when the specified unit enters an area defined by reference points. An option exists where a window of time may be specified such that the unit must enter the area within that time window to cause the trigger to activate.

- Unit Remains In Area: Trigger occurs when the specified unit remains in an area defined by reference points for a specified amount of time. The time is reset if the specified unit leaves the area for any reason.

- Time: The trigger occurs when the game time reaches a specified time.

- Random Time: The trigger occurs at a random time within a user set interval.

- Side Points: The trigger occurs when the designated side's points either exceed, matches, or falls under the specified number of points.

Triggers Associated with Units

The "Unit Destroyed", "Unit Damaged", "Unit Enters Area", and "Unit Remains In Area" triggers can be linked to units in a hierarchal

fashion from a type of unit down to a specific unit. These types, below, are set when the trigger is created:

- TARGET SIDE: Designates the side the trigger will generate from.

- TARGET TYPE: Designates the type of unit. If any of the designated type of unit experiences the trigger criteria, then the trigger is activated. Unit types are:

- Aircraft

- Surface Ship

- Submarine

- Land Facility

- Weapon

- TARGET SUBTYPE

- TARGET CLASS

- SPECIFIC UNIT

Triggers Associated with an Area

Some triggers have an area associated with them which are defined with reference points. The reference points defining the area should be selected prior to creating the trigger that uses them. The reference points used to define the area can be changed in the trigger edit dialog box.

7.2.3. SETTING UP TRIGGERS

Click on Editor > Event Editor > Triggers. The "Event Triggers" dialog box opens listing the existing triggers and options to create, edit, or delete Triggers. Scroll down the pull down listing at the bottom of the box and pick a trigger type then click "Create New Trigger". The "Edit Event Trigger" dialog box is displayed. NOTE: Triggers with areas defined by reference points associated with them should have the reference points already selected when creating the trigger.

Unit Destroyed:

1. Type in a description for the trigger.

2. Select the Side and desired unit settings from the drop down listings. These should be done from the top down since the subsequent available selections often depend on what is selected above it. If the trigger is going to apply to all types then the subsequent selections should be left as "None". The same is true if selecting a subtype or class.

Unit Damaged:

1. Type in a description for the trigger.

2. Select the Side and desired unit settings from the drop down listings. These should be done from the top down since the subsequent available selections often depend on what is selected above it. If the trigger is going to apply to all types then the subsequent selections should be left as "None". The same is true if selecting a subtype or class.

Unit Enters Area: The reference points defining the area should be selected prior to opening the Event Triggers dialog box.

1. Type in a description for the trigger.

2. Select the side and desired unit settings from the drop-down listings. These should be done from the top down since the subsequent available selections often depend on what is selected above it. If the trigger is going to apply to all types then the subsequent selections should be left as "None". The same is true if selecting a subtype or class.

3. Designate the earliest time the trigger can occur. If the designated unit(s) enter the area prior to the designated earliest time, the trigger will not activate.

4. Designate the latest time the trigger can occur. If the designated unit(s) enter the area after the designated latest time, the trigger will not activate.

5. Modifier: Modifies the trigger to a "Unit Leaves Area" trigger if checked.

6. Verify the correct reference points are assigned to the trigger. Reference points may be added later after creating the trigger, removing reference points may be done at this time. At least three reference points must remain at all times.

7. Select OK to create the trigger.

Unit Remains In Area: The reference points defining the area should be selected prior to opening the Event Triggers dialog box.

1. Type in a description for the trigger.

2. Select the side and desired unit settings from the drop-down listings. These should be done from the top down since the subsequent available selections often depend on what is selected above it. If the trigger is going to apply to all types then the subsequent selections should be left as "None". The same is true if selecting a subtype or class.

3. Designate the amount of time the unit must remain in the area. Note that if the unit exits the area, the timer will reset.

4. Verify the correct reference points are assigned to the trigger. Reference points may be added later after creating the trigger, removing reference points may be done at this time. At least three reference points must remain at all times.

5. Select OK to create the trigger.

Side Points: Type in a description for the trigger. This trigger may be used to set victory or defeat in a game.

1. Select the side the trigger applies to.

2. Enter the amount of points and select whether the trigger occurs when the accumulated points for that side either exceeds, reaches exactly, or falls under the specified points.

3. Verify the correct reference points are assigned to the trigger. Reference points may be added later after creating the trigger, removing reference points may be done at this time. At least three reference points must remain at all times.

4. Select OK to create the trigger.

Time: Type in a description for the trigger. Set the date and time the trigger should occur. This trigger occurs when the game clock meets the designated time. Select OK to create the trigger.

Random Time: Type in a description for the trigger.

1. Set the date/time range within which the trigger should occur.

2. Pressing the "Set Random Time" button set the random time for the trigger but will not display it.

3. Select OK to create the trigger.

7.2.4. CONSTRUCTING AN EVENT

Once you have completed the Actions and Triggers necessary for your event to work, you can begin creation of the event itself in the Edit Event dialog.

1. Give the event a name by populating the Description field with text.

2. Select the Event is repeatable check box if you'd like the event to repeat.

3. Enter a 1-100 numeric value chance of the event occurring in the Probability field.

4. Next go to the trigger section at the top and select the trigger you created from the drop-down and press the Add trigger button next to it, which will populate the trigger list above.

5. Next, go down to the Actions section at the bottom, select the action you created from the drop-down list, and press the Add Action button, which will populate the Action List with your chosen action.

6. If you'd like to make any edits to the actions or the triggers you can press the Edit Action or Edit Triggers button in their related sections which will launch their edit dialogs.

7. If you'd like to remove a trigger or action select them in their lists and press the Remove Selected buttons in the appropriate section.

8. Press the OK button on the left to save your work and compete the process. Your new event should now appear in the events dialog.

8. APPENDICES
8.1. KEYBOARD COMMANDS:

Note: For KEYPAD commands, NumLock must be off!

KEYBOARD ARROWS: Pan map

SPACEBAR and BACKSPACE: Cycle through your units

Z: Zoom in, lower camera altitude

X: Zoom out, raise camera altitude

(ESC): Abort or leave special modes

G: Group selected units

D: Detach selected units from group

U: Unassign selected units from mission

T: Unit Tracking. UI centers on selected unit and follows it

(CTRL)-D: Distance measuring tool

R: Rename unit or group

(+) (KEYPAD): Increase time compression

(-) (KEYPAD): Decrease time compression

ENTER (KEYPAD) : Set time compression to 1:1

3: (KEYPAD): drops contact

7 (KEYPAD) or HOME: Cycle display for targeting vectors (ALL, SELECTED UNIT, OFF)

9 (KEYPAD): Switch between unit and group view

* (KEYPAD): Cycle display for datablocks (ALL, SELECTED UNIT, OFF)

/ (KEYPAD): Cycle display for datalinks (ALL, SELECTED UNIT, OFF)

END: Cycle display for illumination vectors (ALL, SELECTED UNIT, OFF)

F1: Attack targets (AUTOMATIC)

SHIFT + F1: Attack targets (MANUAL)

Ctl + F1: Attack targets (BEARING ONLY)

F2: Set speed, altitude or depth for selected unit or group

F3: Set course for selected unit or group

F4: Formation editor

F9: Sensor control window

F12: Pause/start game

M: Teleport selected unit

C: Clone selected unit

[: Drop passive sonobuoy

]: Drop active sonobuoy

O: Launches OOB Display

8.2. SCENARIO EDITING TEMPLATE/ CHECKLIST

This is just a basic checklist of things to look at prior to release of a scenario so that scenarios work correctly.

- Scenario saved as a scenario file (scenarioname.scen) not a save game (savename.sav).

- Scenario Times, duration, complexity, difficult and location/ settings are set.

- If a playable side has tons of sensors the merge range-symbols in map settings is turned on to reduce clutter.

- Scenario description and the scenario briefings for playable sides are written.

- Sides are added, postures, ROE and awareness are set. If side is not playable the computer only check box is checked.

- If a side is to be playable by both the AI and a human player than all missions created for the AI have the Scrub mission if human side is human checkbox checked in the mission editor.

- If a side is included just for environment (fishing boats, merchants) you've set their awareness level to blind to minimize unnecessary sensor calculations.

- Units are named and they are assigned to missions.

- Air bases and ships that host aircraft have populated magazines.

- Aircraft are armed or set to reserve so players know to add munitions. Aircraft that are not to be used are set to maintenance.

- Boats, landing craft and UUV are added where appropriate.

- Groups are named and their formations are set in the formation editor.

- All reference points are deselected you don't want selected and they are locked if you don't want players moving them.

- No-navigate zones are added and locked where necessary.

- Missions and exclusion zones do not share reference points. Likewise missions and no navigate zones do not as well.

- All events created in the event editor have triggers and actions.

- If you are using points in the scenarios you have correct configured the scoring dialog.

- If the game is in unit view switch it back to group view by pressing the Page up button.

- Layers (Relief, latitude and longitude) are activated in map settings if you would like to use them.

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- God's eye view is turned off if used.

- If you have a message displayed you've cleared them by select message log and clear for the game drop down menu.

- The losses and expenditures report is clear. Any erroneous entries can be cleared by clicking the Reset All button.

8.3. CUSTOM OVERLAYS 101

To add overlays to command you must first use third party software to generate geo-referenced files and then you can upload them to your command using an in game interface.

For demonstration purpose we are using GMAP as we've had good experiences with it. We do not guarantee its future functionality nor are we in any way responsible for the accuracy of the open source imagery.

Download Gmap (http://greatmaps.codeplex.com/) and unzip to a location you'll be able to find.

To run the program, click the Demo.WindowForms.exe file.

When launched you can manipulate the map with your mouse and change the imagery type using type drop down. In general it is best
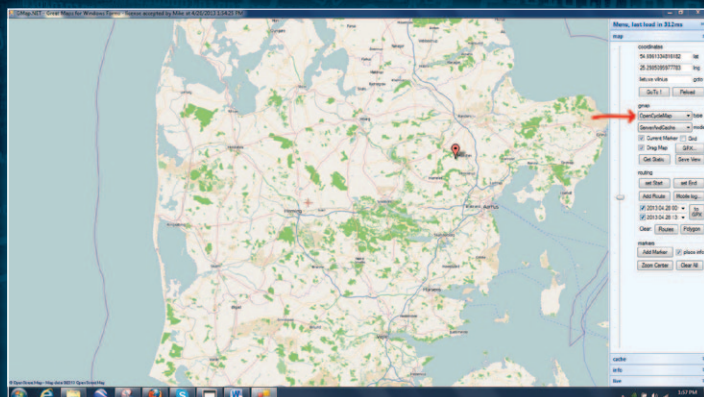
to find what you're looking for using maps and then go to the satellite imagery (Google satellite, Bing, etc.) to actually take the picture. I would even suggest going to Google Earth or finding the exact coordinates in Google first to save some time. You can also overlay any of these map types although the satellite imagery looks best.

We have not done load testing but we do know that Command does not handle massive files at this point. If possible keep imagery down to at least city sized or lower to prevent crashes or oddities. If this feature becomes popular we will invest more time in it later.
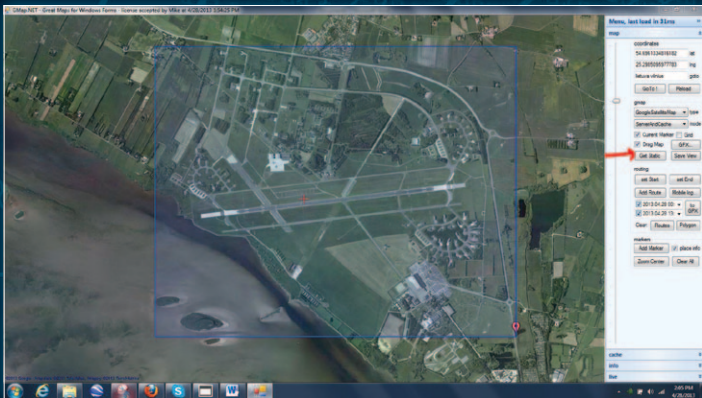

When you're ready to capture something to use as a file:

1. Press the Alt button and left click mouse drag the area you would like to capture. You'll know you're successful when it is highlighted with a blue box. When satisfied that you've captured what you want then press the get static button on the right.

2. When the static map maker dialog appears:

   ▪ Set the Zoom level to 17
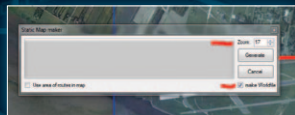
- Check the Make Worldfile check box

- Push the Generate button

3. When complete you'll notice that two files have been generated; one is a .png and the other is a .pngw. You must rename the .pngw file extension to .pgw (so rename and just delete out the n.)

4. You can further edit the files in any image editing program if you choose.

5. To import into COMMAND, launch the game, create your side and click the Custom Overlay button and when the Custom Layer Manager appears press the Add Layer button. This will launch a windows Add File dialog.
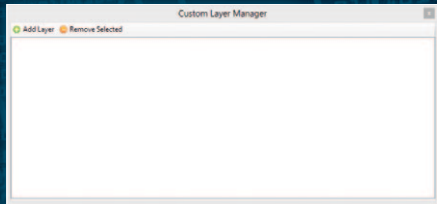
Please choose the .png file and allow the display time to load. Once loaded, you will see it in the bottom list.
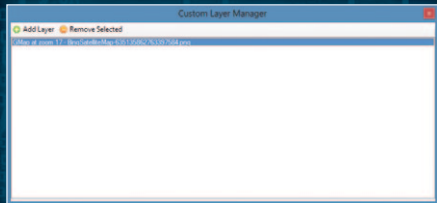
To remove an overlay, simply select it in the Custom Layer Manager and press the Remove Selected Button.

8.4. AIR BASES: HOW TO BUILD THEM, HOW TO DESTROY THEM

Air Bases are important units in COMMAND. The can be added to scenarios either as a single unit or air base group. At the basic level they host aircraft but they also support the simulations advanced

aircraft logistics and sortie models and act as advanced targets. This section explains how to build these units and how to destroy them.

Air bases are currently implemented in the game as either one very generic single-serving unit (Single-Unit Airfield) or as an airbase group that could include hundreds of individual facilities. As a designer you can choose the type you would like to use but unit-count does impact performance so it's best to use a single-unit airfield unless the air base has the potential to be a target. There is no difference in function between the two. COMMAND'S databases provide a ready selection of such bases in various sizes (going all the way up to multiple 4000-m runways) so you can select what most closely fits your needs.

COMMAND'S air bases do model aircraft traffic, which helps support the simulation accurately model aircraft-sortie rates. When given a launch order, aircraft will start in their holding facilities such as tarmacs, hangars or revetments, move to a connecting/transit facility such as a Runway Access Point or Taxiway (or elevator in a ship) and then move to a Runway where they are launched. When they land, they step back through the flow to their holding facility, receive replacement fuel and ammunition and then start the process again. This helps generate realistic sortie rates which we feel are critical in modelling modern air warfare. It also makes airbases critically dependent on a few key nodes being operational – or, put from another perspective, if an enemy damages or destroys certain facilities he can shut down an airbase with much less effort, just like in real life.

Air bases currently support the aircraft logistics model in the game. All air bases include ammunition magazines which players can populate with the weapons, pods, tanks and equipment that aircraft need to successfully host their various loads. Fuel is not currently tracked but is provided automatically when an aircraft lands. As such, scenarios that exceed the flight time or an aircraft must include an air base or a ship capable of hosting aircraft or the aircraft will ditch (and be destroyed) when its fuel has been expended.

For more information on how to populate ammo magazines please review section 5.3.1 of the manual. It is highly suggested that you use the "Show only weapons compatible with aircraft hosted by parent" filter in the Add Weapons dialog to assist with finding the correct weapon-records to add.

Constructing an Air Base

Constructing an air base group is accomplished in a similar manner to building other groups in the game. You should add the individual facilities and then group them by selecting them all and pressing the g key.

It is highly suggested that you use our "Custom Overlay" feature to get a properly sized and sited image of the facility you are adding on your game map. This allows you to simply add the needed units where you see them in the image – easily and with extreme accuracy.

Once you have constructed the base, you can then use the import/export unit feature to save it for future use. We have already constructed thousands of airfields, airbases and airports which you can import into the game so it is best to check first before spending too much time building your own.

The databases have tons of air base facilities but the minimum units necessary for a functional air base group are as follows:

- 1x Runway long enough to support the aircraft you will base there. You can get this by comparing the runway length in the name and database viewer entry with the aircraft Take-off/Landing distance field in the database viewer.

- 1x Access Point or Taxiway large enough to support the aircraft that will be using them.

- 1x Unit Capable of holding the aircraft (Tarmacs, Open Parking Spaces, Hangars, Shelters, etc.) you'd like to host there. Units have the aircraft size and capacity in their names which you can compare with what is listed in the aircraft size field in the database viewer.

- 1x Unit with an ammunition magazine (Ammo Shelters, Ammo Pads, Ammo Bunker, etc.)

- 1x Fuel holding facility. We aren't actually requiring this as we are not tracking fuel logistics but may do so in the future.

Adding Single-Unit Airfield airfields is straight forward in that you just add them as you would any other unit in the game. They include all the necessary pieces required to function and just require you to rename the unit to whatever you would like unit to be. These can be saved to import file and exported back in as well.

Destroying Air Bases

Tying everything we have learned about the functions of Command air bases and how to build them, we can now see ways to destroy or mission-kill them.

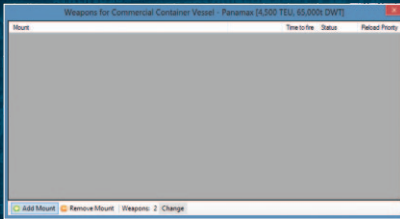Methods to Mission-kill or otherwise incapacitate a modern air base:

- **Destroy aircraft holding facilities**: Probably the least efficient but you can eliminate all aircraft at the facility by destroying the buildings/sites that contain them. Most nations harden these facilities or disperse aircraft to make this task difficult. To evaluate a weapon's effectiveness against a target please review the weapon's legal target values and damage point value (DPs) in the aircraft stores section of the database viewer and compare it to the target's armor and damage point values.

- **Destroy Magazines**: Destroying ammo storage facilities prevents aircraft from receiving necessary ammunition. A combat aircraft without its weapons is only marginally more useful than if it has been destroyed. Similar to aircraft holding facilities, most nations harden the facilities or disperse ammunition to minimize loses.

- **Destroy Access Points, Taxiways and Elevators**: Destroying these "transit" points prevents aircraft from reaching runways

or other aircraft launch facilities. Usually there are only a few of those in a base or ship so taking them out is a great way to jam the base shut.

- **Destroy runways**: Destroying these eliminates the ability of an aircraft to launch. This is probably the most efficient method. Nations tend to add secondary runways or use auxiliary runways to make this task slightly more difficult. COMMAND does support numerous dedicated anti-runway weapons.

8.5. DATABASE EDIT CAPABILITY IN THE SCENARIO EDITOR

COMMAND offers several tools to allow users to edit facilities and


naval units in the game. Users can add weapons mounts to a facility or naval unit by pressing the "Add Mount" button in the weapons dialog.

This launches the Add weapons dialog.

To add a weapon:

1. Search for the weapon you would like in the mount list at the bottom. To sort the list click on the column headers (ID or Name). You can also filter by a search term by checking off the filter by keyword check box and entering text in field
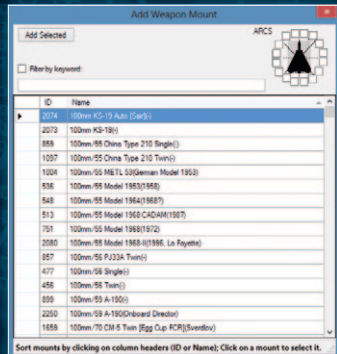
above the mount list. Once you find the mount you would like to add select it.

2. Use the arcs checkbox diagram to select the weapon's firing arc. If you'd like 360 coverage check them all off.

3. Press the "Add Selected" button and now the weapon will appear in the weapons dialog.

To remove a weapon:

1. Select the weapon in the weapons dialog.

2. Press the remove mount button. The weapon should now be removed from your list.
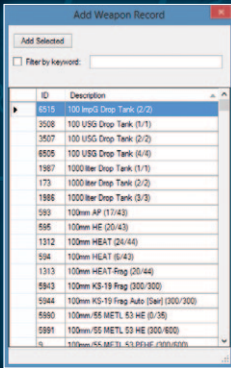
Users can also change the weapons within an existing mount by removing existing weapons records and adding new weapons record. You can do this by:

▪ Selecting the weapon's record you would like to remove by selecting it and pressing the "Remove Weapon Record" button.

▪ Pressing the "Add Weapon Record" button which will display the "Add Weapon Record" dialog.

To search for a record you can click on the table header or you can filter by keyword by checking off the Filter by keyword checkbox and typing in a text term in the provided text box.

To select a weapon's record select it within the list in press the Add selected button.

Adding Sensors

Users can add a sensor to a naval or facility by pressing the "Add Sensor" button in the Sensors dialog.
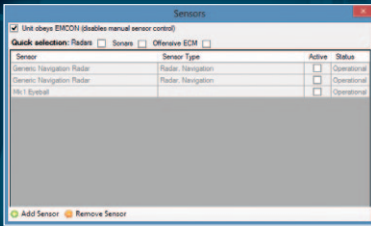
NOTE: To add a new magazine to a unit you will need to add it with a configuration file. You can find instructions on that in sections 7.1.6-7.1.9 of the game manual.

To Add a Sensor:

1. Search for the sensor you would like in the mount list at the bottom. To sort the list click on the column headers (ID or Name). You can also filter by a search term by checking off the filter by keyword check box and entering text in field above the sensor list. Once you find the mount you would like to add, select it.

2. Use the ARCS checkbox diagram to select the sensors detection and tracking/illumination arcs. If you'd like 360 coverage check them all off.

3. Press the "Add Selected" button and now the weapon will appear in the sensors dialog.
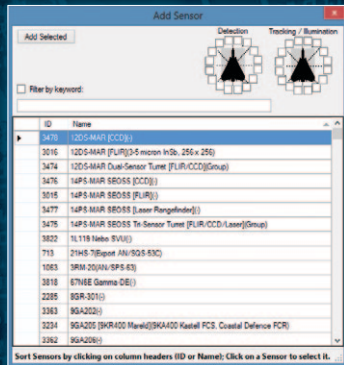
To Remove a Sensor:

1. Select the weapon in the weapons dialog.

2. Press the "Remove Mount" button. The weapon should now be removed from your list.

And remember...

When making changes, the important thing to remember is that any "full" scenario rebuild will delete your edits. To retain them you'll need to add changes to a scenario configuration file. You can do this by generating a so-called "delta file" which shows the changes from the "stock" configurations, and then applying them to the configuration file. Specific instructions on how this works can be found in sections 7.1.6- 7.1.9. Keep in mind that our DB editors always reserve the right to change record numbers so it is best to keep up with changes.

8.6. DLZ AND WHY IT MATTERS

When firing a guided weapon against a target, we want to have a reasonable probability (if not certainty) that the weapon will reach the target. Against static or slow-moving targets this is a straightforward affair; against high speed and/or agile targets, however, things can get more complicated.

One of the simplest concepts of estimating a weapon's reach against a moving target is the so-called "No-Escape Zone" or NEZ. This assumes that at the moment of weapon fire, the target turns tail and runs at its current known speed directly away from the launch point. The weapon then has to run the target down in a straight line.

The simplicity of NEZ made it attractive for early missile fire-control computers and indeed it remains a widely-used yardstick when comparing the kinematic performance of weapons such as AAMs/ SAMs, torpedoes etc. However, in real combat units rarely detect incoming weapons immediately at launch and not often turn tail and run away – at least not if they have a job to do. The NEZ is also meaningless against targets that naturally don't run away, such as cruise missiles and UAVs (and non-alerted targets of any kind, e.g. very frequently ships under torpedo attack).

Relying exclusively on NEZ is can also represent a "hidden" tactical liability. Consider an F-15 fighter preparing for a Sparrow AAM shot against a high-speed incoming MiG-25. Following NEZ's logic, the MiG's high speed means that the missile must be launched at

very close range in order to successfully perform the hypothetical run-down that the NEZ is built upon. However, we instinctively understand that this logic is flawed: The F-15 pilot should instead launch the Sparrow at even longer-than-nominal range, taking advantage of the MiG's high incoming speed and using it against it.

So what we need is an engagement zone concept that takes into account additional parameters known about the target such as its current heading and altitude. This concept is the Dynamic Launch Zone or DLZ.

Fundamentally, the conceptual difference between NEZ and DLZ is clear. NEZ answers the question: What will happen if I launch right now and the target turns right away and runs? DLZ answers the question: What will happen if I launch right now and the target keeps moving as-is?

The DLZ is harder to calculate for two reasons. The first one is fairly obvious: Unless the target is coming head-on or running straight away, the engagement geometry is significantly more complex. The second reason is that in order to answer the question faithfully, the algorithm must take into account the kinematic & guidance idiosyncrasies of the weapon in question. Some weapons head straight for their target at a near-constant speed; others deliberately opt for a parabolic loft; yet others employ subtle guidance tricks tailored to the nature of both the weapon's role and the characteristics of the nominal target the weapon was designed for. All these nooks and crannies have to be taken into account or else the DLZ calculation may well be off.

Command employs several algorithms for faithful DLZ calculations, some tailored for aerodynamic targets (with special options for non-maneuvering targets such as cruise missiles) and others optimized for orbital & ballistic targets such as ballistic missiles, re-entry vehicles and satellites. You will notice that AI crews are usually quite careful not to fire weapons at the extreme edge of their range envelope, preferring to sacrifice a slice of standoff for the

sake of ensuring a kill. There still will be outliers though, taking their chances will long-range "sniper" shots that can still do damage.

It should be emphasized that in the case of maneuverable targets, being inside the DLZ does not guarantee that the weapon will reach out to the target – after all, an alerted enemy may (probably will) not cooperate. But even if a shot is dodged, it still puts the target on the defensive. The top Serbian MiG-29 pilot in the Kosovo conflict was finally shot down after successively avoiding 3 AMRAAM shots in a single engagement – each time surrendering more of the initiative to his attackers, never having a chance to shoot back.

8.7. UNDERSTANDING DEPTH BANDS AND THE THERMAL LAYER

What follows is a brief summary of how the different depth ranges (reflected on the depth-presets on the unit throttle/altitude window) are modeled in COMMAND, and the tactical implications of each.

Towed arrays and/or VDS systems are represented by the red tails on each platform.
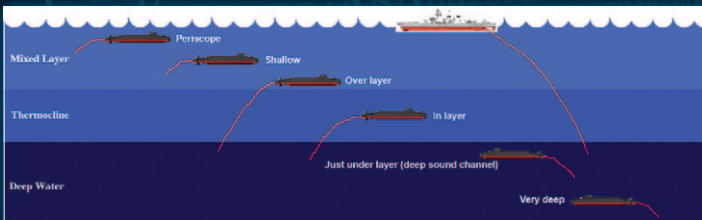
Periscope depth: This is the only depth at which subs can use their above-water sensors (periscope, ESM, radar etc.). A strong surface duct is usually present, which magnifies the transmission range of noise well beyond nominal (in fact, in calm seas a surface ship can use this duct to get early warning of threats that are visually/electronically stealthy but acoustically very noisy, such as small high-

speed boats). Bad weather significantly degrades this duct's effect. All sub-launched missiles can be launched at this depth. Because of the small water pressure cavitation sets in even at relatively low throttle settings. This is the optimum depth for detection against surface ships (and counter-detection by hull sonars on surface ships, as well as "shallow"-set sonobuoys and dipping sonars).

Shallow: Some (but not all) sub-launched missiles can be launched at this depth. The surface duct is still present but significantly weaker. This depth is suitable for keeping an eye (or ear, as it goes) on surface traffic and staying near (or at) missile-launch conditions while keeping out of the strong surface duct (reduce counter-detection by air/surface) and keeping close to the layer below for a quick dive if necessary (ditto).

Just above layer: Completely out of the surface duct, this depth reduces interaction with air/surface matters even more, at the benefit of ASW. Indeed, this is the ideal hunting ground for ASW-oriented subs with towed arrays. This is because subs at this depth automatically trail their arrays _below_ the layer; thus they maximize their detection range against anything below while masking themselves with the layer (and retaining their above-layer search ability with their hull sonars). Cavitation speed is significantly higher here. No missiles can be used at this depth or below.

In-layer: Similar to above, the towed array hangs below the layer but the counter-detection reduction is not as great (sound has to go through a lot less to reach an enemy sensor). Also the unpredictable mixup of warm and cold water at this depth range significantly reduces detection ranges against other subs also in the layer (think Mutara Nebula from Star Trek II).

Just under layer - the Deep Sound Channel: This is by far the most transmission-friendly depth band, greatly magnifying detection ranges. Surface ships and subs just above the layer both trail their VDS or towed arrays in this band. Sonobuoys and dipping sonars in "deep" setting also operate here. As a result, this is the worst place to be if

you are hunted by modern ASW forces (or conversely, the best place to be if you want to attract attention). As a consolation, cavitation speed rises even higher. ASW-tasked subs without towed arrays often loiter in this band to maximize the range of their hull sonars. Surface and shallow sonars as well as "shallow"-set sonobuoys and dipping sonars have their ranges drastically cut against under-layer targets, and in some cases may not be able to get through at all.

The Great Deep: The DSC still has some influence here but not as great. Cavitation sets in only if you go flat-out (modern subs do not cavitate at all here, even at flank). If the sea bottom is shallower than the sub's rated depth, the sub can "fly nap of the earth" or even go belly-up (sit on the bottom) and get the benefit of greatly reduced active sonar echo. This is generally the ideal depth for "transit" mode, when the emphasis is on moving from A to B rather than hunting, or for stationary ambush.

Please note that the layer ceiling and bottom, as well as its "thickness" (and hence absorption rate) are not fixed, but vary according to latitude, local depth and local temperature (the estimated actual values are shown on the map cursor). Trying to manually keep a submarine at the edges of the layer as these values shift can be a very tedious job, hence the depth presets which automate this.

Convergence Zones in Command:

- CZ detections are possible only if the local depth provides at least 600ft/200m clearance under the target.

- CZ information (range estimates) is displayed on the map mouse cursor right alongside the thermal layer info.

- CZ intervals range from 40nm in the poles to 20nm in the equator, depending also on local temperature.

- An arbitrary number of CZs are supported, if the sound is powerful enough and the receiver sensitive enough. Maximum direct-path range is 20k yards (~9.5nm).

- CZ area depth (i.e., ring thickness) is assumed to be 5nm, so the actual detection range at each CZ interval may be plus/minus 2.5nm.

- To verify if CZs can indeed form between the sensor and target, we check not only their respective local depths but also the depths at the nadirs of each CZ curve; so for example the sensor and the target may both have an abyss below them but if an underwater ridge high enough is between them it may well block the CZ path.

- Sonar operators are assumed to be proficient enough to discriminate between a direct-path contact and a CZ one (by examining both aural tones and the bearing rate); as a result, the generated AOU will either start from the sensor platform and extend to max direct-path range, or (in the case of a CZ detection) start from the innermost CZ interval and extend to max sensor range.

9. GLOSSARY

AAA: Antiaircraft Artillery

AAM: Anti Air Missile

AAW: Anti Air Warfare

ASuW: Anti Surface Warfare

ASW: Antisubmarine Warfare

BINGO/ BINGO FUEL: Typically for aircraft. Bingo is the moment or condition that the aircraft has only enough fuel to make it back to its own base at a normal cruising speed and altitude.

BOL: Bearing Only Launch. BOL capable weapons may be launched down a bearing toward a target. Most BOL weapons have an activation point where their internal sensors are enabled. The

activation point is the point selected when ordering the launch. With the launching unit selected, use Keyboard Command for BOL launch is CTRL + F1, and select the activation point on the map.

DLZ: Dynamic Launch Zone.

ECM: Electronic Counter Measures

GMT: Greenwich Mean Time.

HVU: High value unit.

LOS: Line of Sight

NEZ: No escape zone.

OOB: Order of Battle, a detailed list of units and equipment in a side's inventory.

OECM: Offensive Electronic Counter Measures.

ROE: Rules of Engagement.

RTB: Return to Base.

Winchester: A unit (usually aircraft) that has expended all its primary ordnance relevant to its role or mission tasking, for example a strike aircraft that has dropped all its bombs.

10. ADDENDUM

10.1. USER INTERFACE

10.1.1. START MENU

Added Order scenarios a filter on the **Load Scenario** window. The player can list scenarios by order of their filename, scenario date, difficulty and complexity. This should help new players easily pick out easy/simple scenarios to get started.

When the player attempts to load a scenario for which the corresponding DB is missing, the game informs them of this and aborts the load.

10.1.2. GAME OPTIONS

General: The Options window has been significantly expanded, with the followings additional options:
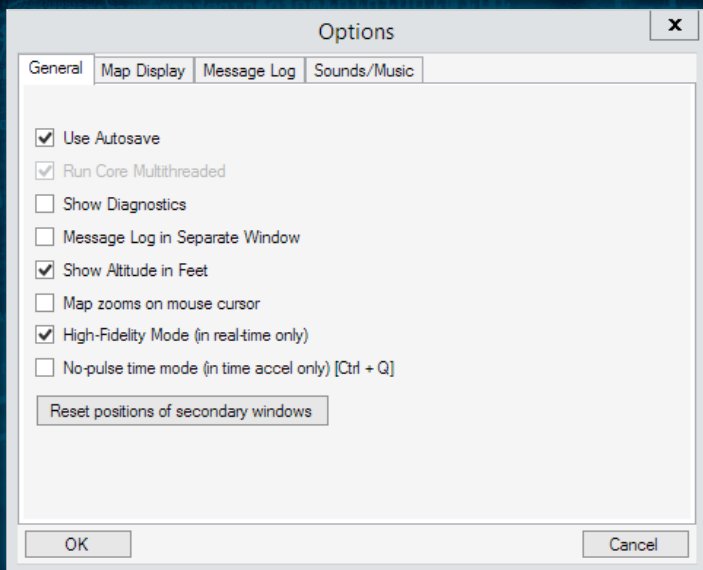
Map Zooms on mouse cursor location: When enabled, the map will zoom to the point at which the mouse cursor is located (similar to Google Maps), instead of the camera center.

High Fidelity Mode: When enabled, at 1:1 time compression (ie. realtime mode) Command's simulation engine runs in 0.1 sec time slices and also refreshes the map every 0.1 seconds. This provides increased simulation & visual fidelity at the cost of performance. When disabled, at realtime mode Command runs in 1-sec slices and refreshes the map every 1 sec. This can speed up gameplay on less powerful machines.

No Pulse Mode: This is on by default and at any time acceleration setting, the map & UI do not refresh every second but every 0.1 sec. This means that the sim engine executes each turn not in "pulsing" mode (emulating Harpoon's presentation), but as fast as possible. The net result of these changes is that at time acceleration (particularly at high values, e.g. 1:30 or 1:60 sec) the map updates much more smoothly and the overall game speed is significantly improved. To retain the "traditional", Harpoon-style pulsing map refresh set this option to NO. This setting can be toggled on/off via three ways:

- From the main menu bar: Game -> Options -> No-pulse time mode.

- Drop-down selector Time Mode, placed to the right of the existing Time Compression drop-down selector.

- Keyboard shortcut: Ctrl+Q .
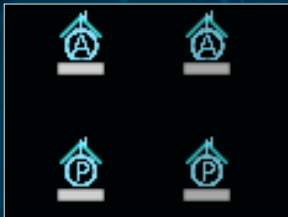

MAP DISPLAY

Sonobuoy Visibility: This helps declutter the tactical map if too many sonobuoys are present in the view. Available settings are: Normal (sonobuoys appear like every other unit), Ghosted (buoys appear semi-

transparent) and Do Not Show (buoys do not appear at all; not recommended unless necessary).

Reference point visibility: Three settings are available: Normal (as currently), Small (half-size and grayed out), and Do Not Show. This significantly declutters the map in cases of dense ref-point concentrations.

Map Symbols: You can now choose different map symbol sets. The choices are (a) NTDS + NATO APP-6 (current & default setting), and (b) Stylized. By default, the stylized set consists of Terry Courtney's icon replacement set, but players can edit/replace each icon at will.

Map Cursor Databox: The map-cursor databox (a.k.a. Black Box of Data, or simply BBD) can now be configured to appear beside the cursor (as currently), appear on the bottom of the map, or not appear at all.
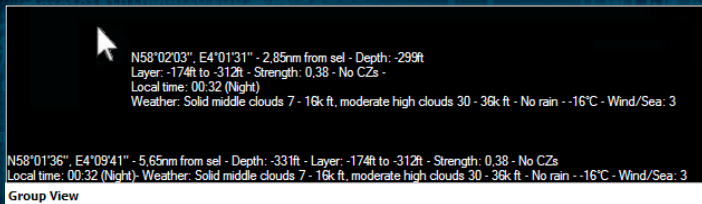
Show Ghosted Group Members: You can toggle ghosted members of group off and on. If off you'll just see a group symbol and if on you will see the ghosted member at its present location.

Show Plotted Paths: Can choose to show plots lines of the select unit, all units or no units.

10.1.3. VIEW

Wireframe Map (Black Globe) View: Turning off BMNG from the map-view options enables a black wireframe map, emulating the Harpoon3 map style. Note that the relief layer can still be overlayed as usual.
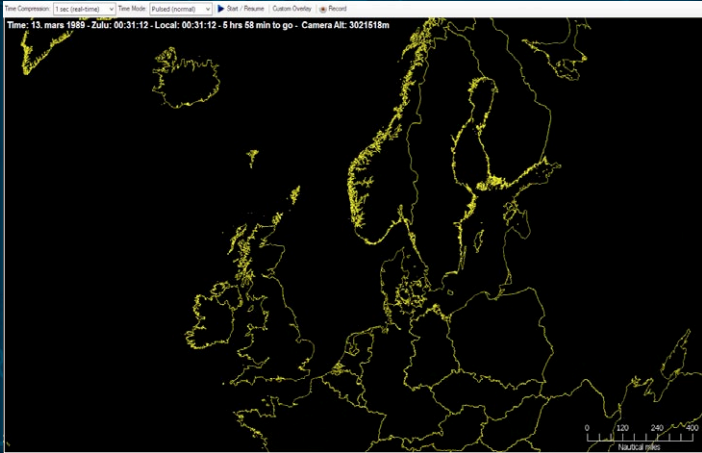

10.1.4. UNIT ORDERS

The Unit Orders menu has received many new menu items, the most important ones are:

Attack Options: All attack, disengage and weapon state commands are found under the new Attack Options menu item. All menu items have been given associated hotkeys for quick access.

Attack Options -> Drop Target(s):): This function allows a player to drop one or more units from its target list. After selecting this function simply click on the unit you would like to drop or drag select multiples.

Attack Options -> Disengage (Drop All Targets): This function drops all targets from the unit target list and the unit will continue on with its previously assigned mission or plot.
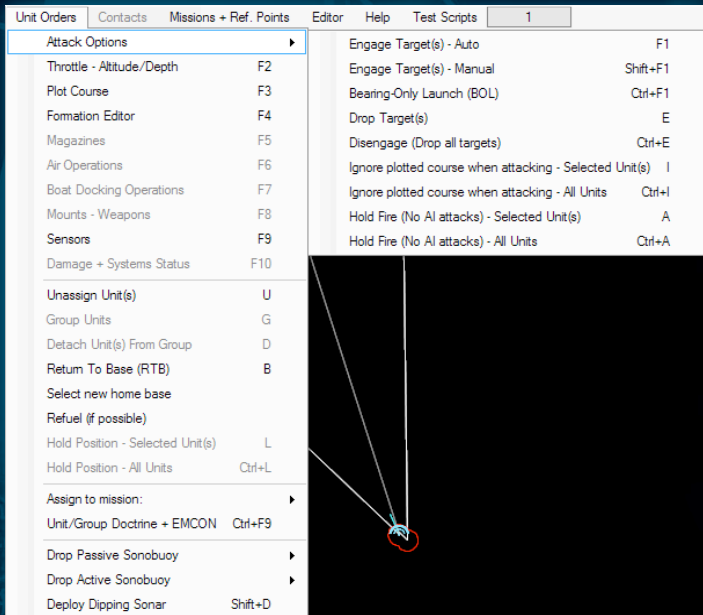
Attack Options -> Ignore Plotted Course When Attacking: Selected Unit(s): When selected, units assigned to missions will ignore plotted courses and attempt to intercept targets.

Attack Options -> Ignore Plotted Course When Attacking: All Units: Sets this property for all own units, not just the selected one(s).

Attack Options -> Hold Fire (No AI attacks). Selected Unit(s): When selected, units will not fire weapons automatically. Weapons will only fire when manually assigned to targets through Engage Target(s). Manual.

Attack Options -> Hold Fire (No AI attacks). All Units: Sets this property for all own units, not just the selected one(s).

Hold Position. Selected Unit(s): This function orders the selected mobile facilities to hold position, i.e. ignore movement orders.

Hold Position. All Units: Sets this property for all own units, not just the selected one(s).

10.1.5. OWN UNIT CONTEXT MENU (MOUSE RIGHT-CLICK)

The Unit Context Menu has been updated to match the Unit Orders menu. In addition, the context menu has a menu item for the Range / Bearing Tool, as well as a handful extra items for use in the scenario editor (Edit Unit Properties, Unit is Auto-Detectable, Set Orientation) .

Hold Position command added to right-click menu for mobile ground units.

10.1.6. MISSIONS. REFERENCE POINTS

The Missions. Reference Points menu has received the following additions:

De-select all reference points: All currently selected reference points will be de-selected.

Define Zone: Selecting this option and then left click and dragging. square on the map will drop 4 reference points. Same as right click function.

Remove relativity from selected Ref Point(s): This option will clear Fixed or Rotating Bearing settings for the selected reference point(s).

Navigation Zone and Exclusion Zone Submenus: These functions were moved from the unit menu.

10.1.7. MAP INFORMATION, UNIT/GROUP/ CONTACT STATUS. SECONDARY WINDOWS

Command now handles the 125% desktop font setting (increased DPI) much more gracefully, and adjusts the dimensions of the right-column panels to compensate. (We welcome feedback on any UI problem/mismatch we have missed.)

Significant UI/map modification: Detected non-friendly unit groups (airbases, installations, naval bases, mobile groups etc.) are shown as group entities while in Group view.

Unit Status Panel now includes a weapons summary panel for selected unit/group. This lists the current weapons inventory for the unit/group selected. Each of the weapon lines is also a link to the relevant page on the DB viewer.
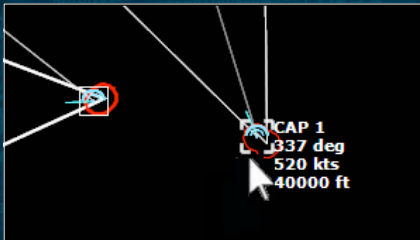
While having a weapon selected on the map, clicking on the weapon-class button on the unit status window will bring up the weapon's relevant page in the DB viewer.

New map UI feature: Mouse preview mode. When hovering over a non-selected unit/contact, the selection & datablock information for that unit is displayed slightly ghosted. This is useful for quick-look info (without having to display datablocks for all units) and particularly handy when targeting contacts.

New major UI feature: Quick-jump slots. This allows the player to quickly & easily jump between locations/views of the battlefield without map zoom/pan delays.

How they work:

- To store. slot: Select. unit/contact. Press Ctrl+[num], where [num]. 1...0. The unit selection & camera altitude are now stored on slot No.[num] (and persisted per-side).

- To jump to. saved slot: Simply press [num]. If. slot with that index exists, the camera will move to the marked unit location. altitude.

- If you are using tracking-camera when saving a slot, this setting is also saved and enforced the next time you jump to this slot.

Secondary windows now remember their last position and size (these are saved on the Command.ini file so they can be tweaked offline). So you can set up your desired "working environment" once and the windows will retain the customizations across scenarios and game sessions. To reset the locations & sizes to their default values, click on the button "Reset positions of secondary windows" on the Game Options window.

Secondary windows now correctly minimize/maximize together with the main game window, and they no longer visually block other program windows.

Secondary windows can now be closed by pressing Esc, or their assigned function key (F2 etc.).

When you select a unit, its weapon range symbols (in addition to sensor symbols) are now also highlighted (thickened).

You can now manually mark a contact as friendly ('F') or neutral ('N'). If the contact is subsequently detected with sensors capable of establishing its true side and/or posture, the manually-set posture is discarded.

Added "Quick Jump" top-level menu which lists all saved quick-jump slots. Clicking any of the slots jumps the camera to the specified location & altitude (ie. same as using 1...10 keys).

Most hotkeys now have a menu item. Three new menu categories added ('View', 'Contact' and 'Quick Jump').

On the unit status window, the assigned mission description (if applicable) is now a hyperlink. Clicking it brings up the mission editor window and selects this mission. This streamlines the process of quickly checking up the mission details of the selected unit/group.

Significant UI/map modification: Detected non-friendly unit groups (airbases, installations, naval bases, mobile groups etc.) are shown as group entities while in Group view. As an example, this is a view of Kien An airbase in "Down Town" under v1.03 (both group- and unit-view).

And this is the same base as presented in group-view under v1.04. The (detected) member units of the group appear as before (ie. individual contacts) in unit-view. When selecting for attack etc., any orders given affect the member units of the group and not the group entity itself. So for example if the player selects an enemy airbase as the target for manual weapon allocation, the target list of allocation window lists all the detected facilities of said airbase.
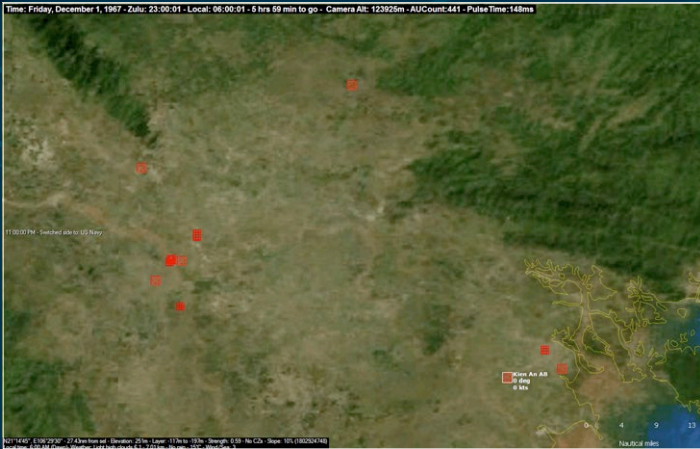
10.1.8. MOUSE FUNCTIONALITY:
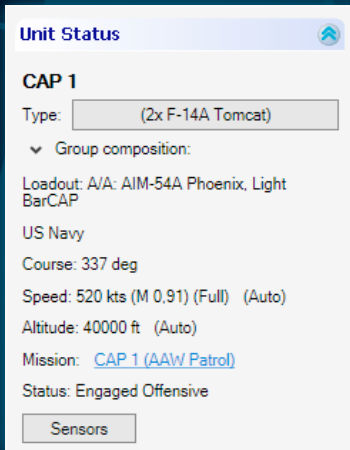
Added double-click functionality:

- Plotting course (F3): double-click when placing the last waypoint when plotting. course to exit Plot Course mode.

- Using Range/Bearing tool (Ctrl. D): double-click to exit Distance/Bearing tool.

Create new Waypoint: Press and hold Ctrl key, select and drag existing waypoint. Note that the mouse must move minimum 4 pixels for the new waypoint to be created.

Create new Reference Point: Press and hold Ctrl key, select and drag existing reference point. Note that the mouse must move minimum 4 pixels for the new reference point to be created.

10.1.9. MISSION EDITOR

You can now launch the mission editor by selecting the mission name in the Unit Status dialog. Delay-timed missions are displayed in the mission editor with a "[D]" prefix.

Unit Status

CAP 1

Type: (2x F-14A Tomcat)

🔻 Group composition:

Loadout: A/A: AIM-54A Phoenix, Light BarCAP

US Navy

Course: 337 deg

Speed: 520 kts (M 0,91) (Full) (Auto)

Altitude: 40000 ft (Auto)

Mission: CAP 1 (AAW Patrol)

Status: Engaged Offensive

Sensors

New patrol option: Patrol Throttle (default is Loiter/Creep). Units that are following a patrol course inside their patrol area and have no other throttle override obey this throttle setting. This allows customizing patrol behavior for persistence (loiter), maximum area scan (cruise) or special cases that warrant full/flank throttle.

New patrol option: Prosecution Area. You can now define an exact area you want units to pursue contacts during a patrol. Units assigned to it will not pursue contacts outside the area. To use: add and select the necessary reference points, press the prosecution area button and add/remove reference points as you would with the patrol area function. If no prosecution area is added the mission works as it traditionally did in that there is no threshold. Prosecution Areas (PAs) serve two purposes:

1. They act much like a forbidden zone in that contacts appearing within them are marked for interception, but they also restrict the extent at which interceptions will happen. So if you want your fighters to e.g. be triggered only by bandits within 200nm of a protected HVU instead of "waking up" to contacts thousands of miles away, PAs are the solution.

2. They act as a "leash" for assets on a patrol; they effectively determine the extent to which the patrol assets can give chase to receding targets. If the bandit moves out of the PA, the defender is forbidden to follow (though it can still engage with weapons if feasible). This solves the problem of patrol assets

over-extending themselves during interception, quite often falling victims to feints/traps.

PAs are supported in the UI by modifications to the Mission Editor UI, and are populated by reference points in the same way as existing patrol areas. They are empty by default, and in this case the AI behavior is the same as before (intercept bandits far away etc.), to facilitate existing scenarios. Units that are assigned to a patrol with a prosecution area will target & engage only contacts that are within this area (or their patrol area). If they are not on patrol or their patrol does not have a prosecution area, the existing AI rules apply. This makes it possible to create SAM ambushes (shoot at far less than max range), divide areas of responsibility for multiple patrol forces etc.

Added sprint-and-drift behavior for units that are part of a surface or sub group (the most common case requiring this behavior). This behavior is enabled by going in the formation editor, selecting the desired unit, and ticking the checkbox "Sprint and Drift" on the formation editor toolbar.

New Strike Mission option: Use Auto-Planner. Selecting this check box activates the auto mission planning. This allows the AI to set up a variable preplanned flight plan based on range, fuel and load-out flight profile.

Units listed on the mission editor and the air ops window now use natural sorting for the list order. So instead of this:

Archer #1		Archer #1
Archer #10		Archer #2
Archer #11		Archer #3
Archer #12	...you get this	Archer #4
Archer #2		[...]
Archer #3		Archer #10
Archer #4		Archer #11
Archer #5		Archer #12
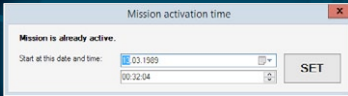
You can now set the activation time for. mission through the mission editor.

Aircraft entries are now color coded to show readiness in various lists. Red is unavailable, black is readying, and green is ready.

10.1.10. MISC IMPROVEMENTS

You can now select a new home base for multiple-selected aircraft.

You can now manually order a helicopter to hover and use its dipping sonar if it has one. The key combination is Shift+D.

Major new feature: You can set speed, altitude and sensor commands per waypoint. There are currently two ways to do this: Select the waypoint and either right-click on it to show available command, or press F2 and/or F9 to bring up the Speed / Altitude and Sensor windows respectively. Waypoint-specific command are applied to the unit once the unit reaches said waypoint.

Significant improvements on the Speed / Altitude window (F2): Altitude presets for aircraft, similar to existing submarine depth presets, and ability to input precisely the desired speed & altitude/depth with arithmetic values in addition to the slider bars.

The player can no longer plot paths or select and drag-move the waypoints of non-datalinked or non-wire-guided weapons. Only datalinked or wire-guided man-in-the-loop weapons can have courses altered.

Datalinked and wire-guided man-in-the-loop weapons can be re-targeted. Select the weapon(s) to retarget, press the F1 hotkey, and select the new target.

Datalinked Air-to-Air Missiles (AAMs) and Surface-to-Air Missiles are automatically re-targeted if the original target has been destroyed, granted the new target is of the same general type, within 20 degrees (no sharp turns that bleeds energy), at least a few seconds from impact, etc.

10.1.11. DATABASE VIEWER

A weapon-specific page has been added to the DB Viewer. This allows viewing information relevant to. weapon such as its stats (dimentions, speeds, altitudes), engine, warhead(s), datalink, etc. Search, filtering etc. for weapons work just like any other unit type, except that country-level filtering is not available for weapons.

When viewing information on. platform, the per-engine maximum speed is displayed on the "Powerplant" section. This is particularly useful for diesel-electric submarines as it shows the maximum speeds available for each of the available engines (including Air Independent Propulsion, or AIP).

Added DB Viewer hyperlinks to weapons on the aircraft Loadout Selection window. Click on the weapon name and the DB Viewer will display the page for that weapon.

Added DB Viewer hyperlinks to the aircraft types in the Air Operations (Air Ops) window. Click on the aircraft type and the DB Viewer will display the page for that aircraft.

Added DB Viewer hyperlinks for weapons on the Unit Weapons window.

The weapon page on the DB Viewer now lists the guidance details for the displayed weapon.

10.1.12. MUSIC & SOUND EFFECTS

Sound effects are now played on a single channel instead of multiple parallel channels. This fixes the distortion & crackle problems when too many effects were played concurrently.

New and improved sound effects for various gun calibers (incl. lasers), aircraft & helicopter take-offs, new contacts, alert (weapon contacts) etc.

Background music is now available. This can be enabled & disabled through Game -> Game Options -> Sounds/Music. Players can add more soundtrack files (MP3) to be played randomly, by placing them on theCommand\Sound\Music folder. The included track is the "official" Command soundtrack, i.e. the one from the promo trailer.

10.1.13. UPDATED HOT KEY LIST

You can always see the current list in. new window displaying all hot keys From the main menu, Help -> Hotkeys.

Many new hotkeys have been added.

Most menu items now have. hotkey.
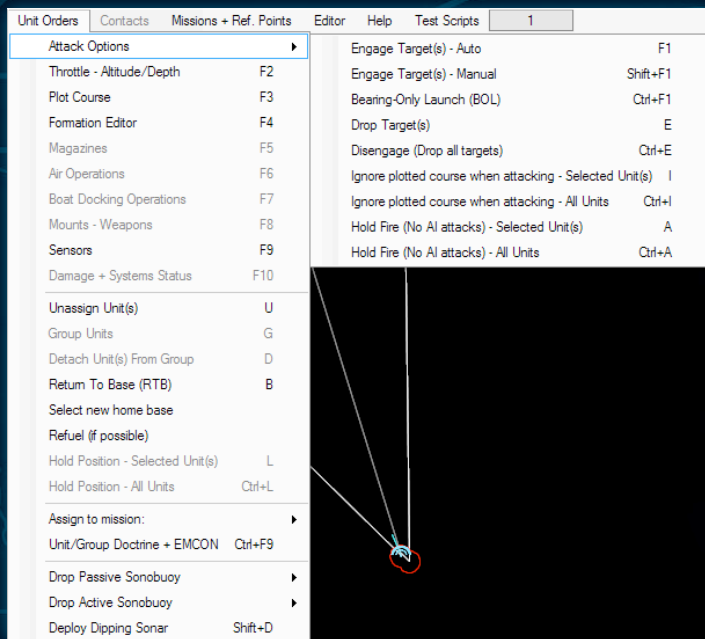
10.1.14. OTHER UI CHANGES

Losses and expenditures are now listed in alphabetical order, to make it easier to search for specific unit types lost. weapons/stores expended.

When the player attempts to load. scenario for which the corresponding DB is missing, the game informs him of this and aborts the load.

10.2. GENERAL GAMEPLAY

The "Start Game" window has an extra button added: Resume from last Autosave. This makes it even easier (and more immediate) to continue a game session after a crash, freeze or other problem. Autosave now allows going farther "back in time": When an autosave is performed, the existing autosave file is renamed to autoscen_20, the existing (if any) autoscen_20 file is renamed to autoscen_40 etc. all the way to autoscen_100. This way, whenever there is a reported problem the dev team can go back up to 100 (RL) seconds to troubleshoot reported issues. This solves the "autosave after the fact" problem.

10.3. AI MECHANICS

Aircraft now use mid-air refueling much smarter and more reliably, dramatically reducing cases of running out of fuel. There is a long list of tweaks and improvements in AI behavior, but three major changes stand out:

1. Crews are now context-aware in their logic of picking the most suitable tanker. Depending on what the aircraft is supposed to be doing (enroute to mission, returning, free-roaming, on patrol, on support circuit etc.) the optimal choice is often significantly different

2. Tankers are now smart enough to avoid overbooking (and thus getting completely drained). They now reject refueling requests that they estimate they will not be able to service.

3. Aircraft returning from a mission (e.g. strikers on the RTB leg) will opt to bypass available tankers and head straight for their home bases if possible. This lightens the load on available tanker assets and eliminates the need to manually change the "use refuel" doctrine mid-mission. If they do need to refuel on the return leg they do as before.

Fighters launching BVR missiles now regularly attempt to "crank" (turn to the side while still tracking/painting as necessary, and throttle back) once they have taken all their shots. The purpose of the maneuver is to reduce the rate of approach with the enemy and thus delay enemy countershots as much as possible.

NCTR (Non-Cooperative Target Recognition) for select radar systems has been added, enabling active type/class-identification of air targets. See here for introduction to the technology: http://en.wikipedia.org/wiki/Radar_MASINT#Non-Cooperative_Target_Recognition   NCTR as modeled in Command is broken into two techniques:

- JEM: JJet engine modulation (aka fan blade counting). This is simpler to process and more widespread but works only within a frontal arc of 15 degress offset from the target's front (so that the fan blades are visible to the radar).

- NBILST: Narrow-beam Interleaved Search & Track (aka synthetic pseudo-imaging). This is far more demanding computationally and is possible only with phased-array radars, but can work regardless of target aspect.

Interestingly enough, even some quite old radar systems (like Square Pair on SA-5 batteries) have an NCTR ability. However, because of its manual/semi-automated nature (the operator literally looks on raw radar return modulation data on an oscilloscope) the classification time varies highly with operator proficiency. In modern systems

the highly automated nature of the process (point the radar at the target and wait) means that crew skill is irrelevant.

When a target is classified using NCTR a relevant message is added to the message log.

Damage repair rates (for sub-systems) have been increased and messages are now provided when a subsystem is repaired for a heavier to a lighter state of damage or fully restored.

When examining subsystems damage on a unit (Damage Control window), the different degrees of subsystem damage (light, medium, heavy) are represented by different colors (yellow, orange and orange-red). Destroyed systems retain the red color.

* Numerous fixes and tweaks to damage modelling have been implemented including ARM impacts, cluster munitions, proximity blast damage, depth charge damage & duds etc.

Aircraft now determine the correct altitude to drop their ordnance much more reliably without manual control. (We would love to boast "100% reliably" but that's tempting fate. So we don't.)

Helmet-mounted sights (HMS) are now taken into account when deciding how much off-boresight an aircraft can shoot an AAM.

Aircraft & submarines have more realistic dive rates.

Ships can now effectively use semi-active SAMs in anti-surface mode, as they are taking terminal illumination concerns into account during pre-fire checks.

Refined acoustic reverberation modifiers for sonars. Now the sonar's tech level (more modern sets are affected less) and operating frequency (lower-frequency sets suffer the most) also play a part in determining degradation due to reverberation from shallow water or under-ice conditions.

Aircraft dropping sonobuoys are now constrained by the channel capacity of their sonobuoy datalinks. In most cases this means they will

drop fewer sonobuoys per "string". To compensate for this, the default minimum spacing between successive sonobuoys has been doubled.

Strategic submarines now actively evade not only weapon contacts but also potential sub & surface threats in proximity.

Aircraft now have different safety margins for the Bingo calculations depending on their type. "Force-multiplier" assets like tankers, AWACS, EW aircraft have higher, more conservative safety margins while more "expendable" assets like tactical fighters have lower, more aggressive margins.

Any aircraft with less than 1500 lts of internal fuel remaining is considered to be in bingo status regardless of its proximity to its home base (this helps with bingo calcs very close to the base).

Aircraft AI improvements. Group members now always stick with the leader on a manual plotted course even if they have strike targets assigned.

New doctrine option: Use SAMs in anti-surface mode (or not).

New patrol type: Sea Control. This type effectively combines the targeting criteria of the ASuW-Naval and ASW patrol. Units assigned to this patrol type will target anything on the sea surface and below it.

New doctrine option: Engage targets of opportunity (default is NO). When enabled, a unit will target and engage any contact for which it has suitable weaponry (at range up to 2x of max suitable weapon range), regardless of its mission tasking.

Major new simulation feature: Payload weight & drag affects the aircraft fuel consumption. You can test this easily by e.g. assigning two identical aircraft to a patrol, one heavily armed and one lightly loaded, and comparing their endurance & range figures.

Engine throttle (cruise, full, flank etc.) is now taken into account when calculating the IR signature of aircraft, and thus its detection range by a sensor.

Floating mines can now be detected by visual sensors (incl. eyeballs) on ships and aircraft who fly lower than 150m/450ft and slower than 200kts. Perfect-conditions detection range is 300 meters but actual detection range can be significantly lower depending on lighting, weather etc.

Aircraft on ground attack whose attack profile altitude is lower than the minimum weapon release altitude will attempt to stay just over the latter (instead of bombing from max release altitude). This significantly improves bombing accuracy but can also make aircraft more vulnerable to air defences.

Improved weather effects modelling: cloud cover now significantly disrupts EO/IR/laser sensors, depending on cloud thickness (difficult but doable in light/medium clouds, but good luck dropping LGBs from med/high altitude in typical CentFront weather).

There are now 11 pre-defined cloud cover profiles. The mouse pointer has been updated with more information on the clouds so that the player can adjust operations accordingly. Some profiles have two layers of clouds which opens the door for some interesting scenarios. It is now possible to operate underneath clouds, over clouds, inside clouds, and visibility through cloud layers depends on cloud density. The profiles are:

- Thick fog 0-2k ft, solid cloud cover 7-36k ft
- Thin fog 0-2k ft, solid cloud cover 7-36k ft
- Solid middle clouds 7-16k ft, moderate high clouds 30-36k ft
- Moderate middle clouds 7-16k ft, light high clouds 27-30k ft
- Moderate high clouds 25-28k ft
- Moderate middle clouds 7-16k ft
- Moderate low clouds 2-7k ft
- Light high clouds 20-23k ft
- Light middle clouds 10-16k ft
- Light low clouds 5-7k ft
- Clear sky

* Offboard sonar sensors (e.g. towed arrays. VDS) not only have their powerplant own-noise modifiers halved, but also get. further reduction as per the existing thermal layer and deep sound channel modifiers on sound propagation. This makes these sensors even more potent, especially when they hang on the other side of the thermal layer than their carrier platforms.

The AI in ships. surfaced submarines can now engage incoming SAMs in ASM mode. (Player-issued attacks on SAMs are still deliberately ignored).

The AI can now fire heavyweight torpedoes out to 8nm instead of 6nm. (This, BTW, proved in repeated tests to be the practical upper limit against targets who are reasonably alerted and attempt to evade. Any longer than that and more than often the target will outrun the weapon. This holds even for super-heavy torpedoes like the Type 65 series.) * Significant improvements to ABM/ASAT intercept logics:

  - Units with ABMs/ASATs target & begin tracking ballistic & orbital targets at much larger distances (to compensate for the very fast closure speed). This allows taking shots at the maximum intercept range.

  - Additional pre-fire checks for mandatory datalinks. If a mandatory datalink connection cannot be established, the firing sequence is aborted rather than launching the weapon "blind". (This is critical for ABMs but also benefits other weapon types with mandatory datalinks).

* New major feature: Proficiency levels

  - Proficiency modifiers are applied on a side level (on the "Add/Edit Sides" window in ScenEdit mode) and can affect a wide number of factors. The available levels are Novice, Cadet, Regular, Veteran & Ace. Default proficiency level for each side is Regular.

Aircraft turn rates and agility modifiers on missile evasion attempts are now affected by proficiency levels. The changes, as percentages of the original values, are as follows:

1. Novice. 60% of nominal
2. Cadet. 70% of nominal
3. Regular. 80% of nominal
4. Veteran. 100% of nominal
5. Ace. 110% of nominal

The weapon endgame messages have been updated to display the information of these modifiers.

OODA values are affected by proficiency levels. Novice crews take twice the nominal OODA value to execute their targeting process while ace crews beat even the nominal best-case value (all other levels in-between).

10.4. SCENARIO EDITOR

The "Add Unit" window now remembers all selection filters used on the last unit addition and re-applies them whenever called up. This makes it easier to rapidly add different but similar units. You can now edit aircraft names and delete specific aircraft directly through the Air-Ops window.
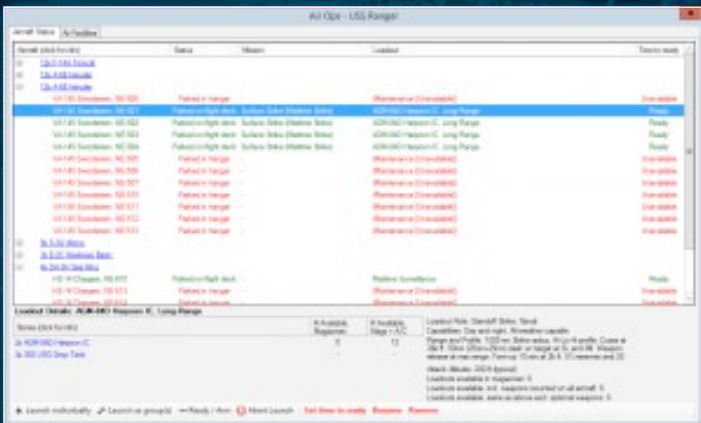
New event trigger: Unit Detected. Fires when. unit (flexibly filtered from side-wide down to specific unit) is detected by the specified side.

New event-engine addition: Event Conditions. Conditions are managed and added to/removed from events just like triggers and actions. An event without conditions fires normally (probability check etc.). If conditions are present, all of them must be satisfied in order for the event to fire. (We intend to add the option to configure whether all conditions must be satisfied or at least one of them, for greater flexibility).

Added new realism option: Unlimited Aircraft Weapons. When enabled, aircraft have unlimited loadout packs available even if their bases are not loaded with weapons at all. This is not recommended for realistic prolonged scenarios (it makes airpower too omnipotent) but can be useful for quick experimentation.

Added first event condition: Side posture. (e.g. Side-A must consider Side-B as [friendly|neutral|unfriendly|hostile]). The condition also has an optional "NOT" operator (e.g. Side-A must not consider Side-B as friendly).

Significant addition to patrol missions: Prosecution Area.
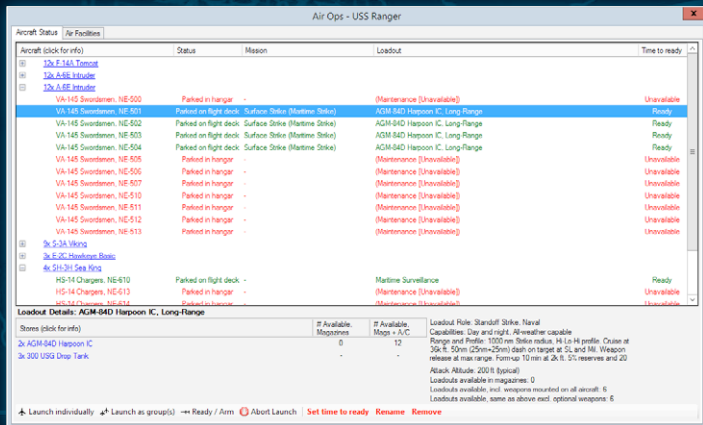
- Prosecution Areas (PAs) act much like a forbidden zone in that contacts appearing within them are marked for interception, but they also _restrict_ the extent at which interceptions will happen. So if you want your fighters to e.g. be triggered only by bandits within 200nm of a protected HVU instead of "waking up" to contacts thousands of miles away, PAs are the solution.

- PAs Act as a "leash" for assets on a patrol; they effectively determine the extent to which the patrol assets can give chase to receding targets. If the bandit moves out of the PA, the defender is forbidden to follow (though it can still engage with weapons if feasible). This solves the problem of patrol assets over-extending themselves during interception, quite often falling victims to feints/traps.

- PAs are supported in the UI by modifications to the Mission Editor UI, and are populated by reference points in the same way as existing patrol areas. They are empty by default, and in this case the AI behavior is the same as before (intercept bandits far away etc.), to facilitate existing scenarios.

- Units that are assigned to a patrol with a prosecution area will target & engage only contacts that are within this area (or their patrol area). If they are not on patrol or their patrol does not have a prosecution area, the existing AI rules apply. This makes it possible to create SAM ambushes (shoot at far less than max range), divide areas of responsibility for multiple patrol forces etc.

- For PAs to work, the patrol option "Investigate targets outside contact area" needs to be enabled.

- The doctrine option "engage targets of opportunity" _overrides_ the prosecution area limit.

Grouping land units with ammo dump type units with matching weapons records for replenishment. This allows for reloads which means that SAM, artillery and land units can be replenished. Added sprint-and-drift behavior for units that are part of a surface or sub group (the most common case requiring this behavior). This behavior is enabled by going in the formation editor, selecting the desired unit, and ticking the checkbox 'Sprint and Drift' on the formation editor toolbar. When rebuilding a scenario with the latest database, the simulator will automatically re-shuffle the aircraft and move those that are ready in less than 60 minutes to the flight deck. Ditto when readying an aircraft in the scenario editor and selecting 'Ready Immediately'. It may be worth noting that the simulator is not topping up the deck completely, it is keeping some free space on the deck for the recovery cycles since landing aircraft may have to park there in case all elevators are busy.

10.5. AIR OPS UI

An "Abort Launch" button has been added to the Air Ops menu. When clicked, any of the selected aircraft which is preparing to launch will abort the sequence and attempt to return to an available parking facility.

10.6. AIR OPS MECHANICS. AI

Only aircraft that are in a parking facility can be armed. This solves the problem of airbase traffic jams due to aircraft being readied while they are parked on transit points, e.g. elevators.

When an aircraft being re-equipped (at its base) ends up in Winchester status because one or more of the loadout's primary stores are missing, the outfitting is cancelled and the aircraft reverts to Reserve (clean) loadout. If this is happening interactively (ie. the player has manually ordered this re-equipment) then a notification pop-sup for this; otherwise the action is performed silently.

Tweaked the non-bingo RTB behavior for aircraft so that they return to base at full rather than cruise throttle.

Significant tweaks to "air boss" AI:

1. When an aircraft is about to occupy a transit facility (e.g. elevator on ship) in order to get to the runway and take off, a check is first made if another aircraft is in the post-touchdown sequence. If that's the case, and if only one transit facility is available, the outgoing aircraft is held to wait so that the incoming one uses the transit facility to clear the runway.

   (This was added to rectify the problem of "the air boss is sending back to the hangar one or two aircraft from an entire outgoing group [in order to make the transit facility available to the ones that just landed] and therefore breaks group cohesion". So now an outgoing group may take longer to get out, but it get out whole.)

2. Likewise, the air boss sends back aircraft to hangars more selectively (much more rarely).

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