Mission Editor

INTRODUCTION

The mission editor included with F/A-18 Operation Iraqi Freedom is a powerful tool for creating, editing, and saving missions. It provides the player with an endless supply of new and challenging missions. This document will describe the use of the mission editor to create, modify, and save your very own F/A-18 Hornet missions.

The mission editor allows the user to create missions only within the Iraqi theater. Aircraft, helicopters, targets, ground vehicles, ships, SAMs, and AAA can be added to the existing Iraqi theater to build a unique scenario. You can then script vehicle movements and actions with the editor to create a truly dynamic combat environment. There is even a random unit appearance option so that your mission can be different each time it is played. Flying a mission generated by the mission editor will not affect any of your pilot scores accumulated in the career mode.

MISSION DESIGN PHILOSOPHY

The editor is designed for single mission construction. There may be specific objectives that must be accomplished for the mission to be successfully completed. There might also be events scripted so that if they occur, it will immediately result in mission failure. You can incorporate both into the same mission.

A mission objective is not required, and a mission can be flown without it. Every entity in the game world will function as normal, the only difference will be that the mission debrief will not take into account any victory or loss conditions.

VICTORY CONDITIONS

Missions with victory conditions will have specific objectives that the pilot must accomplish in order to complete the mission. There can be up to three victory conditions set, designated as primary, secondary, and ancillary. If all three are used, then all three must be met for the mission to be considered a success.

LOSS CONDITIONS

Loss conditions are mission flags that will result in a mission failure if the mission flag condition is met. This will occur even if all of the victory conditions have been met.

STARTING THE MISSION EDITOR

The mission editor is a separate, stand-alone application that resides in your F/A-18 Operation Iraqi Freedom folder. Simply double-click the editor icon to start.

Mission Editor Layout

The mission editor screen is divided into three major subsections: Tabs, the tool bar, and the map.

TABS

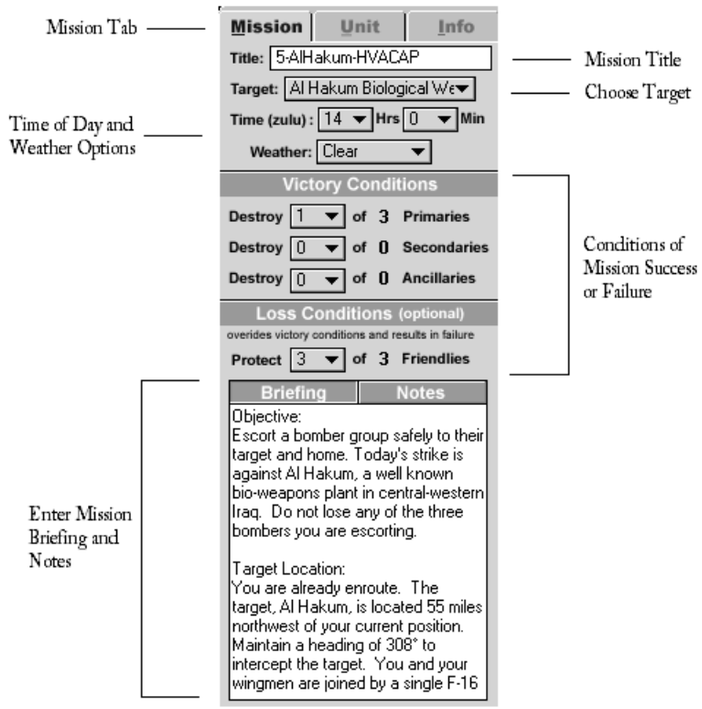
The tabs are located on the left-hand side of the mission editor screen. Select them by clicking the mouse on the tab you wish to use or by using the keyboard shortcuts provided.

The tabs are used to display information about objects on the map. An object must be selected for the tabs to display this information. The tabs also contain the victory and loss conditions.

Mission tab

The mission tab is the first tab from the left side of the screen. It is selected by clicking on the tab or by pressing the **M** key.

The mission tab contains the victory and loss conditions of the mission. It is where mission briefings and notes are added. It also contains global variables such as mission time of day and weather options. When creating a mission or editing an existing mission, this is usually the place where you should begin.



Mission information

Information about the mission is located on the top portion of the mission tab. This area allows the planner to control global mission variables, such as weather and time of day. The following mission information is contained there:

Title: The name of the mission. This title is displayed above the briefing when preparing for flight.

Target: There are seven airbases that may be used as targets in all missions created using the mission editor. In addition, the mission editor allows you to choose one optional ground target from a list of optional targets. These targets are three-dimensional models that will be placed within the Iraqi theater for your mission. If your mission does not call for a ground target, you can select “none.”

Time: You can specify the time at which the mission will start. All times are local. This will obviously affect whether the majority of the mission occurs in daylight or darkness.

Weather: There are 5 options available to control the weather within your mission. The weather options are:

Clear: Good weather with good visibility in all directions.

Haze: Reduces visibility due to high relative humidity and airborne smoke and dust particles present in the atmosphere.

Overcast: Places a solid cloud layer at altitude. Ground visibility will be slightly reduced due to increased moisture content in the atmosphere.

Fog: Significantly reduced ground visibility due to fog and mist.

Obscured: Restricted ground visibility combined with thick cloud cover. This option is extremely challenging!

Victory conditions

Victory conditions will determine what is required for successful mission completion. When an object is designated as a target using the “objective pop up” (either as a primary, secondary, or ancillary target), it will be added to the total for that target category. For example, if you have two targets designated as primary targets then the primary target number under victory conditions will total two. This applies to all categories of targets.

To set victory conditions for the targets you have created, click on the selection button adjacent to the category of target and pick a number. This number describes the total number of targets you must successfully engage to complete the mission.

Here is an example to illustrate this concept. Designate four targets as primary objectives and four targets as secondary objectives.

While designing your mission you decide that a victory will be awarded only after 50% of the primary targets and 25% of the secondary targets have been destroyed. To enter this, make the victory conditions read: Destroy 2 of 4 primaries and Destroy 1 of 4 secondary targets. So to win, a player must successfully engage 2 of the 4 primary targets and only 1 of the 4 secondary targets. The player can destroy more than this number if they desire but cannot destroy less and still qualify for a victory.

Loss conditions (optional)

The loss conditions will overrule any victory conditions. Even if the victory conditions have all been met, the loss condition will still be the ultimate deciding factor in whether the mission was a success or failure. Loss conditions can only be assigned to objects that have been listed as a friendly objective.

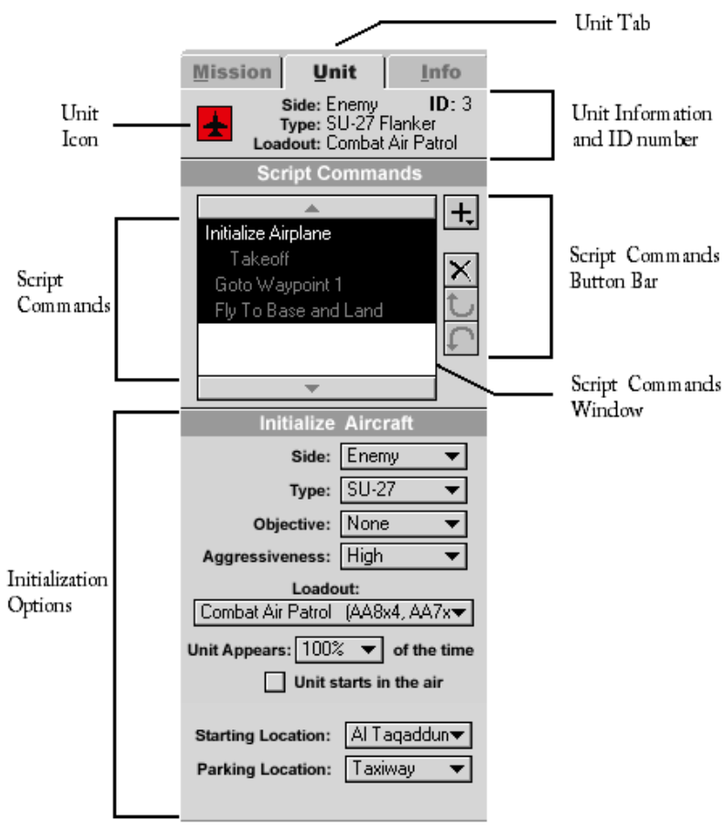
Briefing / Notes

This is a space for a text description of your mission. When playing your mission, **BRIEF** and **NOTES** will be available from the **CHOOSE MISSION** screen.

It is important to document your mission thoroughly so that others who fly it can easily understand your intentions. Make sure to include all the conditions required for victory and don't forget to mention any loss conditions. Another good practice is to give some indication of the level of enemy resistance the player can expect while flying your mission. Finally, you should always include a description of your waypoint plan, at least to include which waypoint is the target (if there is one).

UNIT TAB

The unit tab contains detailed mission information about the selected object. Information about the type of object, start location, and scripting commands are part of the unit tab. This is where the behavior of all objects within the mission world will be generated.



Unit information

At the top of the unit tab is the selected unit information area. This area contains pertinent information about the unit. It lists the alignment (friendly or enemy), equipment type, and ordnance load of the highlighted unit. The information box also has a picture of what the unit icon looks like.

In the upper right hand side of the box there is an ID number listing of the selected unit. This ID number is assigned by the mission editor and cannot be changed by the mission planner. The mission editor will keep count of every specific type of unit added to the mission and will number them sequentially as they are added.

For example: you add three MIG 21s to the mission. All three MIGs will be assigned ID numbers based on their equipment type and when they are added. So in this example there will be a MIG 21, ID 0 (first MIG added), MIG 21, ID 1 (second MIG added) and MIG 21, ID

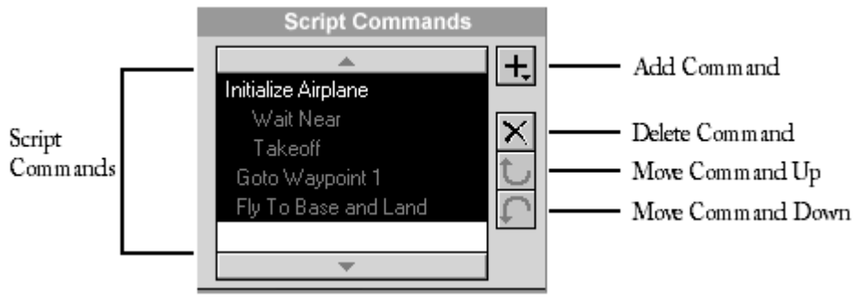
2 (last MIG added). The only exception to this rule is with the F/A-18 Hornet equipment type. Your aircraft will always be F/A-18, ID 0.

Script commands

The script commands are located just below the unit information. Here is where the behavior of all the units in your mission is controlled. There is a set of universal scripting commands that apply to all types of units. In addition to the universal commands some unit types will have added scripting commands that provide realistic behavior control.

The script commands window is comprised of the two sections: the script text window and the script commands button bar.

Script commands window



All script commands will appear in text form in the script command window. The first command is always a unit initialization command. Above and below the script commands window are window scroll bars. To scroll, just click on the direction you want the commands listing to go (up or down).

Script commands button bar

The script commands button bar is located adjacent to the script commands window. It is used to add, delete, and move through individual script commands.

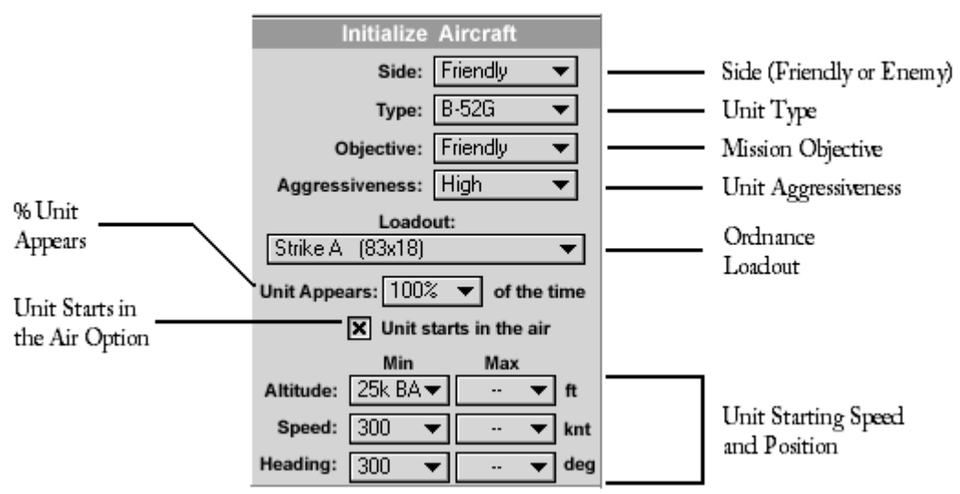
Add script command: Add a script below the highlighted script command in the script commands window.

Delete script command: Delete the highlighted script command in the script command window.

Move script command up: Move the highlighted script command up above the previous script command.

Move script command down: Move the highlighted script command down below the next script command.

Unit initialization



When a unit is added to the mission the script commands window will display a text description of the unit type. In addition to this an “Initialization (type of unit)” selector box

will appear below the script commands window. In the selector box will be all the options that control the initialization state of the selected unit. The initialization state controls the unit type, how often it will appear, objective classification, and the unit's alignment. Some unit types may have more initialization state control options to choose from. All of the different types of units available to mission planners are listed below along with their initialization options.

Initialize Aircraft

Side: Determines the aircraft's alignment, either friendly or enemy.

Type: Controls the type of aircraft the unit will be, available choices are:

Hornet 2 (primary wingman)	B-52G Stratofortress	DC-10
Hornet 3 (second wingman)	Target drone	MIG-21 Fishbed
F/A-18 Hornet	E-2C Hawkeye	MIG-23 Flogger
F-14 Tomcat	B-2 Spirit	MIG-27 Flogger D
F-16C Falcon	F-117 Nighthawk	SU-27 Flanker
A-10A Warthog	E-3A Sentry	TU-20 Bear G
	Boeing 727	

Objective: This lets you assign a mission objective classification to the aircraft. Options are:

None (the default): Not a mission objective, has no effect on mission victory conditions.

Primary: A primary mission objective, can affect mission victory conditions.

Secondary: A secondary mission objective, can affect mission victory conditions.

Ancillary: An ancillary mission objective, can affect mission victory conditions.

Friendly: A friendly mission objective, used by the mission loss conditions.

Aggressiveness: Affects how the aircraft will act during the mission. The options are:

High: Will seek out opposite alignment units to engage and destroy.

Medium: Will wait a bit longer before going out and finding opposite alignment units to engage.

Low: Will engage opposite alignment units if they accidentally find them.

None: Will wait for opposite alignment units to come and find them.

Load out

Load out: Controls what ordnance will be loaded on the aircraft unit. Note, that not all aircraft will be capable of carrying every type of weapon. The choices here are:

No load out (the default)

Guns only: If the aircraft has a gun this will be available.

Patrol: Will load aircraft type specific weapons for use during a patrol.

Anti-runway: Load weapons for anti-runway missions.

Anti-tank: Load weapons for anti- column operations

Combat Air Patrol: Chooses appropriate weapon load for A/A CAP mission.

Close Air Support: Puts appropriate A/G ordnance on the aircraft

Escort: Loads stores for use in strike package escort missions.

Ferry: Puts as much fuel on the aircraft as possible.

Intercept: Loads A/A weapons and extra fuel for longer missions.

SEAD: Loads aircraft appropriate SEAD weapons.

Strike <x>: Predetermined strike configuration. Multiple options designated by a letter are possible (i.e. Strike A, Strike B, etc…)

Unit appears: This feature lets you design a variable mission file. Depending on how you use this option, the mission you create may have an almost endless amount of replay value. In theory, you may never have the exact same mission conditions twice! The selections represent how often the aircraft has the chance to appear in your mission. 100% (the default) means that the aircraft will always be present in your mission. The 80% factor means that the aircraft has only an 80% chance of appearing in the mission. The other percentage choices will operate in the same way. Available selections are 100, 80, 60, 40, and 20 percent.

Unit starts in the air: Check this box if you want the aircraft to be airborne at the start of the mission.

Altitude, Speed and Heading: These boxes will determine what the aircraft will be doing if the "unit starts in the air" button is checked. You can make an aircraft start at a specific altitude, speed, and heading if you desire. Or you can define a range in which the aircraft will initialize.

Starting location, parking location: If the "unit starts in the air" button is not checked, then you will have to provide a starting (which airfield) and a parking location (where on the airfield) for the aircraft.

Initialize Column

Vehicle type: Will determine the type of vehicle in the column and where it is located. The first option determines the lead vehicle; the second option will be the second vehicle and so on. A minus indicates an empty spot in the convoy. The options for vehicle type are:

M1A1 Abrams	LAV	Scud launcher
Jeep	Humvee	T-72
ZSU-23	AAV7 Amtrack	

Initialize Ship

Type: This option controls the type of ship that the unit represents. The available options are:

Freighter	Gunboat	Hovercraft

Initialize Helicopter

Type: The available helicopter types are:

SH-60 Blackhawk	Mi-24 Hind	H-46 Sea Knight

Initialize SAM

Type: The choices for SAM units are presented below. Note that a maximum range ring of the specific SAM system is drawn on the map when a type is selected. If the type is changed the "threat ring" will change to reflect parameters the new SAM type.

SA-8 Gecko

SA-6 Gainful

SA-3 Goa

SA-2B Guideline

SA-2E Improved
Guideline

MIM-23 HAWK

MIM-104 Patriot

Experienced SAM crews: If this box is checked the SAM unit will have the benefit of using experienced crews. This means that the system will be harder to destroy with HARM missiles, and it will be much more successful at downing the opposite side's aircraft.

Initialize AAA

Only one type of AAA site is available, it is the 30mm cannon type. It is radar guided and extremely accurate below 5000 feet AGL.

Initialize Target

When you click on one of the static theater icons or on a mission target this box will appear. The only choice available is the mission objective option. You cannot change the side (friendly or enemy) of the permanent bases.

Building a unit's script command list

The script commands are the heart of F/A-18 OIF's mission editor. It is important to understand how to build a unit's script file. Scripts are built by selecting the Unit tab, highlighting the desired unit, highlighting in the script commands window where you want to place the next command, and finally clicking on the add script button on the script button bar. Although that describes the basic mechanics of adding a script command there is really more to it than that.

After the unit initialization command you can add additional commands for the unit to execute. The script commands are executed in order from the top of the script window to the bottom. The script commands themselves will be associated with initialization, waypoint, or land script commands (in the case of aircraft type units).

Whenever a script command is highlighted within the script commands window, the available options for that command will be visible in the script commands information box that is displayed directly below the script commands window.

To explain this process of script commands, let's go through a brief example. This example will be short, but realize that with all the script commands available you have an incredible amount of control over each unit's actions. There is a limit on the number of script commands you can attach to a unit.

The first command added is always the initialization command. It is the first in the script commands window and will be indented all the way to the left. Any commands that apply to the initialization command will be located directly below it, indented to the right. For our example we want to have a MIG-21 takeoff from Salman Pak airfield and climb up to 10,000 feet MSL and then accelerate to 400 knots.

Add an aircraft by clicking on the tool bar's "add aircraft" icon. Move the aircraft cursor into the map window and click once (location is not important at this point). This will create an aircraft unit in the mission. Click on the aircraft initialization script command for this unit and change the unit to an enemy MIG-21. To make the MIG-21 takeoff, ensure the unit tab is selected and then highlight the unit by clicking on it in the map window. This will highlight the initialization script command in the script commands window.

To start the MIG-21 on the ground at the Salman Pak airbase, make sure the "Unit starts in the air" option in the initialization box is un-checked. Change the starting location to Salman Pak by clicking on the location button and by choosing Salman Pak from the menu. Now click on the "add script command" button on the script command button bar. From the options that appear, choose "Takeoff." A Takeoff script command will be added directly below the unit initialization command. The parameters for the "takeoff" command will be displayed below the script commands box anytime the "takeoff" command is highlighted.

To set the speed to 400 knots after takeoff for our MIG-21, ensure that the takeoff command is highlighted in the script commands window. Click the "add script command" button. Choose the "Set speed" option from the list of choices. In the "Set speed" information box displayed below the script commands window choose "New speed: (minimum) 400 knots."

A unit's script command list can be quite complicated. As waypoint commands are added they will be indented to fall to the right of the initialization command and the left of any other script commands. Remember that script commands are always executed in order from top to bottom.

The 5 basic script commands

Not every type of unit supports all of the script commands that are available to aircraft type units. There are 5 basic script commands available for use with all units. The Ship, SAM, AAA, and Target type units will only have these 5 commands available for use. These 5 commands are described below:

Explode: The "explode" command will tell the unit to explode with the destructive force equal to the selected explosion size when it is executed.

Timer: The timer command provides a method of telling a unit to pause for a specified amount of time before executing the next command.

Mission successful: This command will return a mission successful command when it is executed. It is overruled by any mission failure commands that are returned during the course of the mission (assuming there were any set).

Mission failed: This command will cause the mission to be classified as a failure, despite the number of mission successful commands returned.

Wait near: This command will cause the unit to wait for another unit to approach it (within the specified distance) before executing the next command.

Unit type unique script commands

Each unit will have some script commands unique to its type to allow for realistic behavior within the mission. A brief listing of those commands is provided here. Note that when a script command is selected there will be a brief text description of the command found within the script command's information box (located below the script commands window).

Aircraft and helicopters

In addition to the 5 universal commands, aircraft and helicopter type units can have the following script commands available for use. Commands with do not apply to the specific aircraft type will be "grayed" out.

Land: Instructs unit to land.

Set altitude: Changes / sets the units altitude.

Set speed: Changes / sets the units airspeed.

Set heading: Specifies a new heading for the unit.

Set aggressiveness: Changes a unit's aggressiveness. (Not available for helicopter units)

Start targeting vehicles: Tells unit to engage ground vehicles. (Not available for helicopter units)

Stop targeting vehicles: Tells the unit to stop attacking ground vehicles. (Not available for helicopter units)

Start targeting AA: Instructs unit to target enemy AAA and SAMs. (Not available for helicopter units)

Stop targeting AA: Tells unit to stop targeting AAA and SAMs. (Not available for helicopter units)

Column

The following command is unique to vehicle columns:

Shell waypoint: Instructs unit to conduct a ground attack on the next waypoint. Note that vehicle columns are limited to only 2 waypoints – the starting initialization point and an end point.

Info tab

The "Info" or "information" tab is the last tab available. It is selected by clicking on the Info tab or by pressing **I**. The tab displays specific unit type information and specifications of the currently selected unit. Units are selected by clicking on them in the map window with the pointer tool active, or by selecting from the list available presented by pressing the "Unit:" button at the top of the info tab.

Information

The information section of the Info tab displays the alignment of the highlighted unit, the type of unit it is, and the load out of the unit. There is also a picture of the unit icon.

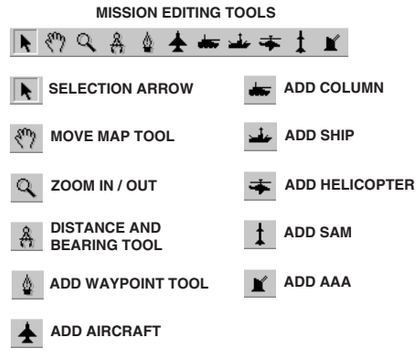
Specifications

The Specifications display shows information about the unit and its capabilities. It also includes a picture graphic of the unit. Target specifications will include a target picture with target buildings annotated on it along with a "North" arrow.

Tool Bar

Along the top of the mission editor screen is the tool bar. This is where the mission editing tools are selected for use on the map. Also located on the tool bar are New Mission, Load Mission, Save Mission and Exit Mission buttons. Clicking on a tool icon will select it for use, and when the cursor is moved into the map area of the screen it will change to the tool type as a reminder. The default tool is the selection arrow.

MISSION EDITING TOOLS



The actual editing tools are located on the left side of the tool bar. The following tools are available starting from left to right.

Selection arrow: Used for selecting and dragging units on the map. This is the default tool selected at start up, also selected by pressing **1**.

Move map tool: Changes tool to a hand when the cursor is within the map area. Used to move the map by clicking and holding the primary mouse button and then moving the mouse. Also selected by pressing **2**.

Zoom in / out: Changes the cursor to a magnifying glass and when clicked on in the map area will increase or decrease magnification and re-center the map on the clicked location. Increase zoom is indicated by a **+** (**plus**) in the magnifying glass and decrease is indicated by a **-** (**minus**) in the magnifying glass. You can also select the zoom tool by pressing **3**. This will bring up the increase zoom tool. Holding down the **Alt** key with the zoom tool active can access the decrease zoom tool. The **+** (**plus**) and **-** (**minus**) keys can also be used to zoom in and out.

Distance and bearing tool: Changes to a compass and is used to measure bearing and distance on the map. To use the tool, first select it by clicking the icon or by pressing **4**. Then click and hold the primary mouse button and drag the bearing and distance line across the area of interest. Release the mouse button when you are through to reset the tool.

Add waypoint tool: This tool changes the icon to a pen tip icon. It is used to add waypoints to the highlighted units script command window. Each press of the primary mouse button will add another waypoint, in sequence, to the current unit's waypoint plan. The tool as also selected by pressing **5**. This tool will be disabled if a unit is not selected, or if the selected unit cannot have any more waypoints.

To display all the current waypoint plans of all the units on the map screen press **F**. The waypoint plans can be removed from the screen by pressing **F** again.

Adding a waypoint between two existing waypoints

To add a waypoint in between two existing waypoints, first change to the selection arrow tool (or cycle to the highlighted unit's waypoint by pressing **W**) and select the desired previous waypoint. When it is selected the waypoint will have a circle around it. Then change back to the add waypoint tool and position the cursor in the location of the new waypoint. Click on the map area with the primary mouse button to add new waypoints after the highlighted waypoint.

Dragging waypoints

You can drag waypoints to new locations by using the selection arrow tool. To do this, first highlight the desired waypoint you want to move. Press and hold the primary mouse button when it is on the selected waypoint to move the highlighted waypoint to its new location. When the waypoint is in its desired location, release the primary mouse button.

With a waypoint selected, the arrow keys (up, down, left, right) will also function to move the waypoint.

Deleting waypoints

The last added waypoint (highlighted) can be quickly removed by pressing **Delete** if desired.

Add aircraft: This tool adds aircraft units to the map when the primary mouse button is pressed. Each click adds one unit to the mission. This tool is also selected by pressing **6**. The highlighted aircraft unit can be deleted by pressing **Delete**.

Add column: This tool adds a vehicle column to the map when the primary mouse button is pressed. One per click. This tool can also be selected by pressing **7**. The highlighted column unit can be deleted by pressing **Delete**.

Add ship: This tool adds a ship at the cursors location when the primary mouse button is pressed. One per click. This tool is also selected by pressing **8**. The highlighted ship unit can be deleted by pressing **Delete**.

Add helicopter: Adds a helicopter unit to the map at the cursors location. One per click. The highlighted helicopter unit can be deleted by pressing **Delete**.

Add SAM: Adds a SAM system to the mission, one per click. This tool is also selected by pressing **9**. The highlighted SAM unit can be deleted by pressing **Delete**.

Add AAA: Adds an AAA system to the mission, one per click. Can also be selected by pressing **0 (zero)**. The highlighted AAA unit can be deleted by pressing **Delete**.

FILE COMMANDS

The file commands are used to create, load and save missions, and to exit the editor.

New

Clears the current mission and loads the basic Iraqi theater mission information, along with your F/A-18 Hornet.

Load

Allows the mission planner to open pre-existing mission files. All F/A-18 OIF mission files must have an ".msn" file extension to be recognized by the mission editor as a valid mission file.

Save

This saves the current mission. All mission editor mission files are saved with the ".msn" file extension.

Exit

Clicking this button will exit the mission editor. The mission editor will return you to the part of the interface you invoked the mission editor from.

Editor Map

The map occupies the largest portion of the screen. It provides a top down view of the Iraqi theater. The map's scale can be adjusted so that precise positioning of aircraft, vehicles and waypoints can be accomplished.

PERMANENT FEATURES

All F/A-18 OIF missions will have the following units on the map. The location and alignment (friendly or enemy) of the airbases will never change. The aircraft carrier can be relocated if desired. Your Hornet can be moved anywhere on the map.

There are a total of seven airbases, five enemy bases and two friendly bases, and (also) one aircraft carrier (friendly) within the Iraqi theater.

COLORS

The unit's color on the map indicates its alignment, either friendly or enemy. Friendly units are blue, and enemy units are red.

Waypoints are drawn in black on the map with the highlighted waypoint sequences drawn in a heavier black line. To show all waypoint sequences from all units, press **F**. To hide or de-clutter the map's display of the waypoint sequences, press **F** again.

SAM and AAA engagement rings are drawn in the same color as the unit's alignment, red for enemy and blue for friendly. Note that AAA envelopes are much smaller than SAM envelopes and they might be hidden from view, underneath the AAA icon, at larger map scales.

SCALE

The scale of the map is changed by using the zoom in/out tool from the tool bar or by pressing **+** to zoom in (increase magnification) and **–** (**minus**) to zoom out (decrease magnification). The current map magnification is displayed in the lower left-hand side of the map display. On the lower right-hand side of the display is a scale bar giving an applicable range scale. Range on the scale is shown in statute miles (NOT nautical miles).

RE-CENTERING THE MAP

To center the map display or the currently selected unit or waypoint, press the **C**.

Editor Keyboard Reference

THE TABS

M selects the Mission tab

U selects the Unit tab

I selects the Information tab

THE TOOL BAR

1 selects the arrow selection tool

2 selects the move map tool

3 selects the map zoom in / out tool

4 selects the distance / bearing tool

5 selects the add waypoint tool

6 selects the add aircraft tool

7 selects the add column tool

8 selects the add ship tool

9 selects the add SAM tool

0 selects the add AAA tool

MAP SCREEN

W selects next waypoint on selected unit's route (**Shift W** selects previous waypoint)

F hides / shows (toggle) all units waypoints and flight paths / routes

+ or **-** increase/decrease MAP magnification factor

Delete deletes selected item (unit, waypoint, or script command)

C center MAP on selected unit

ARROW KEYS

Nothing selected

UP ARROW moves MAP North

DOWN ARROW moves MAP South

LEFT ARROW moves MAP West

RIGHT ARROW moves MAP East

With a Unit selected

UP ARROW moves selected unit North

DOWN ARROW moves selected unit South

LEFT ARROW moves selected unit West

RIGHT ARROW moves selected unit East

With a route waypoint selected

UP ARROW moves selected waypoint North

DOWN ARROW moves selected waypoint South

LEFT ARROW moves selected waypoint West

RIGHT ARROW moves selected waypoint East