

TOP GUN[®]



HORNET'S NEST[™]



PILOT HANDBOOK



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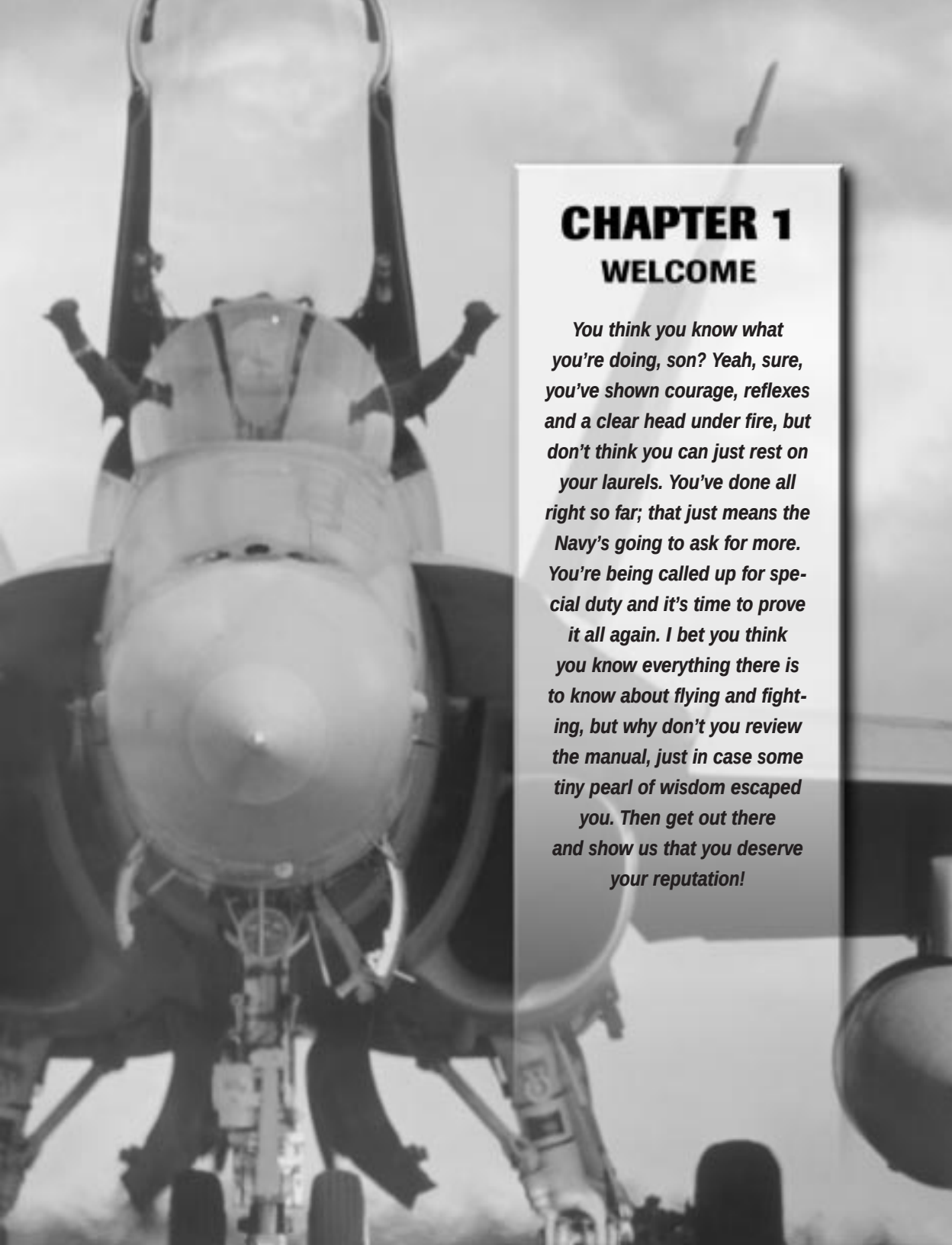
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TABLE OF CONTENTS

Chapter 1: Welcome	1
Introduction	2
How to Use This Book	2
System Requirements	3
Installation	3
Starting the Game	3
Chapter 2: Quick Start	5
Are You Ready?	6
Up in the Air	7
Check Out the Cockpit	9
Keep an Eye on the Radar	11
Shoot Them Out of the Sky	12
It's Over	12
Chapter 3: Configuring Your System	13
Configuring Joysticks and Other Game Controllers	14
Configuring Game Difficulty	15
Configuring Audio and Video Options	17
Configuring Your Controls	18
Chapter 4: Instant Action	19
Setting Up an Instant Action Game	20
Playing an Instant Action Game	22
Ending an Instant Action Game	22
Chapter 5: Campaign Play	23
Starting a Campaign	24
Mission Briefings	25
Loading Ordnance	26
Accomplishing Your Mission	27
Destroying the Opposition	29
Mid-Mission Landing	31
Mission Debriefings	32
Completing the Campaign	32

Chapter 6: Multiplayer Missions	33
Establishing a Connection	34
Starting a Multiplayer Mission	35
Playing a Multiplayer Mission	38
Ending a Multiplayer Mission	40
Chapter 7: The Cockpit	41
Changing Views	42
Understanding the Head-Up Display (HUD)	45
Reading the Instrument Lights	48
Watching the Monitor Screen	49
Viewing the Multi-Function Displays	50
Using the Radar	53
Chapter 8: Flying	55
Flying Basics	56
Takeoff and Landing	59
Theory of Flight	61
About the F/A-18 Hornet	65
Chapter 9: Combat	67
Air-to-Air Combat	68
Air-to-Ground Combat	71
Fighting with a Wingman	72
F/A-18 Hornet Weaponry	73
Possible Enemy Targets	77
Other Forces	79
Chapter 10: Campaign Details	81
Campaign 1: Siberia	82
Campaign 2: Iraq	83
Campaign 3: Colombia	84
Chapter 11: Reference	85
Glossary	86
Credits	88
Technical Assistance	90



CHAPTER 1

WELCOME

You think you know what you're doing, son? Yeah, sure, you've shown courage, reflexes and a clear head under fire, but don't think you can just rest on your laurels. You've done all right so far; that just means the Navy's going to ask for more. You're being called up for special duty and it's time to prove it all again. I bet you think you know everything there is to know about flying and fighting, but why don't you review the manual, just in case some tiny pearl of wisdom escaped you. Then get out there and show us that you deserve your reputation!



Introduction

Top Gun®: Hornet's Nest™ is an air combat game in which you pilot an F/A-18 Hornet, one of the fastest, lightest, most maneuverable and most versatile fighter jets in active service today. Its large arsenal of air-to-air and air-to-ground weaponry, along with an advanced radar system, make it highly effective at long-range and close-quarters dogfighting, as well as able to pound ground targets into oblivion.

You are Maverick, a hotshot F/A-18 pilot with a name for recklessness. You've been asked to join an elite jet squadron, despite the lingering doubts of your commanding officer, and it's up to you to justify the decision to have you on the team. You're going to test your mettle in a series of missions that follow a unique story line, throwing you full into the fury of fighter jet combat. Are you ready for the challenge? Then fire up the jets and do the Navy proud!

The Hornet's Nest Special Task Force

Through a joint agreement of the DOD, the CIA, the OSI and the Department of the Navy, a task force has been formed to handle "hot" global situations. The Marines are to provide ground forces when needed, and the Navy has committed the carrier U.S.S. Nimitz, various support craft and a squadron of its top fighter pilots, flying specially modified F/A-18 Hornets. This force, code-named "Hornet's Nest," is composed of the best the Navy has to offer; they are to be called in before any "officially sanctioned" response.

How to Use This Book

Naturally we think every part of this manual is important, but for those people who want to read the minimum amount of instruction before getting in the air, we recommend that you at least skim through *Chapter 2: Quick Start*. This section gives you the basics of flying, what's in the cockpit of your F/A-18 and how to bring down the enemy. If you have prior experience with flight simulators, you can just review *Chapter 7: The Cockpit*, to check out the instruments particular to your Hornet. If you are new to flight sims, begin with *Chapter 3: Configuring Your System* and proceed to *Chapter 4: Instant Action* to start playing a game. The chapters on *The Cockpit*, *Flight* and *Combat* should give you plenty of practical information about your plane and how to operate it, as well as the physics of flight and dogfighting.

When you feel comfortable in the air, go to *Chapter 5: Campaign Play*, and for specific information about the campaigns, check out *Chapter 10: Campaign Details*. Finally, if you intend to fly against live opponents, read *Chapter 6: Multiplayer Missions*. This provides information on creating and joining a multiplayer game using a variety of connections.

Advice from Lieutenant Lodge

Lieutenant Lodge is your Mission Controller. In addition to giving you mission directives, warnings and other help during the game, she can also be found throughout the manual dispensing words of wisdom. Keep your eye out for Lieutenant Lodge; she'll always have something to say that you can't learn anywhere else.

System Requirements

In order to play *Top Gun: Hornet's Nest*, you need the following minimum system specifications:

- ◆ Windows® 95/98
- ◆ Pentium **166MHz** IBM PC or compatible (200MHz recommended)
- ◆ DirectX 6 (included)
- ◆ **32MB** of RAM (64MB recommended)
- ◆ **205MB** of **uncompressed** hard drive space free, plus **50MB** free for swap file (300MB plus a 100MB swap file recommended)
- ◆ A **4X** CD-ROM drive (8X recommended)
- ◆ High Color graphics for 640 x 480 x 16-bit color (3-D graphics accelerator recommended; *Direct3D*, *3Dfx Voodoo* and *NEC PowerVR* supported)
- ◆ DirectX-compatible sound card
- ◆ Joystick recommended
- ◆ 56.6kbps Windows-compatible modem required for 2-player modem games
- ◆ Local area network with IPX or TCP/IP protocol required for 2–8 player LAN games
- ◆ 56.6kbps true TCP/IP connection to the Internet required for 2–8 player Internet games

Installation

You must install *Top Gun: Hornet's Nest* game files to your hard drive and start with the *Top Gun: Hornet's Nest* CD in your CD-ROM drive to load this game.

To install the game, insert the *Top Gun: Hornet's Nest* disc into the CD-ROM drive. When the pop-up window appears, left-click on the **Install** option. If you have disabled the Windows AutoPlay, or if it does not function, explore the CD-ROM and double-click on the **Setup** icon. Follow all onscreen prompts to complete the installation.

Starting the Game

Insert the *Top Gun: Hornet's Nest* disc into your CD-ROM drive and select **Play** from the pop-up window. If you have disabled the Windows AutoPlay feature, or if it does not function, open the **Microprose/Top Gun: Hornet's Nest** program folder from your Windows Start Menu and left-click on the **Run Top Gun: Hornet's Nest** icon. For complete and specific “how to play” information, please refer to the rest of the manual. If you encounter difficulties during installation or running the game, see the *Troubleshooting* section of the README.TXT file in your game directory for more information.

After you start the game, an introductory movie plays; to bypass this, press any key. This brings up the *Top Gun: Hornet's Nest* main menu. This is your starting point, and you return to this screen before you leave the game. The main menu contains five options, described on the following page.



Single Player

This option brings up the Start Game screen, from which you can start a new campaign or load a previously saved mission. You must successfully complete each mission before you can continue to the next. See *Chapter 5: Campaign Play* and *Chapter 10: Campaign Details*, starting on pages 23 and 81 respectively, for more information about campaign games. You can also begin an Instant Action game from the Start Game screen. Instant Action allows you to hone your skills, such as dogfighting, carrier landings and bombing runs, across all three theaters of operation. This is great if you just want to jump in your bird and fly. See *Chapter 4: Instant Action*, beginning on page 19, for details.

Multiplayer

This brings up the Multiplayer Setup screen, from which you can join or create a multiplayer game over LAN, modem or the Internet. See *Chapter 6: Multiplayer Missions*, starting on page 33, for details.

Configure

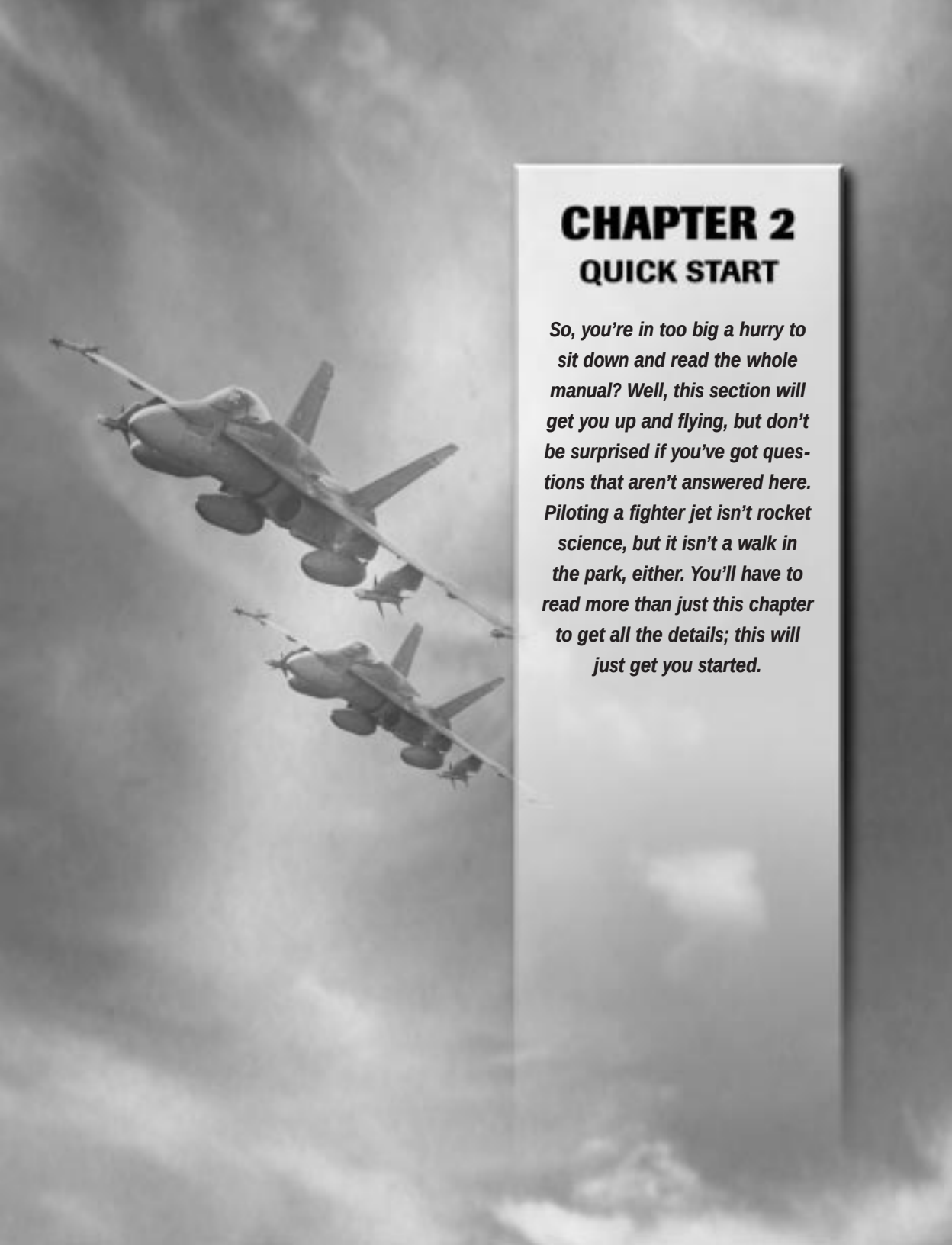
In the Configure area, you can set various game options to raise or lower difficulty. You can also reassign your control settings, as well as configure your graphics and sound options. You'll find more information in *Chapter 3: Configuring Your Game*, beginning on page 13.

Credits

The Credits screen gives a scrolling list of the persons responsible for bringing you *Top Gun: Hornet's Nest*. To exit the Credits screen, click on the **Back** button to return to the main menu.

Quit

This exits *Top Gun: Hornet's Nest* and returns you to your Windows desktop.

A black and white photograph of two F-16 fighter jets flying in formation against a cloudy sky. The jets are angled upwards and to the left, with the lead jet in the foreground and the second jet slightly behind and below it. Both jets have their wings extended, showing various missiles and pods mounted under them. The sky is filled with soft, textured clouds.

CHAPTER 2

QUICK START

So, you're in too big a hurry to sit down and read the whole manual? Well, this section will get you up and flying, but don't be surprised if you've got questions that aren't answered here. Piloting a fighter jet isn't rocket science, but it isn't a walk in the park, either. You'll have to read more than just this chapter to get all the details; this will just get you started.



Are You Ready?

Checking Joystick Configuration

Before you begin, if you are going to use a joystick to play *Top Gun: Hornet's Nest*, make sure that it is configured for Windows. To check if your controller is configured, open up the Control Panel and select either the **Joystick** or **Game Controllers** icon. If your device is listed under **Controllers** it should work in *Top Gun: Hornet's Nest*. If it isn't on the list, see *Configuring Joysticks and Other Game Controllers*, starting on page 14, for information on setting up your game controllers to work with *Top Gun: Hornet's Nest*.

Setting Up an Instant Action Game

With your joystick working properly, you're ready to start. We're going to get you right into battle. Load the game and select **Single Player** from the main menu. Click on **Instant Action** at the bottom of the screen. Instant Action games let you configure the system to give yourself exactly the challenge you want. Right now we're going to make it as easy as possible. Click on **Siberia** to select that area as the theater of operations for your game. Then select **Player Options**. Set the four options in this panel as follows, by clicking on the button next to the option until the desired choice appears:

Ordnance: Unlimited

Fuel: Unlimited

Time: Unlimited

Wingman: No

Next click on **Enemy Options** and set those options to the following choices:

Type: Varied

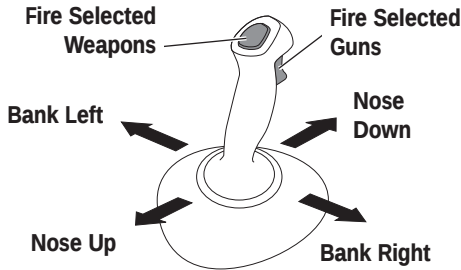
Quantity: Fun

Ground Targets: None

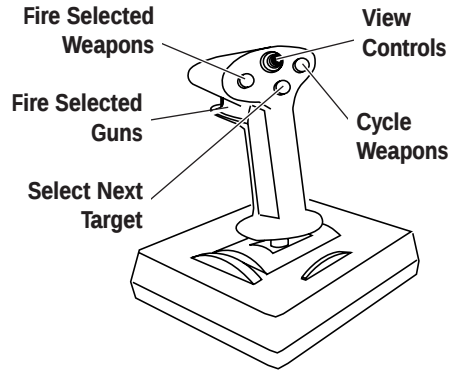
Skill: Flyboy

This should give you a relatively easy game, in which enemy aircraft are all that you have to worry about. Click on **Fight** to begin the Instant Action game.

Up in the Air



Standard 2 Button Joystick



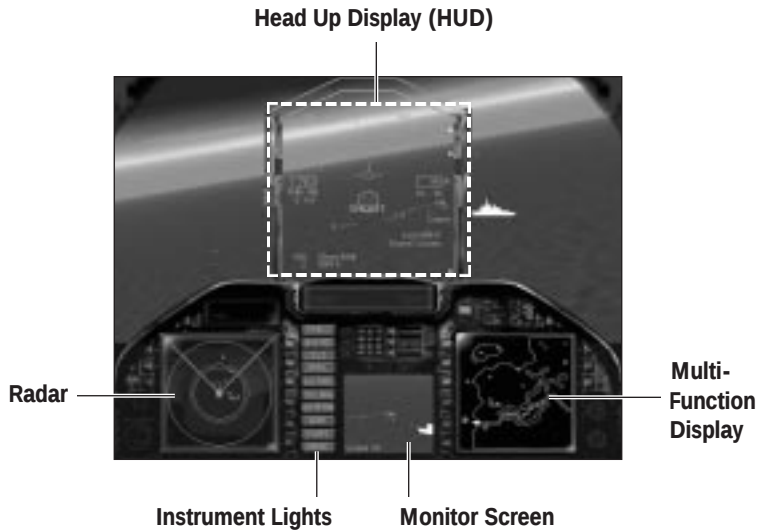
CH Flightstick Pro

Your joystick is your flight control. Pushing the joystick forward moves your aircraft's nose down. Pulling back on the stick moves it up. To make an effective turn, push the joystick to the left or right while slightly pulling back on the stick. You can also use the keyboard to control your jet. The  and  keys function just like moving your joystick backward and forward, and the  and  keys tilt the plane to either side. Press the  or  keys to bank the plane, then press and hold the  key to execute the turn.



ADVICE FROM LIEUTENANT LODGE:

Maverick, the tightest sharpest turns are not always the best turns, because they bleed off so much speed. On the other hand, if you've just flown past a target you were supposed to destroy, making a quick turn around may be just what you need. It puts you at a slower speed for a second pass of the target.



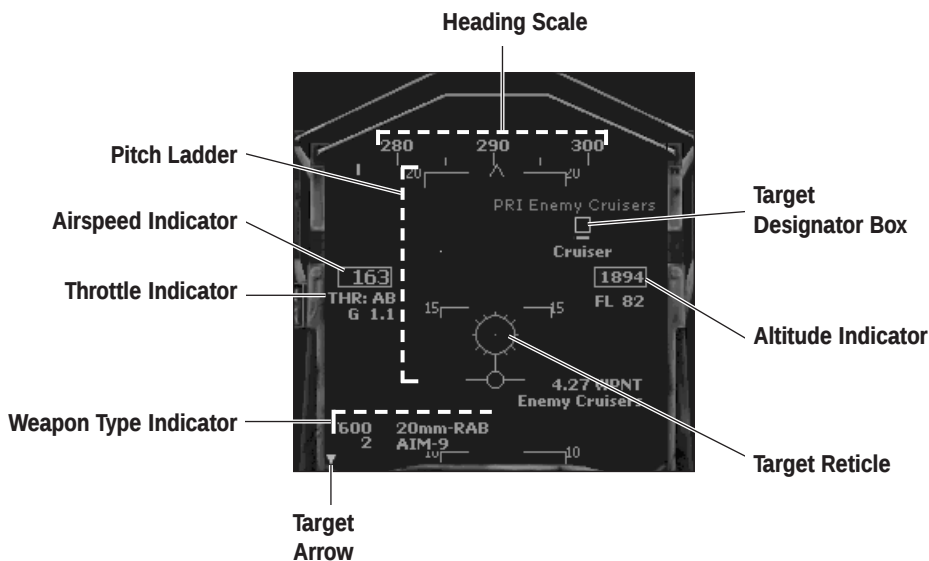
The readout in the upper center of the screen is called the Head-Up Display (HUD). On the left side of the HUD, you'll see a box with a number in it. This is your current speed. Below that is **THR**: followed by a number. This is your current throttle setting. The number keys **1** through **6** control your throttle, which determines your speed. The higher your throttle percentage, the faster you go, with **6** being 100%. You can push **A** to fire up the afterburners, which boosts your jet to even higher speeds, but consumes considerably more fuel.

Check Out the Cockpit

You start out in the Cockpit view of your F/A-18. There are a bunch of lights and displays here, but we're only going to worry about a couple of them.

Head-Up Display

The HUD is the large readout in the upper center of your cockpit. It shows all the important information you need for combat.



The box on the left is your current airspeed in knots (nautical miles per hour), and the box on the right is your altitude in feet. The display on the bottom indicates the type of weapon you're using, with cannon ammunition on top and missile type on the bottom. The number next to a name (20MM is for your guns, whereas AIM-9, DART, etc. are different types of air-to-air missiles) shows how many of that weapon or ammunition you have remaining.



The series of lines in the middle of the HUD is the pitch ladder, showing the climb or dive angle of your aircraft (positive numbers equal climbing, negative numbers mean you're diving).

If the **ENEMY HAS LOCK** message appears on the HUD, this means an enemy jet or ground unit is probably firing missiles at you.

Avoiding Missiles

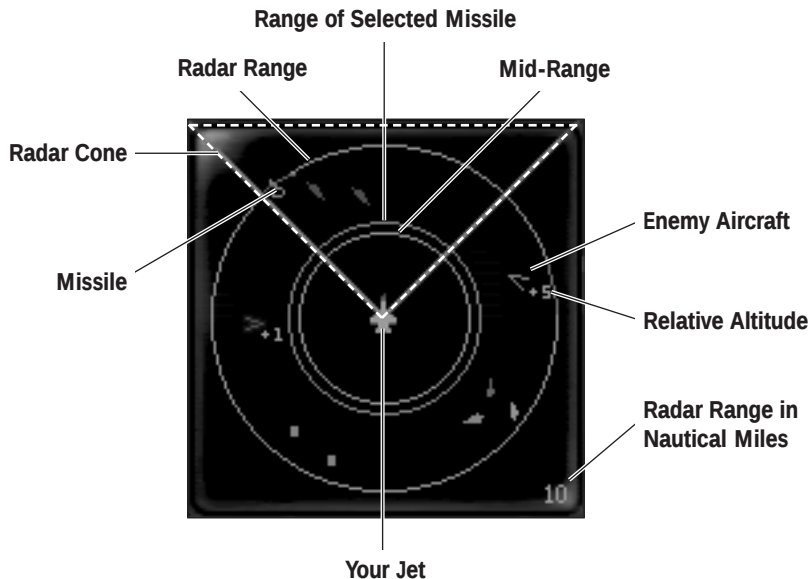
To avoid these missiles, turn quickly from side to side, climb or dive, and dump countermeasures, both flare and chaff, with the **Page Down** key. You can also "jink" to avoid an enemy missile by making hard, last-minute, extreme maneuvers.



ADVICE FROM LIEUTENANT LODGE:

If multiple enemies enter your radar almost simultaneously, don't get rattled, Maverick. Just cycle through your targets and give each of them something to worry about. Press **Ctrl** to fire at the first one you get a lock on, then press **Z** to change missile lock to the second target. Press **Ctrl** again to fire at the second bogey, etc.

Keep an Eye on the Radar



On the left side of your cockpit is the radar, a 360° top-down representation of the area with your F/A-18 in the middle facing up. The number in the lower right-hand corner is the radar's range in nautical miles. Cycle through the three radar ranges by pressing the **[R]** key repeatedly.

Aircraft in the top half of the circle are in front of you, while aircraft in the bottom half are behind you. Enemies appear on the radar in red; friendlies are blue. When an enemy in front of you comes within the red ring displayed on your radar, it can be selected as a target. This red ring represents the lock-on range of the currently selected missile. Enemy aircraft appear as red arrows pointing in their direction of travel. Press **[Z]** to cycle through the enemies within lock-on range; your current enemy begins flashing. The number just to the aircraft's right shows the altitude above or below you in thousands of feet. For example, "-3" means that the current aircraft is 3,000 feet below your Hornet.

If you have missiles selected, when they lock onto your selected target, the **SHOOT** message appears on your HUD. Fire a missile now. On your radar, your missiles appear as small blue boxes with tails, while enemy missiles fired at you show up as small red boxes with tails.



Shoot Them Out of the Sky

Your Hornet has two basic weapons: guns (cannons) and missiles. On a typical four-button joystick, **Button 1** fires the guns, **Button 2** launches missiles, **Button 3** selects the next available target and **Button 4** switches through your various missile types. If you are using the keyboard, the **[Spacebar]** fires your guns, the **[Ctrl]** key launches your missiles, the **[Z]** key selects the next target and the **[X]** key cycles through your weapons choices.

Your missile system is simple. When you select a target, try to stay behind it, using your radar to help you, until your weapons system locks on. When the **SHOOT** message appears, you can launch your missiles. Guns aren't much more complicated. Fly as close to the target as possible, line up the enemy in your target reticle and fire the guns. You might want to aim a little in front of the target if your enemy is moving fast.



ADVICE FROM LIEUTENANT LODGE:

Maverick, try not to become disoriented during combat. Keep an eye on the Campaign Map (the **[T]** key brings it up), and find your location relative to the enemy and your objectives. When you're flying over an area without many landmarks, use the Heading Scale to keep your bearing, especially when turning.

It's Over

If you've been shot down or you crash your aircraft, you'll arrive at the Debriefing Screen. Select **Restart Action** to give it another try. Exit Instant Action by clicking on **Main Menu**.

That's about all there is to it! If you're up for a greater challenge, you can choose different options when you set up your Instant Action game. You can also jump in and start a campaign by pressing **Start** at the Single Player screen, instead of **Instant Action**. Good hunting!



CHAPTER 3

CONFIGURING YOUR SYSTEM

Before you even think of putting that bird in the air, you need to check your guidance systems. If your flight controls aren't functioning properly, the only thing you're going to take out is yourself. Not to mention how much trouble you're going to have if your visuals and sound aren't working right. You need to see those warning lights and hear the calls of your wingmen, or it's going to be a really short battle. If you want a taste of what it's like to fly with unlimited fuel or fire with unlimited weapons, this is the place to make it happen.



Configuring Joysticks and Other Game Controllers

Joysticks, rudder pedals and other game control devices can be used in *Top Gun: Hornet's Nest* if they are properly configured for Windows. To check if your controller is configured, open up the Control Panel and select either the **Joystick** or **Game Controllers** icon. If your device is listed under **Controllers**, it should work in *Top Gun: Hornet's Nest*. If your game controller does not appear on this list, you can attempt to configure it for Windows by following these instructions:

1. Connect your game controller to the game port.
2. From your Windows Start menu, open up the **Control Panel** and select the **Joystick** or **Game Controllers** icon.
4. Click on the **Add** button.
5. Select the style and manufacturer of your joystick or game controller if present.
6. If your controller is not on the list, press the **Add Other** button and search the list for your model. If your model came with driver/configuration software, insert the disk and click on the **Have Disk** button.
7. When Windows returns you to the Controller screen, highlight your joystick and press the **Properties** button to calibrate it. Follow the onscreen directions to establish proper configuration of the X and Y-axes and any special controls.

If you can't configure your joystick properly in Windows, you need to contact the manufacturer of your controller for further technical support. The controller will not function correctly in *Top Gun: Hornet's Nest* if it is not first properly configured in Windows.



ADVICE FROM LIEUTENANT LODGE:

Maverick, if you are on a timed mission and you set yourself to limited ammo, be conservative with your firepower and make sure you are able to complete your objectives. You won't have time to land and take on more missiles if you run out.

Configuring Game Difficulty



You can change various game settings to increase or decrease the difficulty of play in *Top Gun: Hornet's Nest* from the Configure screen. You reach this screen from the main menu; click on **Configure**. A menu appears with several game settings, which are described below. Located at the bottom of the screen is the **Audio/Video** button, which brings up the Audio/Video screen. From there you can change various sound and graphics options. Detailed information can be found in the *Configuring Audio and Video Options* section starting on page 17. Select **Controls** to bring up the Hornet Controls screen. For information about reassigning keyboard and joystick commands, see *Configuring Your Controls* on page 18. Click on **Reset** to cancel any changes you make and restore the default settings for these options. Select **Back** to save your changes and return to the main menu. Your configuration remains the same until you change it, even if you exit and restart *Top Gun: Hornet's Nest*.

Game Settings

You can also change these settings during a campaign mission by pressing the [P] or [Esc] key to bring up the In-Flight Menu, then selecting **Configure**.

Skill

This determines the skill level of enemy pilots. If the enemy's skill level is **Flyboy**, the game should be easier to play; if their skill level is **Ace**, hold onto your throttle—life is going to get difficult! The default for this setting is **Captain** (medium). Changing skill level also increases or decreases the armor rating of your aircraft. This option can be changed during a mission, but the change does not go into effect unless the mission is restarted or a new mission begins.



Speed

This toggles the speed of your F/A-18. When this is set to **Fast**, almost all of your jet's attributes are increased 15% to 30%, including acceleration, top speed, roll and pitch rates, making the game much easier as you blow by enemy jets. The default for this setting is **Normal**.

Ordnance

Under normal circumstances, you have only a limited supply of cannon ammunition, missiles, bombs and countermeasures. If you run out, you have to find somewhere to resupply or do without. With **Unlimited** Ordnance, the game becomes much easier. You have all the ammo you need, now you just have to hit them! The default for this setting is **Normal**.

Fuel

Under normal circumstances, you might have missions during which you run low on fuel, forcing you to find a friendly airfield or carrier or risk running out of juice. Having **Unlimited** Fuel means that you never need to land to refuel, making the game easier. The default for this setting is **Normal**.

Blackouts/Redouts

When this setting is **Off**, you are allowed to fly without suffering the effects of blackouts and redouts due to loading too many Gs. For a challenge, turn this setting **On** and try flying with these parameters. See the *G Forces* section, starting on page 63, for descriptions of blackouts and redouts. The default for this setting is **On**.

Chaff/Flares

This option toggles between automatically deploying appropriate countermeasures when a missile locks onto your plane and requiring you to do this manually. Since improperly utilizing countermeasures can have lethal results, setting Chaff/Flares to **Auto** makes the game easier and gives you one less thing to worry about in a firefight. However, since the quantities of chaff and flares are limited, personally controlling the release of countermeasures allows you to save them for areas heavy with enemy aircraft. For information on the proper use of *Countermeasures*, see the section starting on page 58. The default for this setting is **Manual**.

Gear

This setting toggles between automatically retracting your landing gear after takeoff and forcing you to deal with this detail yourself. Forgetting to retract the landing gear will result in an alarm, and any distraction can be costly and even fatal during combat. Setting Gear to **Auto** helps you focus on fighting. The default for this setting is **Manual**.

Default View

This switches the perspective from which you normally play the game between an outside **Chase** view and inside the cockpit. You can still manually toggle between views by pressing the **[F8]** key. The default for this setting is **Cockpit**.

Configuring Audio and Video Options

You can set various graphics and sound controls for *Top Gun: Hornet's Nest* from the Audio/Video screen. You reach this menu from the Configure screen. Click on **Configure** from the main menu, then on **Audio/Video**. This brings up a menu with the options described below. Click on **Reset** at the bottom of the screen to cancel any changes you make and restore the default settings for these options. Click on **Back** to save your changes and return to the Configure screen.

Resolution

The Resolution option toggles the overall graphics mode between **320x240** (Lowest), **640x480**, **800x600** and **1024x768** (Highest). Graphics resolution greatly affects game speed in the simulation, with the higher resolutions running slower than the lower resolutions. If you modify this variable, you might need to exit *Top Gun: Hornet's Nest* and restart the game for the change to take effect. The default Resolution setting is **640x480**.

Volume

The two options under Volume change the sound level of CD music, special effects, movies and voice in the game. Left-click on a slider button and move the mouse while holding the mouse button down to change the volume of an option. Dragging the slider to the left decreases the volume, dragging it to the right increases the volume.

In-Game Music

After you have started the game, you have the option of placing a non-game music CD into the CD-ROM drive and listening to your own music instead of the *Top Gun: Hornet's Nest* soundtrack. However, you might be prompted to insert the game CD-ROM from time to time during play. This option changes the volume level of the music played when you are flying your aircraft. It also toggles the In-Game Music selection. When this option is **On**, the game searches for and plays certain tracks on the CD at various times throughout the game. This is the default. If you wish your music CDs to play continuously, choose **Off**.

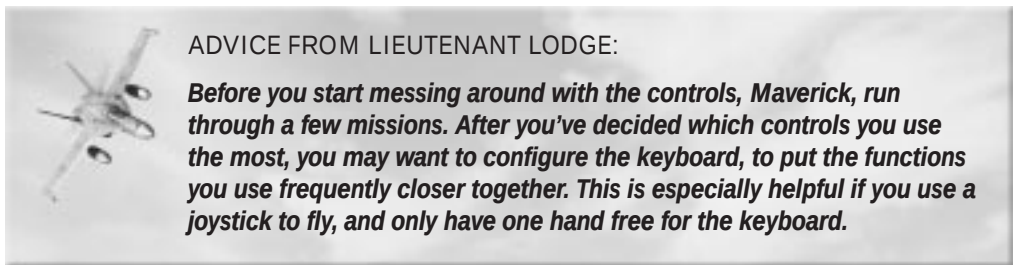
SFX

This adjusts the volume level of explosions, missile launches and other special effects while you are in your plane, as well as movies and voices while you're in the air. It's important to note that your mission controller, Lieutenant Lodge, and your wingmen provide valuable information, so we don't recommend that you turn this setting completely off.

Graphics Driver

This option toggles between using the *Top Gun: Hornet's Nest* software for rendering 3-D graphics and using your 3-D accelerator card. If you have a DirectX-compatible 3-D accelerator card, switching the Graphics Driver option to **Hardware** can result in faster, smoother graphics display. However, if your 3-D accelerator card is not DirectX compatible, you could encounter problems during play. Switching back to **Software** acceleration should solve these problems. The default for this option is set depending on the capabilities of your system, which are automatically detected by the game.

The Hornet Controls screen allows you to change your keyboard and joystick configuration, customizing it to your playing style. To change a control, click on the **Command** to be changed; you can use the arrows on the left side of the screen to scroll through the Commands List. Once a control is selected, the name of the command appears at the top of the screen. Click on the button or key you wish to assign to that control. The assigned key or button will appear on the list. If the control assignment doesn't change, that key or button is already assigned to another control. You must reassign that control in order to free up the key or button. When you have finished making your control changes, click on the **Back** button to return to the main Configure menu.





CHAPTER 4

INSTANT ACTION

Instant Action allows you to just jump in your bird and fly.

You'll find yourself fighting against an unending barrage of opponents in the theater of your choosing. You can start off easy and just brush up on the latest hot shot maneuvers, or challenge enemy aces and be prepared to get blown out of the sky. Because nothing's for keeps, Instant Action is a good way to sharpen your reflexes to a razor edge before you go out and take on a real challenge.

Setting Up an Instant Action Game



To start a game, click on **Single Player** from the main menu, then select **Instant Action** from the bottom of the screen. This brings up the Instant Action screen. From this screen you can select a theater, make changes to your and your opponents' configurations and then start the game.

Instant Action games can be played in any of the three theaters of operation. Click on a theater name, **Siberia**, **Columbia** or **Iraq**, to play in that geographical area. You can now select **Player** or **Enemy Options** to configure game settings such as time limits, the type of enemy you will face and whether or not you have a wingman. You can also just click on **Fight** in the lower left area of the screen to begin the game with the default settings. A loading screen appears, showing a map of the theater of operations. When prompted, press any key to start the simulator. You start in mid-flight, already in the air at a random location.

Changing Your Configuration



After selecting a theater of operations, you may wish to change your configuration, to make your game easier or harder. Click on **Player Options** in the center of the screen to bring up several choices. Click on **Back** to remove the Player Options panel.

Ordinance

Under normal circumstances, you have only a limited supply of cannon ammunition, missiles, bombs and countermeasures. If you run out, you have to find somewhere to resupply or do without. If **Guns Only** is chosen, you have an unlimited supply of cannon ammunition, but no other weapons, so prepare for close quarters action! With **Unlimited** Ordinance, the game becomes much easier; you have all the countermeasures and ammo you need. Now you just have to hit them! The default for this setting is **Normal**.

Note: This setting overrides whatever **Ordinance** mode you set for yourself in the Configure screen.

Fuel

Under **Normal** circumstances, if you survive that long, you will eventually get low on fuel, forcing you to find a friendly airfield or carrier or risk running out of juice. Having **Unlimited** fuel means that you never need to land to refuel, making the game easier. The default for this setting is **Unlimited**.

Note: This setting overrides whatever **Fuel** option you chose for yourself in the Configure screen.

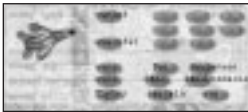
Time

Ordinarily, Instant Action games have no time limit; you fight until you die or until you choose to end the game. You can choose to have the game end after **10 Minutes** with this option. The default of this setting is **Unlimited**.

Wingman

You can choose to face the forces of tyranny alone, or you can bring a wingman along to make your job a little easier. Click on **Yes** if you want someone watching your back. The default for this setting is **No**.

Changing Your Opponent's Configuration



After selecting a theater, you might wish to change your enemy's configuration, to customize your opponents for just the type of challenge you want to face. Click on **Enemy Options** in the center of the screen to bring up several settings. Click on **Back** to remove the Enemy Options panel.

Type

The type of enemy aircraft you face is determined by the campaign theater you are flying in. You can override the theater settings with this option. Clicking on **Varied** has you fighting a random selection of the enemy planes available in that area. To only fight against planes of your choosing, select **Specific**, then click on one or more of the available enemy types. Only the selected enemies, highlighted in red, will appear during the mission. Your enemies are restricted by theater, so some planes can only be found in certain areas of the world. The default of this setting is **Varied**.

Note: If you change this setting, then exit the Enemy Options panel and change the location of the mission, **Enemy Type** returns to the default.

Quantity

The quantity of enemy aircraft you face is determined by this setting. You can choose to give yourself a more or less demanding scenario. Set the number of enemy to **None** if you wish to practice flying, landing and other maneuvers without a risk from other aircraft. If you're feeling suicidal, up the level to **Dangerous** and get ready for a fight against overwhelming odds! What the mission designers think of as **Fun** should provide a moderate challenge, definitely enough to get your heart racing, and it is the default setting.



Ground Targets

Depending on the theater, you might face attack from ships or armored vehicles armed with anti-aircraft missiles. You can override the default for a scenario, making missions more or less difficult by choosing the type of ground-based enemies you are going to face, if any. You can make a scenario easier by ensuring that you encounter no opposition from ground vehicles by setting this option to **None**. Setting ground forces to **SAMs** means you will be dodging missiles from vehicle-based SAMs (surface-to-air missiles) throughout the game. Enabling both **SAMs & Vehicles** should make life interesting, with mobile SAM units, tanks and enemy vessels all aiming for your bird. The default of this setting is **SAMs** only.

Enemy Skill

This sets the skill level of enemy pilots. If the enemy skill level is **Flyboy**, the game should be easier to play; if their skill level is **Ace**, you're in for a real challenge. The default for this setting is **Captain** (medium). **Note:** *This setting overrides whatever **Skill** level you set for your enemies in the Configure screen.*

Playing an Instant Action Game

Instant Action games have only one objective: kill them before they kill you. For detailed game play information, see *The Cockpit*, *Flying* and *Combat*, in their respective chapters, starting on pages 41, 55 and 67. If you are heavily damaged or are running out of fuel or ammunition, you can land at any friendly airfield or carrier. See *Mid-Mission Landing*, starting on page 31, for details. At any time during play, you can press **[Esc]** to pause the game and bring up the In-flight Menu. From here, you can start the mission from the beginning again or quit the simulation.

In-flight Menu

Resume

Returns you to the game already in progress.

Restart Action

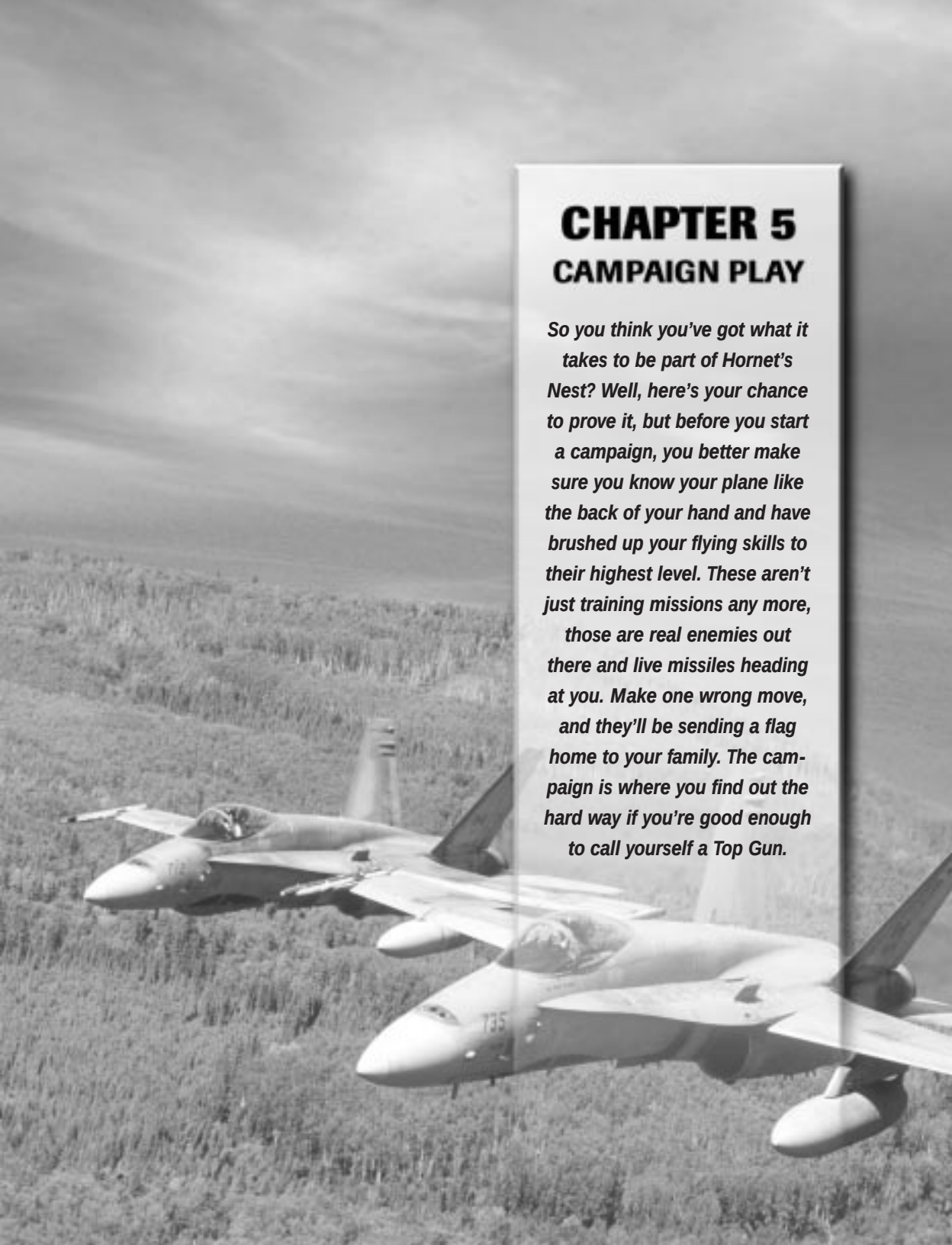
Returns you to the beginning of the Instant Action game.

Main Menu

Quits the simulation and returns you to the main menu.

Ending an Instant Action Game

You end an Instant Action scenario in one of three ways. If time runs out in a timed game or if you die, the game ends and the Debriefing screen appears. From here you have the option of replaying the scenario, returning to the Instant Action screen or returning to the main menu. For more information on the *Mission Debriefing* screen, see page 32. You can also end the game during play from the In-flight Menu, by pressing **[Esc]** and then selecting **Main Menu**.

A black and white photograph of two F-16 fighter jets flying in formation over a dense, forested landscape. The jets are angled towards the left, with the lead jet in the foreground and the second jet slightly behind and to the left. The background shows a vast expanse of trees under a cloudy sky.

CHAPTER 5

CAMPAIGN PLAY

So you think you've got what it takes to be part of Hornet's Nest? Well, here's your chance to prove it, but before you start a campaign, you better make sure you know your plane like the back of your hand and have brushed up your flying skills to their highest level. These aren't just training missions any more, those are real enemies out there and live missiles heading at you. Make one wrong move, and they'll be sending a flag home to your family. The campaign is where you find out the hard way if you're good enough to call yourself a Top Gun.



Select the **Single Player** option from the main menu to bring up the Start Game screen. From here you can start a new campaign, load a saved mission or start an Instant Action game. Select **Back** to return to the main menu. See the previous chapter, *Instant Action*, for more information about that option. If this is your first time in the air, you definitely want to review *Chapter 2: Quick Start*, beginning on page 5, to pick up some pointers on flying, combat and the capabilities of your plane before starting a new campaign. Detailed information about the physics of flying and your F/A-18 Hornet can be found in *Chapter 7: Flight*, starting on page 41. The theories behind dogfighting, as well as information about opposition forces and tactics, can be found in *Chapter 8: Combat*, beginning on page 55.

Starting a Campaign



The Single Player screen contains a list of previously saved campaign missions. The name of the player is given on the left; the campaign theater number and mission number, along with a code identifying the save, are given on the right. You can scroll through this listing by left-clicking on the up and down arrows at the top and bottom center of the screen. To start a new campaign, simply type your name into the **Pilot Name** slot and click on **Start** at the bottom of the screen. Whether you begin a new campaign or continue an old one, you will be involved in a series of missions within a world region. Each time you complete an entire theater, you are transferred to a new one. As an introduction to each theater and for each of the missions, there are short cinematic sequences that give information about the area of operations, as well as details about past and future missions.

Each mission you fly usually has four parts:

- ◆ Briefing
- ◆ Ordnance Loading (optional)
- ◆ Mission
- ◆ Debriefing

Mission Briefings



After you start a mission, the game begins loading and the Briefing screen appears, showing a map of the current campaign theater. The area the mission covers is highlighted on the map and further information about the mission is given in a small terminal display.

Briefing Map

The approximate area the mission covers is highlighted on the theater map. Your starting point is marked on the map with a silhouette of your Hornet, along with the American flag. The approximate locations of your objectives are marked on the map with icons of the target types ringed in green. Locations of American forces are also given. A smaller version of the map is also available during play from the cockpit Multi-Function Display. Once the simulation begins, press **[T]** until the Campaign Map Display appears.

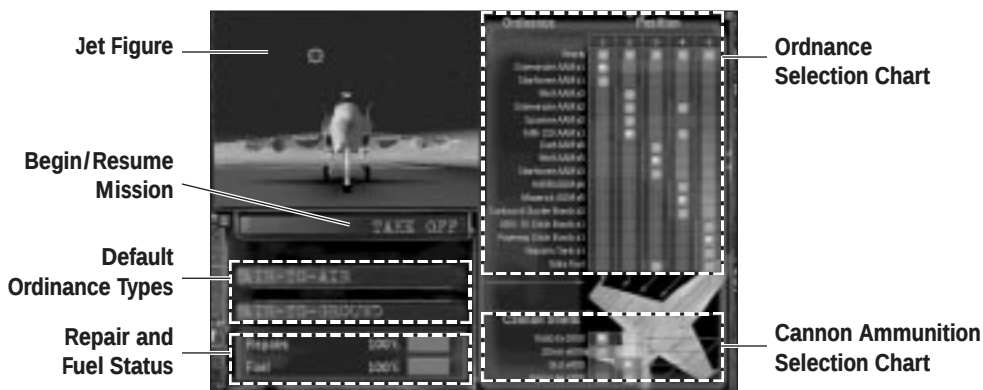
Mission Description

On the left side of the screen, you'll see a text description of the mission. The basic mission objectives are also available during play, from the Multi-Function Display. Once the simulation begins, press **[T]** until the Waypoints Display appears.

Exiting the Briefing Screen

When you are finished reviewing the briefing map and the mission description and the game has finished loading, press any key (when prompted) to exit the Briefing screen and begin the mission. A briefing movie is shown, and then the Ordnance screen appears. We suggest that you pay careful attention during these briefings, as they contain valuable mission information, but you can bypass the briefing movie by pressing any key.

Loading Ordnance



You see the Ordnance screen before every mission and whenever you land at a friendly airfield or aircraft carrier during play. From this screen, you can select what kinds of weapons and ammo to arm yourself with and refuel, restock and make repairs when your resources are depleted during combat. Your crew chief prepares two types of weapons configuration for the mission before you reach your plane, one for **Air-to-Air** combat and one for **Air-to-Ground** combat. The optimal choice for this mission is preselected, but you can choose the other if you wish. Click on **Takeoff** to launch your plane. If you want a different configuration from one of these defaults, you can make changes on this screen.

Your F/A-18 Hornet has five positions on which it can load missiles, bombs and extra fuel, represented by five columns on the Ordnance chart. Some weapons can only be loaded into certain slots. If a weapon can be loaded into a slot, a gray circle appears in that **Position's** column across from the **Ordnance** type. Each weapon is listed, followed by the number of missiles of that type that slot can hold. Click in a circle to load that type of weapon at that position.

You can also configure your bird's armament further by selecting what type of ammunition to load for your **Canon**. It can carry two of the four different ammunition types at the same time, either Rabbit or 20mm and either Bull or Explosive. Select which type of ammo to load by clicking in the gray circles in the Cannon chart at the lower right of the screen. For information on the various missiles, bombs and ammo types, see the *F/A-18 Hornet Weaponry* section, starting on page 73.

At the lower left of the screen are your current **Repair** and **Fuel** status. If you land during a mission and those percentages have dropped below 100%, ground crews automatically begin refueling your jet and making repairs. They also reload your chaff and flares to the maximum. When you've resupplied and taken on the desired complement of ammo and missiles, click on **Takeoff** to resume the mission.

Accomplishing Your Mission

All missions are crucial to the success of your team, but each has different objectives you need to fulfill. Most objectives relate to destroying enemy aircraft and ground installations and defending your own from enemy attack. The objectives for a particular mission are outlined during your briefing and can be retrieved at any time during play from the Multi-Function Display in your cockpit. When you finish your last objective, your mission is complete and you receive a debriefing. You must complete each mission successfully before you can continue on to the next. If you fail a mission, you have the option to replay it when you get to the Debriefing screen. You may also opt to change your game configuration before restarting the mission.

In-flight Menu

At any time during play you can press **[P]** or **[Esc]** to pause the game and bring up the In-flight Menu. From here, you can adjust your difficulty, sound and graphics options, start the mission from the beginning again, or quit the simulation.

Resume

Returns you to the game already in progress.

Restart Mission

Returns you to the beginning of the current mission game.

Configure

Brings up the Configure screen, from which you can change difficulty settings and alter sound and graphics options. See *Chapter 3: Configuring Your System*, starting on page 13, for detailed information.

Main Menu

Quits the simulation and returns you to the main menu.



ADVICE FROM LIEUTENANT LODGE:

Picking the right missile for the job is a habit to get into early, Maverick. You won't always have unlimited ammo. Save the big stuff for the tough enemies. If you lock onto a helicopter, don't fire immediately. Switch to a more plentiful missile such as the Dart or Wolf (the **[X]** key cycles through the weapons). Then blow them away.

Meeting Your Objectives



At the start of most missions, you must launch from either a carrier or airfield. A few missions begin with you already in the air. If you begin on an airfield runway, you need to fire up your engines and take off. To launch from a carrier, you only need to press the [\[Spacebar\]](#). Check out the section on *Takeoff and Landing*, starting on page 59, for more details.

Your Mission Controller

You're not alone after you take off. Lieutenant Lodge, your mission controller, is there to offer instructions, advice and warnings over the radio. She's not above giving a fighter pilot a hard time when she thinks you've made a mistake, so try to fly your missions by the numbers, if you want to stay on her good side.

The Waypoint Marker

If you don't hear any specific instructions from your mission controller or wingman, you should review the Campaign Map and the Waypoints list and select the best Waypoint Marker to follow to fulfill your first objective. At the top of your HUD is the Heading Scale, which gives the direction your jet is traveling. Right below the Heading Scale, possibly at the left or right edge of the HUD, will be a small thick vertical bar; this is the Waypoint Marker. You are on course if the Marker is in the middle of the scale, but you will likely have to bank your jet in the direction of the Marker to move it into the center. If you have difficulty getting or staying on course, review the *Flying Basics* section, beginning on page 56.

Campaign Map Display

If you get really lost, you can bring up the campaign map by pressing the [\[T\]](#) key until the map appears in the Multi-Function Display on the lower right side of your cockpit. This shows you the operation area, along with several different markers. Your jet is shown as a white triangle, friendly carriers and airfields are blue squares, and circles are mission objective locations. A red circle indicates a primary objective, the focus of your mission. Yellow circles represent secondary objectives. A solid circle or square indicates your currently selected objective, the objective you are being guided to by the Waypoint Marker in the Heading Scale at the top of your HUD.

Waypoints Display

Many missions have more than one objective. Some objectives are considered primary; you must accomplish these goals in order to complete the mission. Other objectives are secondary and are not necessary for the success of the mission, although they might make the mission, or future missions, easier to accomplish. A listing of all the objectives for a mission can be found in the Waypoints Display, part of the Multi-Function Display (MFD) at the lower right of your cockpit's instrument panel. Press **[T]** to cycle through the MFD until the waypoints appear. On this display, primary objectives are given in red, secondary objectives are listed in yellow, and friendly aircraft carriers and airfields are listed in blue. Waypoint headings that might make your mission easier are also listed in blue. The currently selected item is highlighted, and a picture of that location appears in the Monitor Screen to the left of the MFD; this is the objective or landing zone you are being guided to by the Waypoint Marker. You can cycle through the list by pressing the **[W]** key, or press **[Q]** to cycle through the list backwards.

Speeding Up Time

On long missions, there can be periods of inactivity. You can cut down this lag time by increasing the speed of the simulation. Press **[Backspace]** to go into time compression. The **TIME x2** light is activated on the instrument panel if you are in time compression mode. Be careful, though. If you're zipping along at accelerated speed and you run across an enemy aircraft, you may be shot down before you have a chance to react. To return to the normal speed of the simulation, press **[Backspace]** again. You should also remember that the Hornet is a high-altitude aircraft. The higher you fly, the faster you can go. You'll achieve maximum speed somewhere near 30,000 feet.



ADVICE FROM LIEUTENANT LODGE:

Your missiles will not lock onto every primary objective. Sometimes you need to just to fire the missile straight at your target. Center the base of the ground target in your target reticle, and hold down the **[Shift]** key when you fire the weapon. The missile will fly straight ahead. Take your time Maverick, we don't have a missile to waste!

Destroying the Opposition

As part of your mission objectives, you might be asked to destroy ground targets, including enemy ships, vehicles and installations, and you almost certainly will encounter opposition from enemy aircraft. You attack an enemy force, whether on land, air or sea by acquiring them as targets in your Head-Up Display and then firing guns, bombs or missiles at them. Although the following sections give the basics of attacking ground and airborne threats, *Chapter 8: Combat*, beginning on page 55, discusses these issues in more detail.



Attacking Other Aircraft

You will frequently encounter enemy jets and helicopters during your missions. You can shoot down other aircraft with either your cannons or by firing air-to-air missiles. Your cannons are most effective within two miles of your target. To fire your guns, simply line the gunsights up with your target and press the **[Spacebar]** or joystick **Button 1**. You can toggle between the two types of cannon ammunition you have loaded by pressing the **[F6]** and **[F7]** keys. The currently loaded ammunition is displayed on the lower left of the HUD.

Missiles have a far greater range than the cannon, although they are most effective within ten miles. You can order your weapons systems to automatically make the enemy nearest to the center of your gunsight the target by pressing the **[N]** key. Press the **[Z]** key repeatedly to cycle through all the available targets. Your HUD flashes the **SHOOT** message when a target has been acquired; to fire a missile, press either the **[Ctrl]** key or joystick **Button 2**. You can select one of the air-to-air missile types your jet is carrying by pressing the **[F1]** through **[F4]** keys or cycle through them using the **[X]** key or joystick **Button 4**. Your current missile type is listed on the HUD. You can toggle between air-to-air and air-to-ground ordnance by pressing the **[Tab]** key.

It could take several shots to bring down an enemy plane, and unless you have unlimited ammunition, you can quickly run out of missiles. Make your missile selection wisely, depending on the type of target and the distance between you. See the *F/A-18 Hornet Weaponry* section, starting on page 73, for detailed information about the effective range and preferred targets for each missile and ammunition type.

Attacking Ground Targets

Bomb Impact Point



The methods for assaulting ground targets are similar to those for attacking aircraft, but with a few key differences. If you are flying low enough to the ground to target them in your sights, you can fire your cannons at vehicles and installations. However, this method can be extremely dangerous if the vehicles are equipped with anti-aircraft artillery. A more traditional method of attack is to use bombs. If you haven't already, switch

to air-to-ground ordnance by pressing the **[Tab]** key. A line descends from the bottom of your Flight Path Marker to the ground. This is the projected area of impact for the selected bomb. Unless you are pitched downward, you generally cannot see the bottom of the line from the normal cockpit view. Cycle through to the HUD Only view by pressing the **[F8]** key if you wish to see the point of impact for your bombs. When the “+” at the bottom of the line runs over your target, press the **[Ctrl]** key. Air-to-ground missiles can achieve locks on ground targets; when you have acquired a target and you get the **SHOOT** message, press the **[Ctrl]** key.

Evading Enemy Fire

Sooner or later, somebody’s going to want to take you out. Your best method of defense is to not be there when they try. Change altitudes and bearing frequently when enemy aircraft are in the area. That helps prevent them from getting a bead on you with their guns or a lock with their missiles. If your HUD flashes the message **ENEMY HAS LOCK**, keep an eye on your radar, zooming out with the **[R]** key, if necessary, until you are at maximum range. Missiles appear on the radar as small boxes with tails. If you see one heading for you, take evasive action. If you cannot shake the missile, dump chaff, flares or both by pressing the **[C]**, **[V]** or **[Page Down]** keys. When you can, avoid flying directly over vehicles and ground installations, which may contain surface-to-air missiles. If they don’t see you, chances are they won’t fire on you.

Losing Your Jet

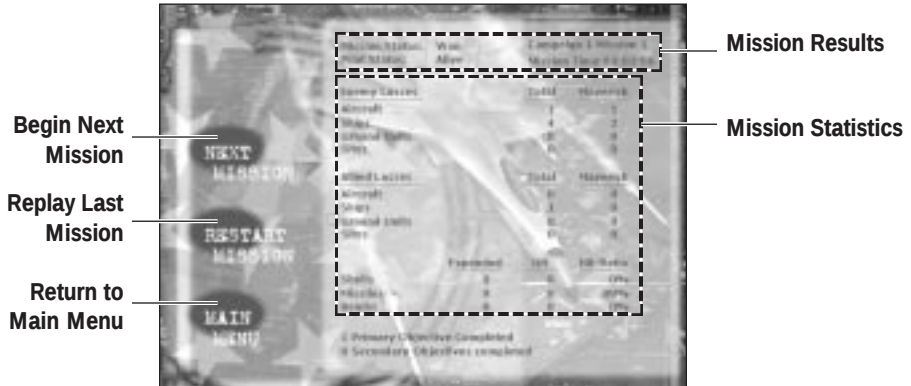
Sure you’re the best of the best, but some days you’re going to be outnumbered, outgunned or just plain out-matched. If your jet takes too much damage and is destroyed, the mission ends in failure, and you have to restart the scenario. Better luck next time!

Mid-Mission Landing

If you run low on fuel, countermeasures, missiles and ammunition, or if your Hornet is badly damaged and you need repairs, you can opt to land at a friendly aircraft carrier or airfield at any point during the mission... provided you can find one! Cycle the MFD by pressing the **[T]** key until the Waypoints Display appears; select the nearest of the blue landing zones to set your Waypoint Marker, and follow the Marker to that location. Once you approach the carrier or airfield, you need to land. As you line your plane up as if to perform a manual landing, your ILS light will start to flash. When it does, press **[I]** to engage the automatic landing systems. For detailed landing directions, see the section on *Takeoff and Landing* in the Flight chapter, starting on page 69.

Once you’ve landed, the Ordnance screen appears. You can select new ammo and weaponry to bring on board, and if you are damaged or low on fuel, you are automatically repaired and refueled. Your countermeasures are also automatically brought to their maximum. Your current **Repair** and **Fuel** status are shown on the lower left. It may take some time to be ready for action if you were extremely low on fuel or severely damaged. See *Loading Ordnance* on page 26 for a complete description of this screen.

Remember that resupplying takes time; while you’re on the ground, the enemy can be attacking your forces without opposition!



Depending on what happened on the most recent mission, you might be presented with a number of choices to exit this screen. If you successfully completed the mission, your game is automatically saved and you have the option to proceed to the **Next Mission** or return to the **Main Menu**. If you failed the mission, you have the options to replay this scenario or return to the **Main Menu**. **Restart Mission** gives you the chance to correct your mistakes and fly the mission again. Selecting this option brings you back to the Briefing movie, right before the mission begins.

When you successfully complete the tenth mission of a theater, you have beaten that theater and can continue to the next. A longer movie plays, introducing the next theater. When you have mastered all three theaters, you've won the campaign and the right to call yourself Top Gun.



CHAPTER 6

MULTIPLAYER MISSIONS

Going head to head against the best pilots in the world is a rush like nothing else.

Multiplayer missions let you prove that you truly are the king of the dogfight, the master of the well-placed missile. It can be "us-against-them" or "you-against-the-world." It's your choice whether to go in as a squad or fly it solo.

Whichever way you take it, keep one eye on your radar, the other on your HUD and both hands on the controls.



Establishing a Connection

The first thing you need to do, before you even start the game, is establish your connection to the other players. The method varies depending on what type of connection you use.

Internet

To play an Internet game, you need to connect to the Internet at 56.6 kbps or better, either through an Internet Service Provider (ISP) or a network connection to the Internet. Internet play is possible via the Microsoft Network's Gaming Zone; see below for details. However, you can also play against other players over the Internet if every player knows the host's (the person who creates the game session) IP address. If you are going to host a game, you can determine your IP address by opening your Windows Start menu, clicking on **Run**, then typing **winiipcfg** and clicking on **OK**. You can then use one of the many internet chat programs, or e-mail to send your IP address to the players you want in your game.

If you wish to join an Internet game, and you have the IP address of the host, start *Top Gun: Hornet's Nest* and open the Multiplayer Session screen. Click on **Connection** until **Internet** appears. You will be prompted to enter the IP address of the host. After you have entered the address, the game session will appear on the **Combat Session** list at the lower half of the screen.

Microsoft Network Gaming Zone

The Microsoft Network Gaming Zone is a free Internet service that helps you join and host games with people all over the world. To play on the MSN Gaming Zone, you must first connect to the Internet, then use your web browser (either Internet Explorer or Netscape Navigator 4.0 or higher) to enter the Zone at www.zone.com. Once you're there, simply follow the on screen instructions. The MSN Gaming Zone automatically launches *Top Gun: Hornet's Nest* for you; be sure you have exited the game before connecting to the MSN Gaming Zone.

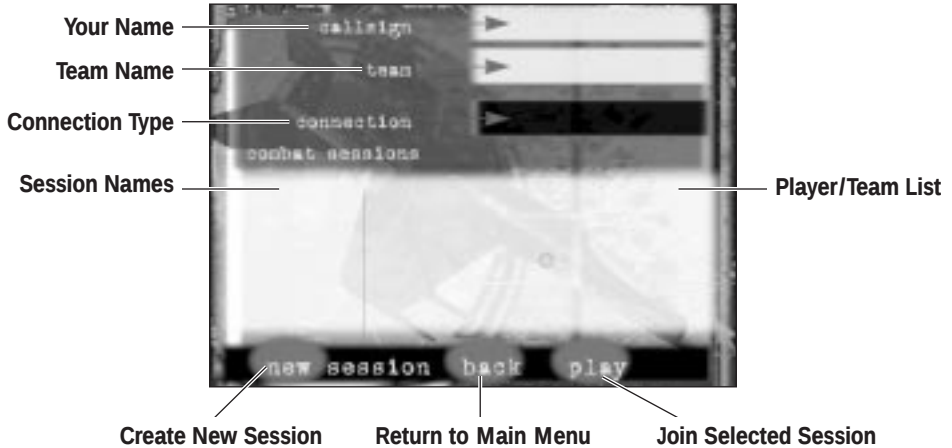
LAN/IPX Network

To play a game over a Local Area or IPX Network, each player must be connected to the same network. *Top Gun: Hornet's Nest* supports IPX compliant network drivers. Every network is different, and something in the structure or design of your network may affect game play or prevent you from making a connection. If you encounter difficulties, ask your Network Administrator for help.

Modem

To play a game with another player over a modem, you must first be certain your modem is properly configured for Windows. Open your Windows Start menu and open the Control Panel folder. Open the Modems folder and make sure that your modem appears on the list. If it does not, left-click on **Add** and follow the instructions to add your modem to the list. Once you are certain that your modem is configured to work with Windows, you can set up a modem connection profile, which you can configure to dial out before you start the game or after the game starts up and you have selected the modem **Connection** type. If you do not have a modem connection profile setup, *Top Gun: Hornet's Nest* will open the Windows facility, from which you can set up a modem connection profile and select a number to dial. Both you and your opponent must set your modems to connect to the same speed, at least 56.6kbps, in order to play a game.

Starting a Multiplayer Mission

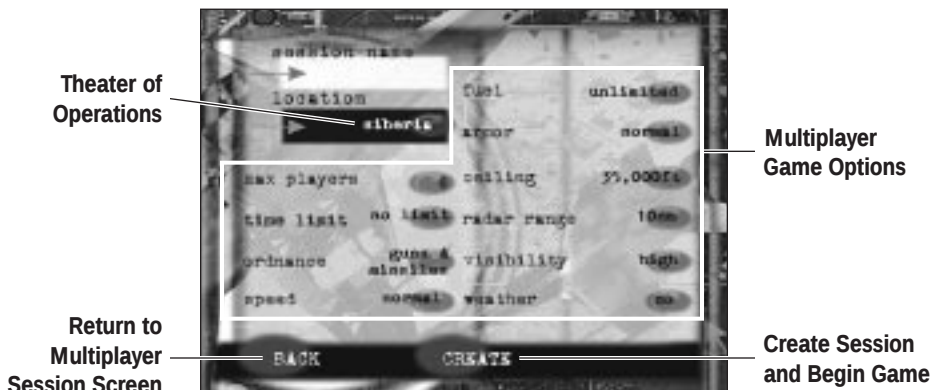


Once you have established a connection, start *Top Gun: Hornet's Nest* and click on **Multiplayer** from the main menu. This brings up the Multiplayer Session screen. Enter a **Callsign** in the name slot at the top of the screen; if no name is entered, a default name is entered as your callsign. Then type in a name for your **Team**; if no team name is entered, your callsign becomes your team name as well. Finally, select a connection type by clicking on the **Connection** button.

Joining a Session

At the bottom of the Multiplayer Session screen is a list of **Combat Sessions**. You can scroll through this list with the arrow buttons at the left side of the screen. Next to each session name is a number giving the maximum amount of players allowed in the game. If a name is on the list, but it is grayed out, that game is full and cannot be joined. In the **Teams** column, next to each session name is a list of every player in that session; team names appear next to each callsign. Left-click on a session name in the Multiplayer Setup screen to select it, and click on **Play** to join that game. Select **Back** to return to the main menu *without* joining a game.

Creating a Multiplayer Game



Selecting **New Session** from the Multiplayer Session screen brings up the New Session screen. Here you can set up a new multiplayer game. Enter a name for the session in the upper left-hand corner. If no name is entered, the name of the location of the game will be used instead. Next, set the scenario parameters. Clicking repeatedly on a button toggles through the options for each setting. Click on **Create** when you are finished to create a new session with your chosen parameters. You are immediately dropped into the game; other players will appear on the Campaign Map and Radar as they join the game. Select **Back** to return to the Multiplayer Session screen *without* creating a new session.

Location

This option sets the theater of operations for the game, either **Siberia** (the default), **Iraq** or **Colombia**.

Max Players

This option sets the maximum number of players that are allowed in your game (**2**, **4** or **8**). If your game has reached the maximum number of players, it becomes grayed out in the Session screen and no one else can enter the game until someone leaves.

Time Limit

Ordinarily, multiplayer games have no time limit; you fight until everyone chooses to quit the game. You can choose to have the game end after a specified time with this option. To set a time limit, click on **10 Minutes**. The default of this setting is **Unlimited**.

Ordnance

Multiplayer games have three weapons options. If **Guns Only** is chosen, prepare for close-quarters dog-fighting! Every player has an unlimited supply of cannon ammunition, but no other weapons. With **Unlimited Ordnance**, the game becomes much simpler; you have all the countermeasures, ammo and missiles you need. Under ordinary circumstances, you have only a limited supply of cannon ammunition, countermeasures and air-to-air ordnance. If you run out, you have to find somewhere to rearm or do without. The default for this setting is **Normal**.

Speed

This toggles the speed of all the player's jets. When this is set to **Fast**, most of your bird's attributes are increased, including acceleration, top speed, roll and pitch rates. This makes the game much more fast-paced and (hopefully) fun. The default for this setting is **Normal**.

Fuel

Under ordinary circumstances, if you survive that long in a multiplayer game, you will eventually get low on fuel, forcing you to find a friendly airfield or carrier or risk running out of juice. Having **Unlimited fuel** means that you never need to land to refuel, making the game easier and keeping the action going constantly. The default for this setting is **Normal**.

Armor

This setting allows you to set the damage resistance of the players' jets. With **Light** armor, a single Dart missile could destroy your plane; this setting is good for guns-only fights and for fast and vicious games that involve a lot of bloodshed. **Heavy** armor is equivalent to the generous protection you enjoy during campaign missions; several missiles are necessary to bring you down. A compromise between the two, **Normal**, is the default setting.

Flight Ceiling

With this setting, you can create an artificially low flight ceiling, **15000ft**, thus shrinking the potential combat area and making opponents easier to find. If you attempt to fly above the flight ceiling, your jet feels the effects of very thin air; it doesn't handle very well and it loses speed. The default is a more generous **35000ft**.

Radar Range

You can shrink the range of the players' radar with this option. A radius of **5nm** makes it more difficult to fire on enemy planes from extreme range and requires the players to be much more aware of their surroundings and potential dangers. The default is the normal **10nm**.

Visibility

This setting controls the visibility in the game: how far each player can see. **Low** visibility is like flying through a fog bank; it is impossible to see very far and enemy planes can easily sneak up on an unwary pilot who isn't watching the radar closely. **Medium** visibility is somewhat better, but still a more limited visual range than the player may be used to. The default is **High**, the normal far-reaching visibility of a clear day. If you are the host of a multiplayer game and you are running with software acceleration, you may wish to switch to **Low** visibility for improved game speed.



Weather

With this setting, you can toggle weather effects on and off. If you toggle this **On**, your game will have snow if it is set in Siberia, rain in Colombia and no effect in Iraq. Weather cuts down on visibility, makes the planes fly slower and limits their maneuverability. Default for this option is **Off**.



ADVICE FROM LIEUTENANT LODGE:

You know Maverick, optimum maneuverability comes at speeds between 300-400 knots. You don't have to be breaking the sound barrier to be a hotshot. In a dogfight with jets of equal caliber, the pilot with the most control is the one most likely to survive; try slowing it down when you engage the enemy, and use patience and skill instead of raw power.

Playing a Multiplayer Mission

You start a multiplayer mission just as you do an Instant Action game; the loading screen appears and you can press any key, when prompted, to start the game. You begin already in the air at a random location on the campaign map. The object of every multiplayer game is to achieve the most kills, individually and as a team, while being killed the least amount of times. If you are shot down or crash during a multiplayer game, you will reappear in a new jet at a safe location shortly thereafter.

Finding the Opposition

Finding your opponents is simple. Every member of any opposing team shows up as an objective on the Multi-Function Display's Campaign Map and Mission Waypoints Displays. You can set an enemy as your objective and follow the Waypoint Marker on the top of the Heading Scale toward the enemy. When you maneuver to within range of an enemy, his jet appears on the radar as a red arrow.

Target Designator boxes also identify opposing planes. Where the vehicle name usually appears, below the TD box, the player's callsign is given instead. Above the TD box is that player's team name. Your teammates are also labeled with their team name and callsign, but they do not have targeting boxes around them on the HUD. You cannot get missile lock on teammates, although you can accidentally hit them with gun or missile fire. Teammates also appear as blue arrows on the radar instead of red ones.

Mid-Mission Landing

You can land at friendly airbases and carriers during multiplayer missions to refuel and rearm. Cycle the MFD by pressing the **[T]** key until the Waypoints Display appears; select the nearest of the blue landing zones to set your Waypoint Marker and follow the Marker to that location. You can also land at bases on the map that are under enemy control in the campaign. However, these bases do not appear on your Waypoints Display, so you must find them yourself if you wish to land in one of these previously hostile areas. Once you approach the carrier or airfield, you need to land. However, you cannot engage the automatic landing system during multiplayer missions! For manual landing directions, see the section on *Takeoff and Landing* in the Flight chapter, starting on page 59.

Once you've landed, the Ordnance screen appears. You can select new ammo and weaponry to bring on board, although you are limited to cannon ammunition if **Guns Only** was chosen by the game's host during setup. If you are damaged or low on fuel, you are automatically repaired and refueled. Your countermeasures are also automatically brought to their maximum. Your current **Repair** and **Fuel** status are shown on the lower left. It may take some time to be ready for action if you were extremely low on fuel or severely damaged. See *Loading Ordnance* on page 26 for a complete description of this screen.

Note: Once a player has landed at an airbase or carrier, they become untouchable until they takeoff again.

Multiplayer Chat

During the mission, you can open communications with the other pilots. Simply press the **[Insert]** key to chat with everyone in the game or hit **[Home]** to only talk with the players on your own team. When chat is initiated, a semi-transparent green box appears. Type in your message; **[Backspace]**, **[Delete]** and all other keys function normally in this window. However, while you're typing in a message, all keyboard flight and weapon controls are disabled—so talk fast! You can still control the plane with a joystick.

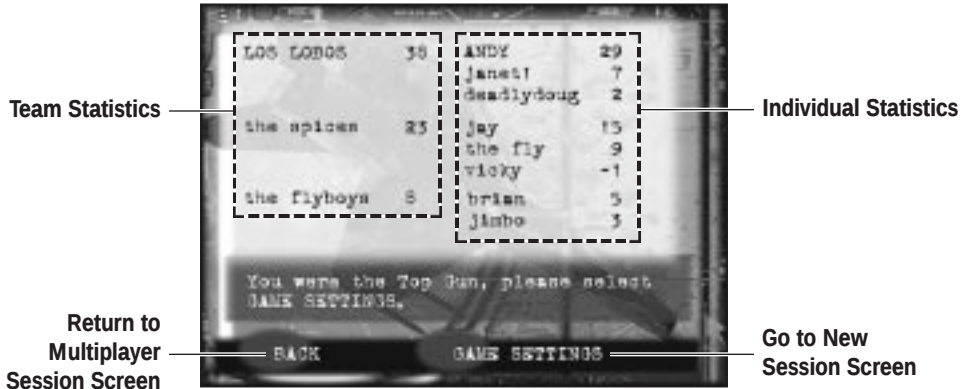
When you have finished typing, press **[Enter]** to send your message and the Send Chat window disappears. If you receive a message from another player, a three-line window appears in the upper left-hand corner of the screen. If another message comes in when three are already displayed, the lines will scroll upward. When no message has been received for 10 seconds, the Receive Chat box is removed.



ADVICE FROM LIEUTENANT LODGE:

Yo Maverick, if you are having trouble getting a craftily dodging target into your sights, use your rudder controls (the **[<]** and **[>]** keys). They can make slight turns of your jet, helping you to line up your target.

Ending a Multiplayer Mission

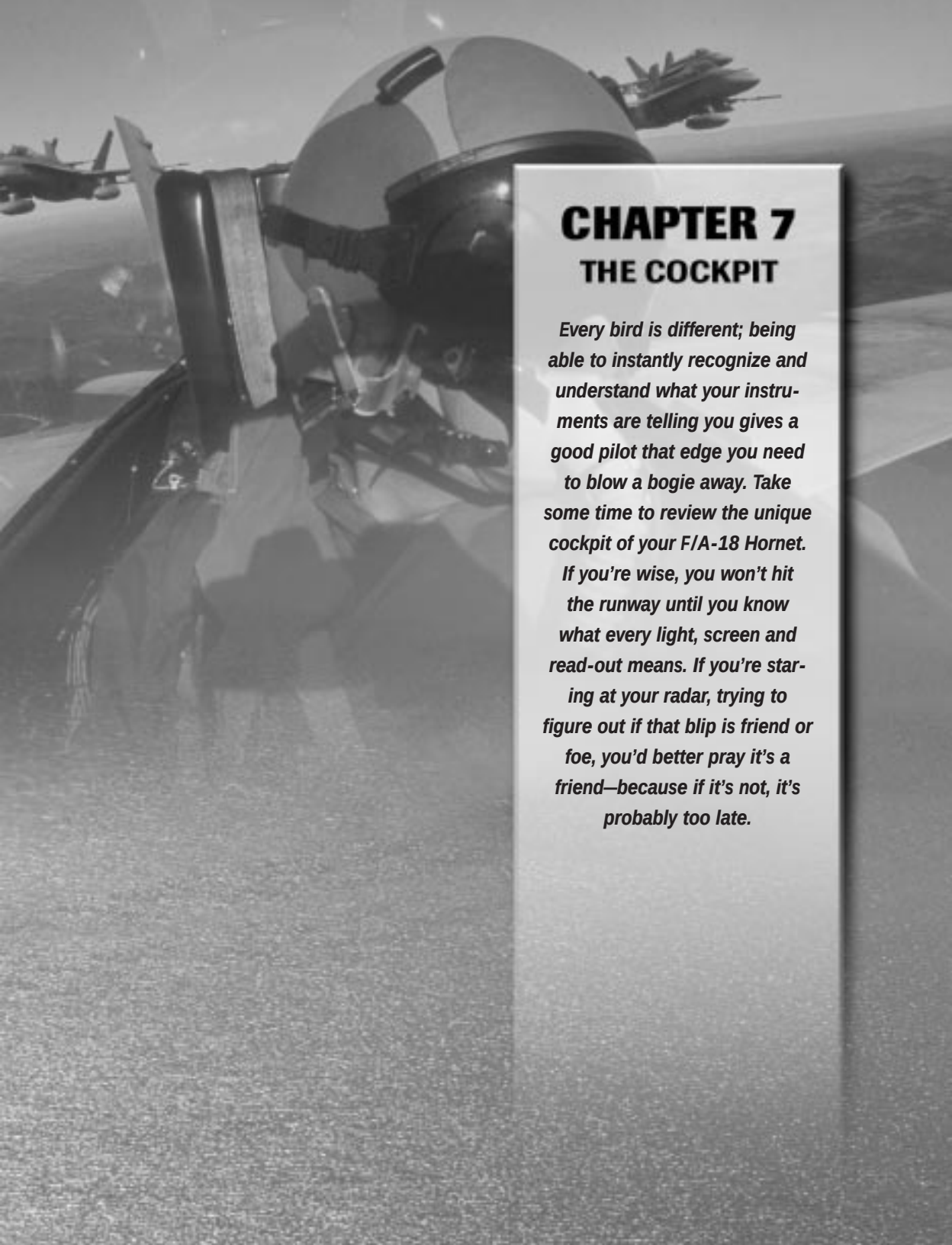


When the game ends, either because you quit the game from the In Flight menu or because time ran out, the Tally screen appears. This gives the kill statistics for each team and player. If the game is still playing, you are shown the statistics for the moment you left the game.

Your own score is shown first, with your teammates listed below and then the other players grouped by team. Each time you are killed in the game is a negative kill to your record, so that if you are killed more often than you kill, you can have a negative score.

If the game has ended, the individual with the top score for the game is known as the Top Gun, and can be the host for the next game. If you are the Top Gun, click on the **Game Settings** button to go to the New Session screen and choose the settings for the next game. If you did not win the game, you can wait at the Tally screen; when the host sets up the new game you will automatically be drawn into it.

If the game was not over, or you do not wish to play the next game, click on **Back** at the bottom of the Multiplayer Session screen. From there you can rejoin the game (if it is still in progress) or create or join a new game. Note that if you rejoin a game, your kills are not cumulative; you start again with zero kills.

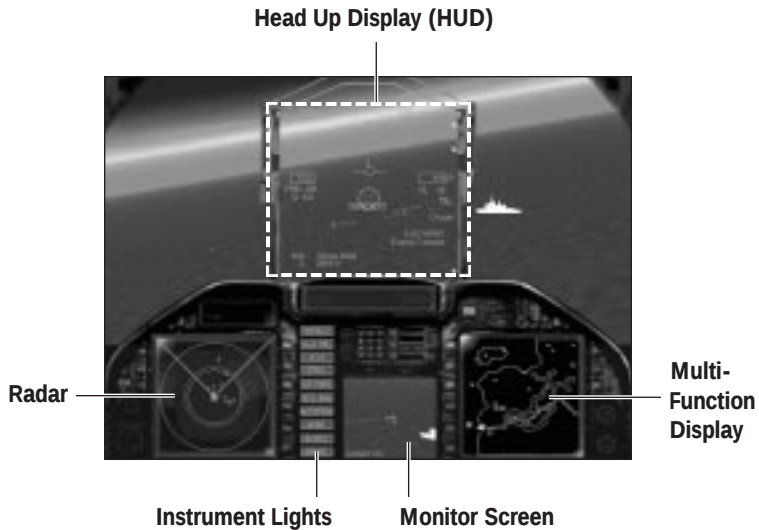


CHAPTER 7

THE COCKPIT

Every bird is different; being able to instantly recognize and understand what your instruments are telling you gives a good pilot that edge you need to blow a bogie away. Take some time to review the unique cockpit of your F/A-18 Hornet.

If you're wise, you won't hit the runway until you know what every light, screen and read-out means. If you're staring at your radar, trying to figure out if that blip is friend or foe, you'd better pray it's a friend—because if it's not, it's probably too late.



The front view from your cockpit contains a Head-Up Display (HUD), a column of Instrument Lights, a Monitor Screen and two Multi-Function Displays, one of which contains the radar. Although the HUD contains all the essential information for flight, the remaining components do have their specialized uses. The HUD is explained in detail starting on page 45. The Instrument Lights are described on page 48, the Monitor Screen is defined on page 49, the Multi-Function Displays are described on page 50 and the radar is explained on page 53.

Changing Views

In *Top Gun: Hornet's Nest* there are several ways to view your surroundings. Some views are better than others for combat and some should only be used to view surrounding action. The different types of views are described in detail below.

Standard Views

The Standard views can be cycled by pressing the **[F8]** key. These are the most common views for combat and flight. The three standard views are Cockpit View, Chase View and HUD Only View.



Cockpit View

In this view the Instrument Panel, containing the Multi-Function Displays (MFDs), Monitor Screen and Instrument Lights, blocks the lower portion of the screen. Virtual Cockpit is automatically enabled in this view; see page 44 for details.



Chase View

This view is an outside, third-person perspective from directly behind your Hornet. The MFDs and Instrument Lights are transformed into floating components of the HUD, and the Monitor Screen is moved to the upper right corner of the view.



HUD Only View

The HUD Only view is identical to the Chase view except the view no longer contains your F/A-18.

Outside Views

The outside views display all of the HUD data but do not display the Instrument Panel. When in one of the outside views, you can use the **[N]** key to select the enemy closest to your target reticle.



Satellite View

Press **[F9]** to bring up the Satellite View. This shows an angle from right above your aircraft, looking down. You can most easily see enemies that are almost directly above or below you with this view.



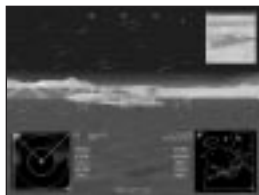
Look Back View

Press **[F10]** to bring up the Look Back View. This shows an angle from ahead of the cockpit, looking behind you at the tail of your aircraft. You can most easily see enemies that are directly behind you with this view.



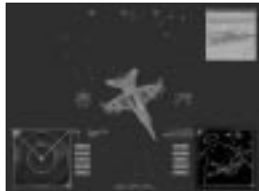
Right Outside View

Press **[F11]** to bring up the Right Outside View. This shows an angle looking at the right side of your jet.



Left Outside View

Press **[F12]** to bring up the Left Outside View. This shows an angle looking at the left side of your jet.



Flyby View

Press **[V]** to bring up the Flyby View. This shows an angle from a fixed point below and to one side of your aircraft. You watch your jet approach, fly over and fly away from this point of view. The sequence repeats continuously until another view is chosen.

Virtual Cockpit

The Virtual Cockpit View is a special cockpit view that allows you to keep better track of your enemies and to chase a target by giving you the freedom to move your head and look around. From the Cockpit view (**[F8]**), normal Virtual Cockpit is automatically enabled; if you are in any other view, you are brought to the Cockpit View if you use the numeric keypad or “hat” on your joystick. In the standard Virtual Cockpit, you use the keys on the numeric keypad to rotate the view up, down, side to side and at an angle. You can also move the Virtual Cockpit around with the “hat” on your joystick, if it has one.

Normal View

The **[J]** key activates normal Virtual Cockpit viewing. When Normal View is selected, you can turn the view smoothly in the chosen direction until another keypad button is pressed. The **[5]** key on your NumPad returns the view to the standard, forward-facing Cockpit View.

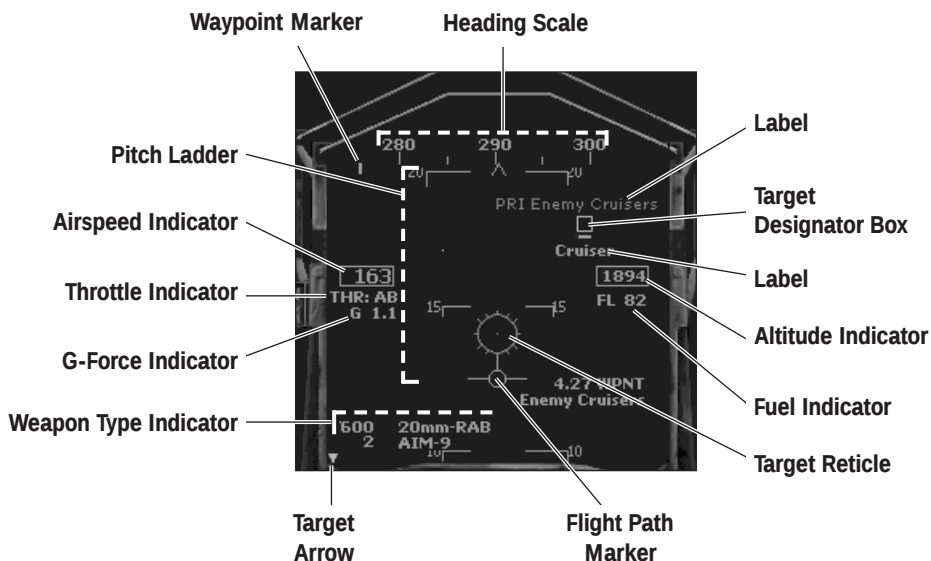
Snap Views

The **[K]** key selects snap Virtual Cockpit viewing. When Snap View is enabled, you only look in the indicated direction so long as the keypad button is depressed. When the key is released, the view “snaps” back to the standard, forward-facing Cockpit View.

Padlock View

The Padlock View locks your view on the selected target, which is then kept in the center of your screen. You have to maneuver the Virtual Cockpit HUD so that it lines up with your target aircraft thus enabling you to fire your weapons at your target. The Virtual Cockpit will snap back to the front when you lose sight of the target aircraft. This happens if the target is far in the distance, underneath your aircraft or otherwise out of visual range.

Understanding the Head-Up Display (HUD)



The Head-Up Display (or simply HUD) is the most essential instrument in the F/A-18 cockpit. Projected from the front of the Instrument Panel, the HUD shows a wealth of information—from weapons and target data to altitude and heading readings. Sometimes the HUD might become difficult to see because of sky and terrain color. You can lighten the color of the HUD by pressing ☐ and darken it by pressing ☐.

Heading Scale

You can find the Heading Scale at the top of the HUD. This scale shows your current compass direction (in degrees), where 0° is due north. The small arrow below the center of the scale is where you read the current heading.

Waypoint Marker

The small, thick, vertical bar just below the Heading Scale is the Waypoint Marker. This indicator shows you the direction to the currently selected mission objective. When the Waypoint Marker is centered on the Heading Scale, you are on course for your destination. Otherwise, you will have to bank your jet in the direction of the Marker to move it. As you approach the heading for that waypoint, the bar drifts to the center of the scale. When you are directly over a waypoint, the marker may hop from side to side quickly. You may need to pitch your jet towards the ground to see the item the waypoint guided you to. The Waypoint Marker also moves quickly if it is set to point to a group of approaching enemy vehicles.



Pitch Ladder

In the center of the HUD, you'll see several straight lines with numbers at each end. This is the Pitch Ladder, and it shows the current degree of ascent (positive numbers) or descent (negative numbers). The lines are initially aligned with the horizon line and also show the roll angle of your aircraft. On the Pitch Ladder, positive degrees of ascent are shown as solid lines, while negative degrees of descent are shown as dashed lines. The tips of the Pitch Ladder's "steps" point towards the horizon. If you become disoriented during flight, try to maneuver so that the Pitch Ladder's "steps" are horizontal, and then pitch the plane so that the step with the number 0 appears on the HUD.

Flight Path Marker

The Flight Path Marker points in the direction the aircraft is moving, which is not necessarily where the nose of the plane is pointed. It reflects changes in your current flight direction. For example, if you point your aircraft's nose downward, the Flight Path Marker moves to the lower half of the HUD. When you release the stick, the Flight Path Marker slowly returns to the center of the HUD.

Airspeed Indicator

On the left side of the HUD is the Airspeed Indicator, a box displaying the current airspeed in knots (nautical miles per hour). A nautical mile is just slightly longer than an imperial mile.

Throttle Indicator

Below the Airspeed Indicator is the Throttle indicator (**THR:**). This shows the percent of throttle you are applying. If you need extra thrust, you can engage the afterburner. The Throttle Indicator then reads **AB**.

G Force Indicator

Just below the Throttle Indicator, you can find the G Force Indicator. This shows the current G (gravity) load on the aircraft. If you maintain high Gs for too long, you will black out. Conversely, if you pull too many negative Gs, you will red out. See the section *G Forces* on page 63 for more information.

Weapon Type Indicator

The Weapon Type Indicator, located at the lower left corner of the HUD, displays the currently selected Cannon Ammunition on top and Ordnance type below that. The number of rounds and missiles available to fire is given to the left of the code names. You can switch between Cannon Ammunition types by pressing the **[F6]** and **[F7]** keys and cycle through either the Air-to-Air or Air-to-Ground Ordnance by pressing the **[X]** key repeatedly or by pressing the **[F1]** through **[F5]** keys. The various Weapon Type codes are:

CANNON AMMUNITION	AIR-TO-AIR ORDNANCE	AIR-TO-GROUND ORDNANCE
20mm-RAB Rabbit Rounds	AIM-D Dart	AGM-88 HARM
20mm Standard Rounds	AIM-W Wolf	AGM-65 Maverick
20mm-BUL Bull Rounds	AIM-7 Sparrow	AGM-SB Sunburst Cluster Bomb
20mm-EXP Explosive Rounds	AIM-9 Sidewinder	GBU-15 GBU-15 Glide Bomb
	AIM-120 AMRAAM	GBU-16 Paveway Glide Bomb
	AIM-SF Starflower	GBU-NAP Napalm Tank

Altitude Indicator

On the right side of the HUD, opposite the Airspeed Indicator, is the Altitude Indicator, a box giving the current altitude (in feet) above sea level. If an **R** appears to the right of the Altitude Indicator, this typically means that you are flying below 5000 feet and that radar is being used to generate altitude information.

Fuel Indicator

The Fuel Indicator on the right side of the HUD, below the Altitude Indicator measures the amount of fuel you have remaining as a percentage of a full tank. On normal missions, you begin with 100% of fuel, but for long missions, you can take on extra fuel by selecting it from the Ordnance screen, which will raise the percentage above 100%.

Target Reticle

The crosshairs in the middle of the screen represent where your cannon rounds will be fired and where boresight missiles will impact. The reticle points in the direction of the nose of your aircraft. When you fly straight and level, the crosshairs are in the center of the HUD. However, when you are pulling high-speed maneuvers, the crosshairs will move around the HUD. Remember that you must aim the crosshairs in front of a fast-moving target to ensure hitting the aircraft. Effective firing ranges for various weapons can be found in the *F/A-18 Hornet Weaponry* section, beginning on page 73. If the item pointed at by the reticle is within range of the selected ammo, the crosshairs change shape and the color of the reticle changes slightly.

Target Arrows/Target Designator Box

The Target Arrows and Target Designator Box are HUD indicators that help you determine the location of enemy targets even if they are beyond visual range. When enemy air and ground forces are within range of your radar, small arrows appear around the edges of the HUD, pointing in the direction of the enemy plane or vehicle. As you travel and move closer in the direction of an arrow, that target eventually comes into view.

The Target Designator Box appears when an enemy is in view and the Target Arrow disappears. The TD Box surrounds the enemy, making it easier to see and allowing for easy identification. Accompanying the Target Designator Boxes are labels, used to easily identify different types of friendly and enemy aircraft, ships and missiles, as well as the names of friendly ships. Friendly aircraft, ships and missiles have green labels; enemies are in red.

The currently selected target's Target Designator Box is also red. Other available but unselected targets have green TD boxes and red labels. To cycle through the available targets, press the **[Z]** key. Hitting **[N]** makes the enemy closest to the center of your reticle the designated target, assuming it is within missile range.

Your allies are easily distinguishable because Target Designator Boxes do not appear around friendly aircraft, ships or vehicles, and their labels are green. In multiplayer games, the pilots' callsigns appear as labels if the pilots land to resupply during the game.



Reading the Instrument Lights

Below the HUD, to the left of the Monitor Screen, is a row of instrument lights. Keeping your eye on these warning indicators is vital to avoiding potentially dangerous situations, such as running out of fuel. These lights let you know when certain systems or instrumentation are engaged. (These lights also flash if a system is damaged and inoperative.)



ADVICE FROM LIEUTENANT LODGE:

Hey Maverick, if you're running low on fuel, or you have a long way to go, with nowhere to refuel, be conservative with your afterburners. If you're in a hurry, use them to punch it up to cruising speed, then cut the throttle to 100%. If the Fuel Light goes on, turn off the afterburners immediately, you can't run a jet on fumes!

TIME X2 Light

When the Time Compression x2 light illuminates, your jet begins moving at accelerated speed. Everything, including combat, takes place in half the normal time, often preventing you from reacting to events in time. Press **[Backspace]** to go into time compression, and to return to the normal speed of the simulation, press **[Backspace]** again.

A-A / A-G MD Light

When you toggle between ordnance types with the **[Tab]** key, the Air-to-Air / Air-to-Ground Missile Defense light switches, indicating which type of ordnance you are currently attacking with.

ILS Light

When the ILS light flashes, this means you are on an approach to land at an airfield or aircraft carrier and that you are in a position where pressing the **[I]** key will engage the Instrument Landing System. Once the system is successfully activated, the ILS light will remain solidly lit. For more information on ILS requirements, see the *Takeoff and Landing* section, starting on page 59.

STALL Light

When the Stall light illuminates, your aircraft has achieved a stall condition. You can usually recover from a stall by pointing your plane's nose down and increasing the throttle. If the Stall light flashes, the engine is damaged. Monitor your damage level and return to a friendly carrier or airfield for repairs if necessary.

LW FUEL Light

When the Low Fuel light blinks, you have reached a “bingo” fuel state and have slightly more fuel than is needed to travel back to the nearest base at your current rate of fuel consumption. When the light is solidly illuminated, your jet is truly low on fuel. You need to immediately seek out a friendly airfield or aircraft carrier, or risk crashing your jet because of lack of fuel.

SYS DMG Light

When the System Damaged light illuminates, your jet has taken severe damage. Cycle through the Multi-Function Display with the **[T]** key until the Aircraft Status Display appears. Monitor your damage level and return to a friendly carrier or airfield for repairs if necessary.

ALTITUDE Light

When the Altitude light illuminates, your jet has dropped to a low altitude. You need to check your surroundings and your Altimeter carefully. You might just be passing over a rise in the terrain, or you might be dangerously close to the ground and need to pull up or risk crashing your jet. If your altimeter is dropping rapidly, you might wish to take immediate action to stabilize your flight path.

GEAR Light

The Gear Light comes on when your landing gear is down. Press **[G]** to raise or lower the landing gear. If you have just taken off and have forgotten to manually raise your landing gear, you receive an audio reminder to raise your gear. Gear usually cannot be lowered at speeds in excess of 250 knots.

FLAPS Light

The Flap Light turns on when you have the flaps up. Flaps are good for increasing lift at slow speeds. Press **[F]** to turn the flaps up or down. If flaps are left up at speeds in excess of 700 knots at sea level, or slightly faster at higher elevations, the flaps can break under the air pressure, and you will lose the ability to raise flaps until they are repaired the next time you land.

BRAKE Light

This light illuminates when you have your ground or speed brakes turned on. Speed brakes increase drag on your F/A-18 and are especially useful when adjusting airspeed for landing. Ground brakes slow your wheels and are used to stop your jet after touchdown. Press **[B]** to turn the speed brakes or ground brakes on or off.

Watching the Monitor Screen

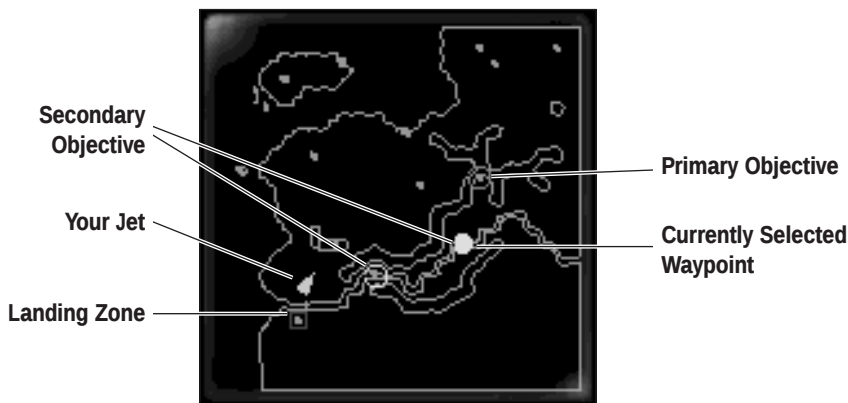
In the center of your Cockpit View, to the right of the Instrument Lights, is the Monitor Screen. In all other views, the Monitor can be found in the upper right corner of the screen. By default, the Monitor shows you the currently selected waypoint and its surroundings, whether that is a friendly aircraft carrier or a hostile missile installation. If you have a missile lock on an enemy, you can toggle the Monitor Screen to follow that enemy by pressing **[E]**. Thereby, the Monitor allows you to keep an eye on the effects of your missiles. If you lose the lock on your enemy or if it is destroyed, the Monitor Screen reverts to showing your nearest objective or other waypoint. In Chase View, HUD Only View and all Outside Views, you may hit the **[H]** key to hide the monitor screen, giving a less cluttered field of view.



Viewing the Multi-Function Displays

On the left and right sides of your cockpit are the Multi-Function Displays. The left MFD holds the Radar and is discussed separately in the *Using the Radar* section, beginning on page 53. The right MFD cycles through several different informative displays, giving you information on your aircraft and weapons status, as well as the campaign map.

Campaign Map Display



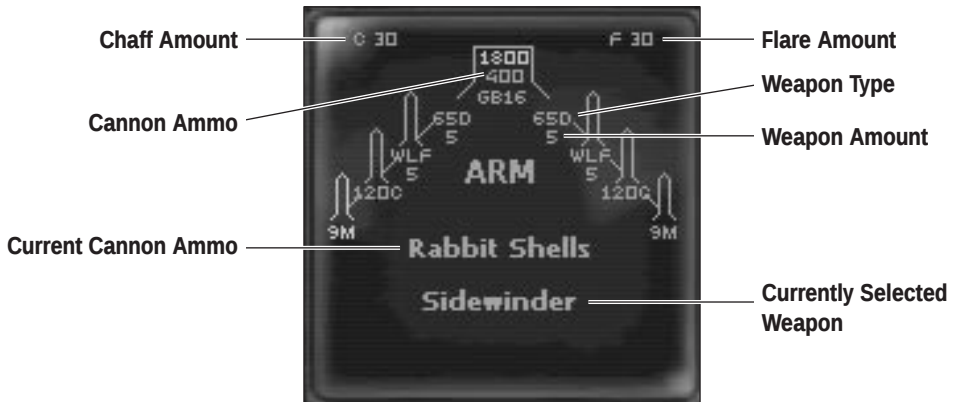
The Campaign Map Display gives an overall view of the current theater of operations. The general terrain of the area is marked out in green. Your jet appears on this display as a white triangle pointing in the direction of travel. This display uses the same color coding as the Waypoints Display described below. Primary objectives are shown as hollow or solid red circles, secondary objectives are shown as solid or hollow yellow circles, friendly landing zones are shown as hollow or solid blue boxes, and waypoints are shown as hollow or solid "+" symbols. A solid circle, box, or "+" indicates that the location is the currently selected waypoint. If the plane travels outside the area of the campaign map, the white triangle for the Hornet stays at the edge of the map and flashes.



ADVICE FROM LIEUTENANT LODGE:

Stay focused on your mission objectives, Maverick. Blasting every tank you see may be fun, but you might not have enough firepower left to complete the mission. Also, while the primary objectives are your priority, don't forget about the secondary ones. Even if you don't see the effects now, accomplishing them may aid you in later missions.

Ordnance Display



This display allows you to examine the numbers and placement of missiles and ammunition, as well as checking on your countermeasure supply. A triangular outline represents the wings of your jet. The type of missile or bomb that is loaded at each position is shown by a code. If more than one of that missile or bomb type is loaded, the number is shown below the type code. If extra fuel tanks are loaded onto a position, **FL** is written at that location. At the top of the triangle, the cannon ammunition numbers are shown. The highlighted numbers and codes are the currently selected weapons, and their full names appear in the center of the display. At the top right and left of the display, the current numbers of chaff (**C**) and flares (**F**) are also given.

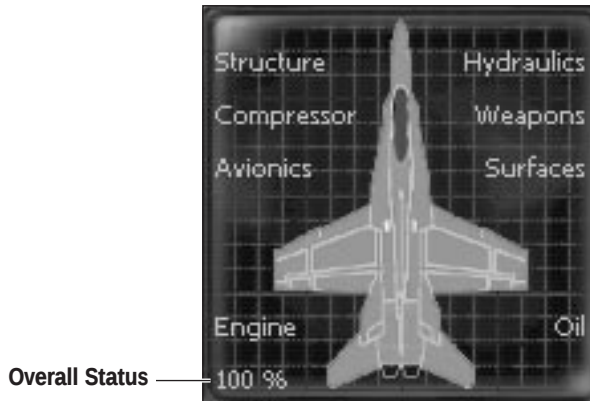
AIR-TO-AIR ORDNANCE

DRT Dart
WLF Wolf
7E Sparrow
9M Sidewinder
120C AIM-120 AMRAAM
STRF Starflower

AIR-TO-GROUND ORDNANCE

HARM HARM
65D Maverick
GBSB Sunburst Cluster Bomb
GB15 GBU-15 Glide Bomb
GB16 Paveway Glide Bomb
NAP Napalm Tank

Aircraft Status Display



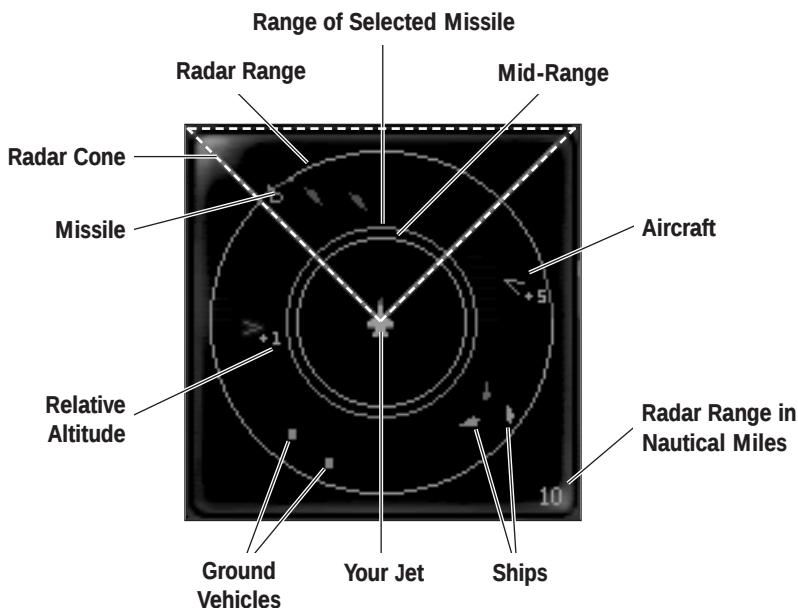
Since there may be times when you want to check up on the overall status of your aircraft, you have the option to bring up the Aircraft Status Display. A silhouette of your jet is shown, and several areas of the jet are labeled. Whenever you take a significant amount of damage from a missile or gunfire, the Aircraft Status Display appears showing damage you have taken. The affected system is highlighted in yellow or red; yellow indicates that that area of the plane has taken some damage, red means the system is seriously damaged and possibly inoperative. The overall “health” of your plane is estimated as a percentage in the lower left corner of the display. When this number goes below 30%, you should consider finding a friendly airfield or aircraft carrier to land and make repairs.

Mission Waypoints Display



A listing of all the objectives for a mission can be found in the Mission Waypoints Display. On this, each waypoint is named, along with a code describing the type of waypoint it is. Primary objectives (**PRI**) are given in red text, secondary objectives are listed in yellow (**SEC**) and friendly aircraft carriers and airfields (**LZ**) are listed in blue. The range (**RNG**) in nautical miles to each of these waypoints from your current location is given below the name, along with the heading (**HDG**) you would have to take to reach that objective or landing zone. The currently selected item is highlighted, and a picture of that location appears in the Monitor Screen to the left of the MFD; this is the place you are being guided to by the Waypoint Marker. You can cycle through the list by pressing the **[W]** key or cycle through this list backwards by pressing the **[Q]** key.

Using the Radar



Your F/A-18 is equipped with one of the most sophisticated radar systems in the world. In conjunction with the data fed to it by high-flying AWACS support planes, this allows you to lock onto targets up to 10 nautical miles away, even if they are significantly above or below your aircraft.

The Radar is in a second Multi-Function Display, on the left side of your cockpit, next to the Instrument Lights. It is used to determine the elevation and location of other aircraft and vehicles, relative to your F/A-18.



Radar Ranges

On the radar, your F/A-18 is situated in the middle, facing the top of the scope. The angle is from a satellite view—meaning that all aircraft in the radar are viewed from a direct overhead angle. Aircraft in the upper half of the circle are in front of your F/A-18, ones in the bottom half are behind your plane. Your Radar panel displays all aircraft within radar range, but you are only able to achieve a radar lock on aircraft within a 90° cone extending from the front of your aircraft. Lines angling out from the nose of your aircraft designate the lock-on area.

The lower right-hand corner of the radar displays the radar range in miles. Radar range is the distance from the top of the radar scope to the center (that is, if the radar range is 10, the distance from the center of the scope to the edge of the outer circle is 10 nautical miles). A second green circle appears at some magnifications, indicating the halfway point in the range. A red circle marks the effective range of the currently selected missile. In the pictured example, the aircraft on radar is approximately eight nautical miles from your F/A-18 and your missile has a range of about six nautical miles. Your radar has a maximum range of ten miles. It can be zoomed in and out through three radar ranges: 10 miles, 5 miles and 2.5 miles, using the **[R]** key. It's important to periodically check what range your radar is currently displaying, so that you can judge the approximate threat of various enemy forces.



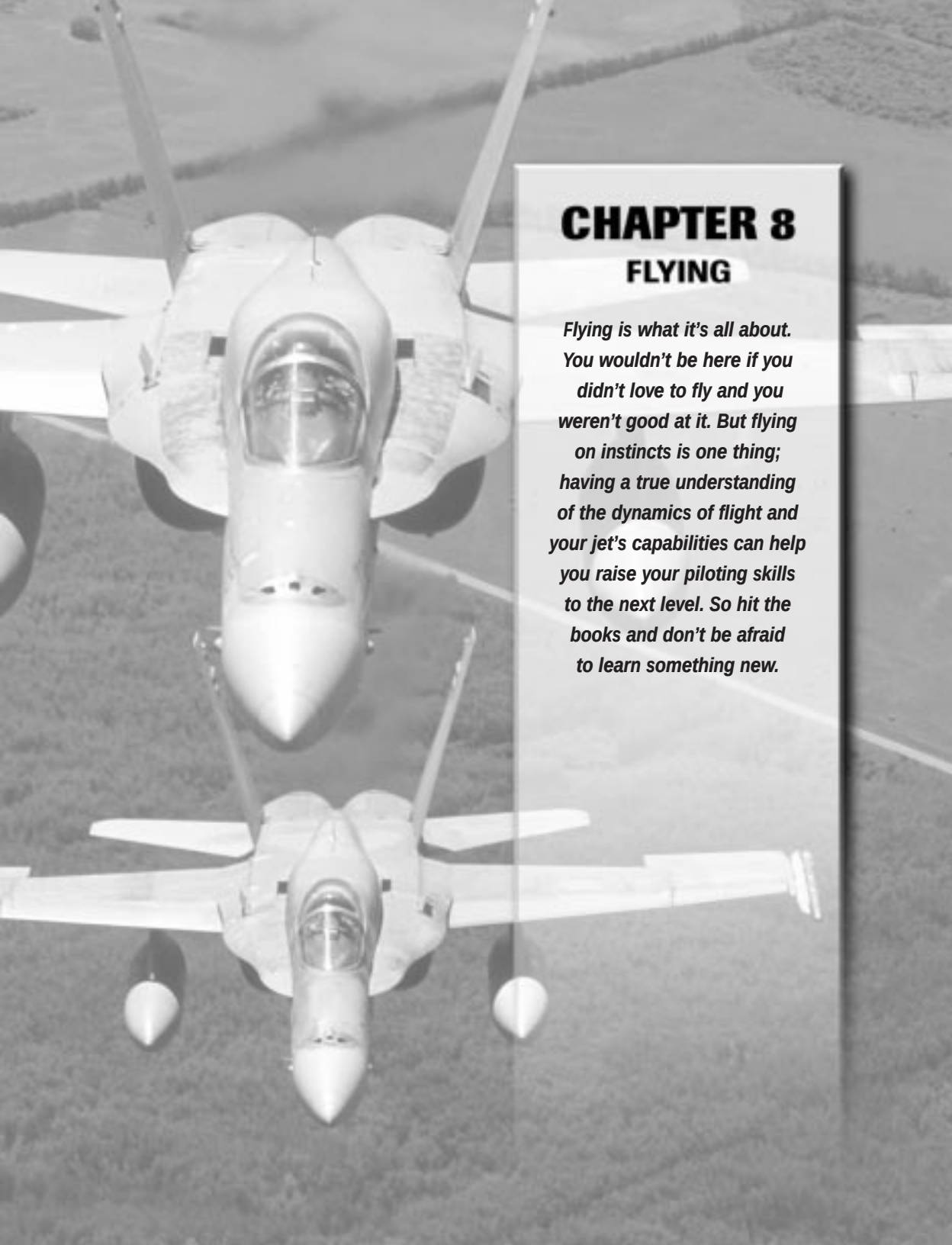
ADVICE FROM LIEUTENANT LODGE:

Use your head, Maverick. Don't stay at radar zoom 2.5nm or 5nm, if there aren't any enemies showing up. Zoom out to maximum range so you have some warning. Conversely, if a missile is incoming, you want to zoom in the radar as the missile gets nearer and nearer. This gives you a better idea of when to use countermeasures or evasive maneuvers.

Radar Symbolology

Several symbols are used to differentiate target types on the radar. Symbols in red are enemy forces, symbols in blue are friendly ones. Aircraft are represented by arrows pointing in the direction of travel. Solid cigars are vessels, and solid squares are ground units. Boxes with tails are missiles. The currently selected target flashes on the radar.

The number next to each target shows the altitude relative to your aircraft in thousands of feet. Positive numbers mean that the target is above your bird, negative numbers mean the target is below your plane. For example, the locked enemy aircraft in the example is 5,000 feet above your F/A-18.



CHAPTER 8

FLYING

Flying is what it's all about. You wouldn't be here if you didn't love to fly and you weren't good at it. But flying on instincts is one thing; having a true understanding of the dynamics of flight and your jet's capabilities can help you raise your piloting skills to the next level. So hit the books and don't be afraid to learn something new.



This section outlines the controls of your F/A-18 Hornet, both major and minor. It also covers the procedures for landing and takeoff, as well as the physics of flight. Finally, you're given a bit of the history of the Hornet and details on the action this multi-purpose jet has seen.

Flying Basics

The stick and throttle are the two main controls of your F/A-18. Once you understand the relationship between them, you have mastered the basics of flight. Other controls include the rudder (generally used for adjustments when landing and strafing), brakes, flaps (providing more lift at low speeds to aid landing) and countermeasures (for decoying enemy missiles).

The Stick

The flightstick is used to control the movement of your aircraft. It allows you to bank your aircraft left and right or pitch your aircraft up and down. You can use either a joystick or the keyboard for flying your F/A-18. We recommend flying with the joystick. Later, when we refer to the stick, it is meant to represent your flight control device of choice—whether that is the joystick or the keyboard. It is important that your joystick be properly configured before flying your aircraft. See *Configuring Joysticks and Other Game Controllers*, on page 14, for complete details.

If you're using the keyboard to fly, you must use the arrow keys. The , ,  and  keys function the same as the pitch down, pitch up, bank left and bank right controls on the joystick. As long as you hold down a key, you keep full pressure on that directional control. So if you press and hold down the  key, you keep rolling left until you let go of the key or go into a spin. To execute a successful bank to the left, you need to roll left and pull back on the stick by using the  and  keys in combination. We'll discuss this more in the section on *Turning*.

If your plane is plummeting downward or is otherwise out of control, you can press the  key to automatically level the plane. This is, however, not a guaranteed fail-safe!

Turning

Flying an aircraft is much different than driving a car. When you spin the steering wheel left in a car, your car goes left. However, when you push the stick in an aircraft to the left, the plane turns slightly but mostly spins on its axis. To execute a hard turn, you need to bank to the left, then pull back on the stick. This gives the aircraft the lift necessary to make the turn.

For example, you're flying straight and level and want to turn to the left. First, keep your eye on the horizon line. Next, push the flightstick to the left slightly, then pull back on the stick slightly. On this example, try to keep the horizon in sight at all times. The harder you pull back on the stick, the tighter the turn and the greater the G forces on your aircraft. However, pulling too hard on the stick to execute a turn can also cause your engine to stall as airspeed is bled away. The F/A-18 turns best at around 450 knots; flying faster or slower than that prevents your jet from turning as efficiently.

The Throttle

The [=] and [-] keys and the number keys on the top row of your keyboard control your throttle. Press [=] to increase your engine's revolutions per minute (RPM) or [-] to decrease your RPMs. Press the [0] key to set your throttle to 0%, [1] to set it to 30%, [2] for 60%, [3] for 70%, [4] for 80%, [5] for 90% or [6] to set the throttle's RPMs to 100% automatically. The [S] and [D] keys duplicate the function of the [=] and [-] keys and are more convenient for players who like to keep their left hand stationary.

If you need to increase speed quickly, you can engage the afterburner for additional thrust by pressing the [A] key or the [End] key. The afterburner produces a tremendous amount of thrust, but burns an incredible amount of fuel.



ADVICE FROM LIEUTENANT LODGE:

Maverick! When shooting ground targets, watch your Flight Path Marker. Many pilots crash because they fly too close to the ground without leaving enough time to pull up. If you are so close to the ground that you can't see your Flight Path Marker, because it's below the visible area of your HUD, you should think about leveling out your flight.

Other Controls

The Rudder

The rudders on the F/A-18 are primarily used for low-speed, low-altitude maneuvers such as strafing ground targets or corrections when landing your aircraft on a runway or carrier. They allow your aircraft to "slide" horizontally one direction or another without forcing you to bank and overcorrect. Rudders are most effective when your aircraft is at a speed below 250 knots. To use the rudders, press [←] to rudder left and [→] to rudder right. You can also use rudder pedals if they have been properly configured for Windows.

Speed Brakes

Your speed brakes are primarily used in landing, when you might need to decrease your speed dramatically in a short amount of time. Press [B] or [Delete] to activate your speed brakes; the **BRAKE** light on the Instrument Panel illuminates. Be careful to watch your altitude indicator when applying the brakes. If you reduce speed too quickly, you might not have enough lift to remain in the air. Press [B] or [Delete] again to release the brakes and increase the throttle if you seem to be falling too rapidly.

Flaps

Flaps are used to give your plane increased lift, allowing you to coast for longer in the air with less thrust. They are invaluable when landing or performing low altitude maneuvers such as strafing ground targets. Press [F] to raise your flaps while you are cutting back on the throttle to slowly lower your jet. The FLAPS light goes on when you raise your flaps and warns you if you do not lower them after takeoff. Leaving flaps up causes them to become damaged at high speeds, at which point it becomes impossible to lower them. Landing at a friendly airbase or carrier repairs them.



Gear

Your landing gear is essential to landing your jet. If you land your bird manually, you must lower your landing gear using the **[G]** key at least several seconds before touchdown. Be certain that you have lowered your throttle and reduced speed before activating your gear. When your gear is down, the GEAR light on the instrument panel illuminates. Having your gear down increases drag and might make the plane slightly less stable. Don't forget to raise the gear again after takeoff. If you forget, a warning light will sound. You can set the gear to be automatically retracted in the Configure menu. See *Configuring Game Difficulty* on page 15 for more information.



ADVICE FROM LIEUTENANT LODGE:

One of the best ways to avoid enemy fire, Maverick, is to avoid being seen. You can fly low near canyon walls and in mountainous regions as cover from SAM sites and ground units. But don't horse around Maverick. That's a million dollar plane you're flying, and if you break it, you've bought it!

Countermeasures

While they're not technically part of the flying process, the F/A-18 has two types of anti-missile countermeasures: chaff and flares. Chaff and flares are dumped from the F/A-18 to fool or "spoo" incoming enemy missiles. The most effective time to use chaff and flares is when a missile is within three miles of your aircraft. Using countermeasures while maneuvering hard produces the best results.

Chaff are small packets containing bits of foil that are designed to fool radar-guided enemy missiles. Dump chaff by pressing **[C]**. You have 30 packets of chaff available per mission (unless **Unlimited** Ordnance has been selected in the Configure screen).

Infrared flares are designed to draw heat-seeking missiles away from your aircraft. Drop flares by pressing the **[V]** key. As with chaff, you have 30 flares you can drop each mission, unless you restock mid-mission. You can press the **[Page Down]** key to release both chaff and flares at the same time. Use the zoomed-in mode of the radar to track incoming missiles. When a missile is within .5 to 1 nautical miles, drop countermeasures to (hopefully) "distract" the missile.

There is another way to avoid incoming missiles, but it's a little trickier. This method is called "jinking," and it requires you to make somewhat hard and fast maneuvers just as an approaching missile is almost on top of you. Using the zoomed-in range of the radar lets you better estimate when to "jink."

Takeoff and Landing



Obviously, takeoff and landing are two of the most important things you can do on a mission. If you make a mistake in either area, your mission (and possibly your life!) is immediately over.

Takeoff

Compared to landings, takeoffs are a breeze—literally, but if you don't follow the proper procedures, you could end up skipping like a stone along the ocean or crashing in a messy ball of fire at the end of the runway.

For carrier takeoffs, your F/A-18 is positioned at the front of the catapult, a device that literally throws a jet into the air. Hit the **[Spacebar]** to launch your aircraft from the carrier. You are launched at 100% throttle, but you want to check your altitude and airspeed after launching and be sure you are climbing at a good rate.

When you clear the carrier deck, press **[G]** and **[F]** to raise your landing gear and put your flaps down to reduce drag and avoid damaging your flaps. Pull back on the stick to gain altitude. Keep an eye on the Pitch Ladder on the HUD. Your angle should be between 15° and 25° for takeoff.

The major difference between an airfield takeoff and a carrier takeoff is that there is no catapult launch. Once you are on the runway, engage the afterburner (**[A]**). Pull back on the stick once your airspeed is approximately 140 knots, and you'll climb into the air. You want to keep your pitch between 15° and 25° until you reach a comfortable altitude. Don't forget to raise your landing gear and flaps soon after takeoff.



ADVICE FROM LIEUTENANT LODGE:

If you start to stall after takeoff, Maverick, don't panic. First level your flight out (press the **[M]** key). If your afterburners aren't on, turn them on. They may give you the extra lift you need to break out of the stall. If that doesn't work, turn your nose down to increase the lift and be ready to pull up as soon as your Stall light blinks off.



Landing on Autopilot

The easiest way to perform a landing is with the autopilot.

- ◆ Fly to within ten miles of the friendly aircraft carrier or airfield.
- ◆ Line up with the landing strip — roughly.
- ◆ Decrease your speed and altitude and keep your pitch around 30°.
- ◆ Gradually level out and refine your heading as you approach the strip.
- ◆ About a mile from the runway, drop your speed below 250 knots.
- ◆ Lower your landing gear and raise your flaps.
- ◆ Keep it flying level and aligned with the runway.
- ◆ When your ILS light starts flashing, press **I** to bring your ILS online.

If you are properly lined up, your ILS takes over and you are safely brought down to the ground. However, if your HUD flashes **TILT**, something is wrong, and you will not automatically land. The most common reasons that the ILS fails to function are:

- ◆ You have not lowered your gear and raised your flaps.
- ◆ You are too close to or too far from the runway.
- ◆ You are coming in too steeply.
- ◆ You are rolled too far to one side and need to level your wings out.
- ◆ You are coming in too fast.
- ◆ Your flight path does not line up exactly with the runway.

You can attempt to make minor corrections immediately. However, if you are within a quarter mile of the landing zone and you still are getting a TILT error when you try to engage your ILS, you need to pull up, swing around and try your approach again.

Landing Manually

Manual landing is considerably more difficult than using the ILS, especially on an aircraft carrier. The required degree of control is higher and the room for error much smaller. Fighter pilots refer to a carrier landing as “a controlled crash,” since you hit the deck at relatively high speeds. There are three aspects to landing: orientation, approach and execution. We will discuss a carrier landing, but the theory holds true for runway landings as well, although you have more room to slow down on an airfield and you don’t have to worry about catching the arrestor cables. It is highly recommended that you switch to the HUD Only view when attempting a manual landing. It provides the best view of the ground.

Orientation

A successful carrier landing begins with the approach. Toggle your MFD with the **[T]** key until the Waypoints Display appears. Cycle your waypoints with the **[W]** key until the blue landing zone you wish to land at is selected. Align your Waypoint Marker so that it appears in the center of the Heading Scale and keep an eye on the range, which is given in the Waypoints Display. You should be at least 10 miles away from the carrier before beginning your approach.

Approach

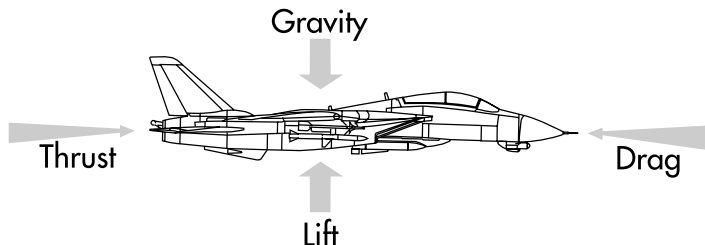
At 10 miles out, drop your throttle to 100% RPM and lower your altitude to 1,000 feet. Always be sure to follow the Waypoint Marker on the Heading Scale. You will be able to see the carrier when you get within eight miles. When you reach five miles out, drop altitude to 500 feet and reduce throttle to 60%. Your airspeed should be around 300 knots. Keep following the Waypoint Marker. At three miles, be sure your speed is below 250 knots and press **[G]** to lower your landing gear. Then lower the throttle to 50%.

Execution

Two miles out, begin to monitor your airspeed and altitude. You need to lower your speed and altitude very gradually, or you'll drop out of the sky like a rock and crash. To reduce speed, apply the brakes (**[B]**). To increase lift, thus slowing your drop in altitude, put the flaps up. To make small adjustments to the left and right, use the rudder pedals (**[<]** and **[>]**). Touch down on the first third of the carrier runway, and the arrestor cables will stop your forward motion.

Theory of Flight

An understanding of the mechanics of flight is invaluable during combat. This knowledge can help you predict what enemy aircraft will do and what maneuvers your own plane can accomplish. So how does a several ton mass of titanium and steel fly through the air? Four basic forces govern the movement of any object through air. Two of them, *thrust* and *lift*, permit a plane to fly against the other two, *drag* and *gravity*, that resist the plane's movement through air. There are other forces at work, and the details vary from situation to situation, but essentially, you need enough thrust to push air over the wings at a rate which generates sufficient lift to keep the plane in the air despite drag and the pull of gravity. This is explained in greater detail below.





Lift

When a plane moves through the air, the air must pass over, under or around the wing. Because a wing bulges upwards slightly, air traveling over the wing moves faster than air traveling under the wing. Slower air generates more pressure. Since the air under the wing is traveling slower, the pressure pushing up against the underside of the wing is greater than the pressure pushing down on top of the wing. Thus, lift is created.

To maintain level flight, a plane must generate lift exactly equal to its weight. If the lift is greater by a single pound of pressure than the plane weight, then the plane changes altitude. If the lift is less, the plane begins to sink.

Thrust

Thrust is the forward force of the plane. Created by the engines, this force pushes the plane forward, causing stationary air to flow across the wings, which induces lift. Lift, then, makes the plane stay in the air. The F/A-18 Hornet's two GE engines can produce an enormous amount of thrust at full afterburner. At an altitude of 20,000 feet or above, the Hornet is capable of reaching speeds in excess of 1000 knots.

Drag

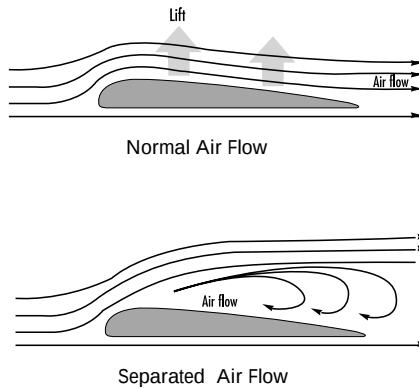
Air has mass and takes up space. Your plane moving through air is subject to the same basic forces that resist you pushing your hand through water. When the plane moves forward through air, the air must be forced above, below and around the plane. The force that resists the movement of air around the plane opposes thrust, the work of the engines. Drag, as the resistance is called, is not a function of weight. It is directly affected by how much space the forward cross section of the plane takes and by the shape of the plane. If a plane were shaped like a loaf of bread or had an irregular, bumpy surface, it would have a lot of drag. Also, it is easier to push your hand through the water leading with your fingers than with your palm. Likewise, if a plane raises or lowers its nose too far from the horizontal plane, its cross section becomes larger, thus increasing drag. As a consequence of drag, plane designers spend a great deal of time working on the shape of the plane, making it sleeker so that it cuts a smaller profile through the air.

Gravity

We all know what gravity is. We experience it every day. Gravity is the force of attraction between all objects on Earth and the Earth itself. Every object accelerates towards the center of the Earth at a rate of 32 feet per second—unless a counterbalancing, lifting force is present. Eventually, gravity always wins, but planes can cheat it for a while.

Stalling

There are a number of ways in which a plane can stop flying in a consistent manner, but the most common and important to this game is a stall. In technical terms, a stall indicates that the airflow over the top of the wing no longer follows the entire shape of the wing. Air is collecting in a pocket in front of the back edge of the wing. Thus, the downward resistance of the wing to the lifting force is unsteady. Think of the lift as your finger pushing down on a jiggling waterbed. Sometimes, you can push straight down and sometimes your finger gets pushed laterally. When this jiggling of the air forces happens to a plane, the pilot no longer has precise control of its flight. This is called a stall.



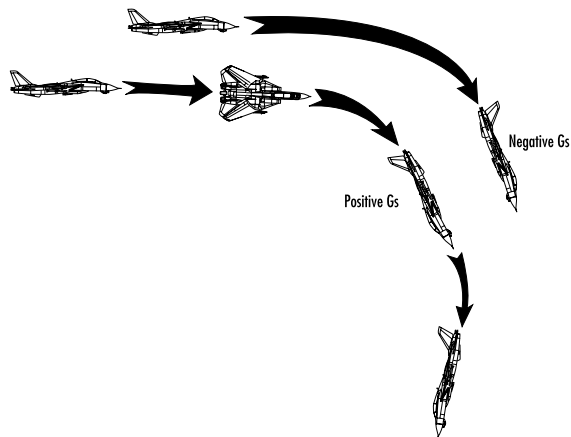
Stalls happen in a number of situations—any time that the aircraft doesn't have enough lift to sustain it. Particularly aggressive maneuvers can lead to stalls. They are most common right after takeoff or right before landing, because the plane is flying so slowly that the airflow balance above and below the wings is very delicate. To recover from a stall, point the nose of the plane downward and allow the force of gravity to stabilize the airflow. In a combat situation, however, you may not have the opportunity to dive and recover, so be careful.

Be extra careful during takeoffs and landings, because you don't have much altitude to use to regain control. When you take off, tilt your nose up a few degrees above the horizon and hold that line until you reach 2,000 feet. If you lift your plane off the runway at a high angle, you will stall.

G Forces

G force is the amount of inertia applied to an object at a given moment, on a scale based on the force of gravity. To be thorough, inertia is the force that resists a moving object changing direction. Notice that it takes more time and space to turn a car at higher speeds and that you can feel a force pulling your body in the direction in which you were initially traveling. That is inertia at work.

Your body is affected by 1G ("one gee") when you're standing still. While flying a combat jet, a pilot's body can be subjected to G forces up to eight times that of gravity when the pilot makes a very aggressive turn. Imagine the weight of your head. Now, imagine it weighs eight times as much. Now, imagine that you have to turn and find enemy planes, turn back to monitor your instruments and move a delicate flightstick back and forth, back and forth. That is combat flying, and that is hard work.



Positive Gs

Planes are designed to withstand a great amount of G force stress. Pilots are not. Whenever a pilot pulls back on the flight stick, he is “loading” positive Gs to the plane and himself. Positive forces force the pilot back into his seat and effectively make the body weigh more. In positive-G environments, blood gets forced from the head to the feet. Too much blood loss to the brain causes oxygen deprivation and, in turn, blackouts.

Flight suits limit the effect of G-loading on the pilot. Inflatable bags of air in the flight suit keep the blood from moving around too much. As the Gs climb, the flight suit naturally constricts around the pilot, which inhibits the flow of blood to the extremities. Forcing blood towards the middle of the body will keep more of it in the pilot's head. If **Blackouts/Redouts** is set to **On** in the Difficulty menu, the screen begins to go black when you overload on Gs. Release the stick to counteract these blackouts. Gravitational loads over eight times the force of gravity (8Gs) are considered dangerous. Keep it this side of eight to keep on flying.

Negative Gs

Negative Gs work in a manner opposite to positive Gs; negative Gs are caused by pushing the stick forward, which lifts the pilot off the seat. This is affectionately known as “hanging in the straps.”

The inertial forces caused by pushing the stick forward drive the blood flow in the opposite direction, so the pilot experiences too much blood in the head. In the pilot's eyes, blood vessels swell and sometimes burst—a “redout” effect to the vision. Severe negative G loading, over -3Gs, can induce redout and even temporary blindness. In situations in which you would load negative Gs, roll inverted and then perform the turn. This maneuver loads positive Gs, which you can handle better.

About the F/A-18 Hornet



The F/A-18C Hornet is a single-seater, twin-engined strike fighter flown by the U.S. Navy and Marine Corps. It was designed for both air-to-air and air-to-ground strikes, using a wide variety of modern weaponry. Its ability to perform combat duties of all types allows military tacticians unprecedented freedom in mission planning.

The prototype Hornet, the YF-17, competed in the Light Weight Fighter (LWF) program, a research exercise begun in 1972 to test the viability of cheaper, lighter and more agile fighter designs. The program was upgraded to the Air Combat Fighter program, an actual development program, when military expansion in the Eastern bloc countries demanded a new generation of fighter aircraft. After extensive competitive trials in 1974, the Navy chose the YF-17, and with further development, the YF-17 became the F/A-18 Hornet.

The F/A-18 was designed to be both reliable and easily maintainable — constantly prepared for duty on land and at sea — and in the field has a record for excellent availability. Since its introduction, the Hornet has been constantly upgraded. It now boasts advanced self-defense capabilities and carries a variety of air-to-air missiles. An impressive payload of air-to-ground weapons can be carried on the centerline, inboard or outboard stations, and the F/A-18s provided for the Hornet's Nest Special Task Force have access to the latest military weapons technology.



ADVICE FROM LIEUTENANT LODGE:

The Hornet was made to transition smoothly between air and ground objectives, Maverick. Change your weapons mode to air-to-ground with the **Tab** key when you near a target, and use the missiles and bombs that were designed for ground assault. After you've dropped your bombs, quickly switch back to air-to-air, if there are bogeys in the area.



The Hornet first flew on November 18, 1978. In 1983, it began operational service, replacing the A-7 light-attack jet and the F-4 Phantom II fighter. Today, the United States has nearly 850 Hornets and more than 1,180 F/A-18s have been delivered worldwide. The Hornet's first official combat action was in Libya in 1986, flying combat air patrol missions. Hornets also knocked out a Libyan SAM site. During Operation Desert Storm in 1990–1991, more than 200 Hornets flew continuous missions in support of the liberation of Kuwait from Iraqi occupation. A skirmish between two F/A-18s and two Iraqi MiG-21s on January 17, 1991, demonstrated the Hornet's ability to convert rapidly between fighter and ground attack modes. The F/A-18s were fully loaded for a bombing run when they encountered the MiGs. The Hornet pilots switched to fighter mode and shot down the Iraqis. They then immediately reverted to ground attack mode, hit their assigned targets and returned safely to their carrier.

Hornets saw action again in the Persian Gulf region as part of Operation Southern Watch, enforcing the no-fly zone in Iraq. F/A-18s flew combat air patrol and enemy air defense suppression over southern Iraq. Hornets also supported U.S. relief efforts in Somalia as part of Operation Restore Hope and have participated in several other military operations in recent years.



CHAPTER 9

COMBAT

Lining the enemy up in your boresight and watching that missile lock flash on your HUD is a rush like nothing else. Every fighter pilot has their favorite moves, but there are some basics that have been working since the first aces flew in World War I, and they're still working now. If you think you know everything there is to know about combat, by all means, ignore the advice in this manual. It's your funeral.



Air-to-Air Combat

The essence of one-on-one air combat maneuvering (ACM) is to get on the other guy's tail without giving him a chance to get on your tail. While the technology of modern missiles permits a pilot to score "kills" in many other situations and positions, releasing a missile on an opponent's "six" gives the missile the greatest probability of hitting its target without the target getting a chance to return fire. Although the technology has greatly improved since the aces of World War I invented the game, the rules are still essentially the same.

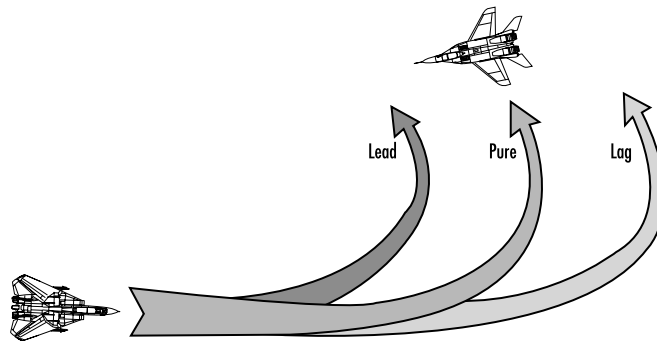
First and foremost, surprise is the key to success. Since World War I, it's estimated that 80 to 90 percent of all air-to-air kills were recorded against pilots who never saw their attackers. With the Hornet's long-range radar, it often has an advantage in this area. Assaulted by the ultra-long-range AIM-120 AMRAAM missiles, a Hornet's bandit may never know what hit him. The most vulnerable area for a surprise attack is the six o'clock position—right behind the plane. Most single-seater planes have very poor visibility in this area, and some planes have none at all! The Hornet's cockpit is placed high on the aircraft for optimum visibility; don't forget to take advantage of this design feature.

Energy States

"Speed is life." According to the Israeli Tactics Manual, a pilot should equate his rate of travel with the likelihood that he'll survive a close-quarters fight. However, this does not mean that the faster plane always wins, because the faster plane is generally the less maneuverable plane, making it a ripe target for attack. While the circumstances vary with the situation, generally you want to be at high subsonic speeds when closing to fight, somewhere between 450 and 550 knots.

Speed is not the only factor in the overall energy state of a plane. A plane's *energy state* is a combination of movement and position. It is always measured relative to the energy state of another plane. So, all other measurements being equal, a plane traveling at 600 knots has a higher energy state than a plane traveling at 400 knots. Likewise, all other things being equal, a plane traveling at 20,000 feet has a higher energy state than a plane at 3,000 feet, because the higher plane can convert higher position into speed by diving for the other plane. Turns and climbs bleed energy from a plane, so a pilot must be aware of his current energy state and the rate of change in his energy state. It may sound complicated now, but experienced pilots have an intuitive feeling for how their energy compares with their opponents' energy, and they constantly seek ways to regain or extend the advantage.

Once engaged, a pilot must maintain the highest possible energy state; a slow target is a dead duck. During a fight, a pilot can be forced to trade energy for better position. Heavy maneuvering quickly bleeds energy, making a last-second missile dodge, well, your last second. So, in tactics, keep your moves simple and keep an eye on your airspeed.



Pursuit angles

Dogfighting is as much a problem in physics as it is a challenge of dexterity, intuition and physical conditioning. Our discussion of the physics here is greatly simplified. The following sections give three basic ways of pursuing a bandit in one-on-one combat: lead, lag and pure. Each method refers to the direction of the attacker's plane relative to the direction of the defender.

Lead

In a lead pursuit, an attacker is trying to “cut off” the defender. He is turning inside the defender's turn. This tactic is often used when the defender has a higher energy state (better speed or position) than the attacker. For the attacker, this tactic is easy to control. To control a lead intercept, keep the defender's plane stationary in the cockpit window. If the defender's plane seems to climb towards the top of the canopy, you're going too fast. If the defender drifts down towards the nose of the plane, the attacker must throttle up. Sometimes, though, the defending plane gets lost below the nose of the attacker's plane. While you may get away with it in some cases, making “blind” lead intercepts can result in the defender peeling off to break the engagement or, worse, a collision between the two planes.

If you as the defender have more energy than the attacker, break off the turn and accelerate away. If you're much slower, try to perform a quick turn to engage the attacker immediately.

Lag

A lag pursuit is the opposite of a lead pursuit and is also generally used when the attacking plane has a greater energy state than the defending plane. In a lag, the attacker's turn carries outside of the defender's turn. When the attacker may overshoot the defender, the attacker can enter a lag pursuit to maintain his current energy and position outside the radius of the defender's turn. The maneuver maintains the speed advantage while keeping the attacker in the rear quarter of the defender's plane.



A lag has the added advantage of placing the attacker at a very dangerous position relative to the defender: behind and below the plane, where the attacker is invisible. If the defender attempts to accelerate through the turn, the attacker can match the acceleration without loading the same Gs as the defender. To start a lag pursuit, aim the nose of your plane behind the tail of the defender. Hold this position until the turn is completed. Nose up and go for the shot.

To defend against a lag pursuer, try to change the attacker's speed, turn and loaded Gs. A lag is a great attacking position, but it is difficult to maintain the position. And when the attacker is dialed into the tail of the defender, the attacker is very vulnerable to attack from a second plane.

Pure

A pure pursuer drives straight at the tail of the defender, following his every move. This move puts the attacker's plane in a very difficult position to see for the defender; the attacker's profile is minimized from the defender's point of view. While a well-executed pure pursuit closes the distance between defender and attacker, it does not, in itself, create a better opportunity down the line. The pure pursuit is a good tactic if you're loaded with heat-seekers, but it's bad for radar-guided homing missiles, like the Sparrow, which must be illuminated all the way to target. In close quarters, the radar might lose track of the defender because of his vigorous efforts to break the pursuit. To execute a pure pursuit, get on your opponent's tail and hang on.

One defense against the pure pursuit is to put the brakes on—the Maverick move that may cause the attacker to overshoot your plane. However, it might just make the final shot even easier.



ADVICE FROM LIEUTENANT LODGE:

Maverick, when you're up against heavily armored ground targets, try coming in at different and unexpected angles. Be sure to cut your throttle to give yourself extra time to adjust your aim, and aim low at the base of ground targets to increase your firing accuracy.

Multiple Opponents

As soon as the tactical encounter deviates from a one-on-one scenario, the tactics become much more complicated. 1-vs.-2, 1-vs.-many, 2-vs.-1, 3-vs.-3: each of these combinations has a different set of tactics. Discussing them all here would be too lengthy, but the *Fighting with a Wingman* section, starting on page 72, explains some basics of air combat in teams.

Air-to-Ground Combat

There are basically four methods of attack when assaulting ground targets: strafing, dropping bombs on them, firing guided missiles at them and firing missiles through the gunsight at them. Each of these methods is discussed in detail below.

Strafing

Strafing is the fine art of flying low enough to the ground to target buildings and vehicles in your sights without being shot down by enemy missile and gunfire. Choose a heading that allows you to come up from behind the vehicles whenever possible, to avoid being met by heavy fire, and one which also allows you to find the greatest number of targets in your gunsights as you make your run. Center your targets in the target reticle and press the **[Spacebar]** repeatedly to fire several rounds of ammunition at your targets, then bank up and away from enemy retaliatory fire.

Bombs

Your Hornet can be equipped with a variety of bombs, which can be dropped from a safe altitude onto unsuspecting enemy forces below. When you ready a bomb by cycling through your ordnance with the **[X]** key (be sure the air-to-ground ordnance is selected by pressing **[Tab]**), a line descends from the bottom of your HUD's Targeting Reticle to the ground. This is the projected area of impact for the selected bomb. Unless you are flying very low to the ground, you generally cannot see the bottom of the line from the normal Cockpit view. Cycle through the Standard Views to the HUD Only view by pressing the **[F8]** key. You should now be able to see the point of impact for your bombs. When the line runs over your target, press the **[Control]** key to drop the bomb.

Guided Missiles

In addition to the bombs, the F/A-18 also has available two types of air-to-ground missiles: Mavericks and HARMs. The Maverick can achieve locks on ground vehicles, and using it is very simple. Select one of these missiles with the **[X]** key, then make the desired vehicle the target by pressing **[N]** when the target is in your gunsights or **[Z]** to cycle through the available targets. When your missile guidance system achieves a lock on the chosen target, the **SHOOT** message appears on the HUD. Press the **[Control]** key to fire the missiles. Note that Mavericks can never achieve a lock on buildings or installations; they must be fired as a boresight missile for those targets. HARMs can lock on to SAM sites and Radar Jamming Sites or can be fired as boresight missiles.

Boresight Missiles

Lastly, you can launch air-to-air missiles at ground targets or discharge your air-to-ground missiles before you achieve a lock by firing the missiles through the gunsight. To do this, select the desired missile, line the chosen target up in your sights, press **[Shift]** and the **[Control]** key and hope your eye was good. The missiles will head for whatever point was centered in the targeting reticle at the time of launch. With the exception of the HARM, buildings and installations can only be hit by missiles that are launched in this manner.

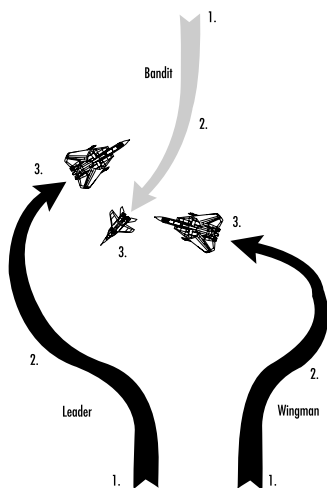


Fighting with a Wingman

As a member of a team, you will occasionally be paired up with a wingman. In the Navy, a two-plane group is called a “section.” The roles in a section are divided between the “flight leader,” the pilot in charge, and his “wingman.” The flight leader is primarily responsible for forward navigation and engaging the enemy. The wingman must support the leader's position by defending his tail from a surprise attack. Who defends the tail of the wingman? Some formations offer reasonable protection of the wingman's tail, but, as the saying goes, it is better to lead than to follow, because the formation is the flight leader's call.

Pressing [7] orders your wingman to fire his weapons at the closest visible target. If your wingman is currently engaged with a target, pressing [8] orders him to disengage and return to the ready formation. However if your wingman is not in combat with a bogey, pressing [8] orders him to attack one if there are any in range.

You can also direct your wingman to perform the bracket maneuver. This basic tactic can be used against one or two opponents—although someone better keep track of that second plane. The bracket maneuver assumes that the opposing plane groups are flying straight for each other at the start, with the Hornets in a roughly side-by-side formation.



When running a bracket, the wingman breaks early and away to one side of the bandit to circle for a shot. The flight leader veers off in the other direction, and between them they attempt to pinch the defender. The wingman is responsible for defending the flight lead's position. You can order a wingman to perform a bracket to the left or to the right by pressing the [9] and [0] keys, respectively. The wingman veers in the indicated direction.

F/A-18 Hornet Weaponry

The F/A-18's provided for the Hornet's Nest Special Task Force are equipped with the latest in military technology. In addition to its standard 20mm cannon, a variety of air-to-air and air-to ground missiles are available, each with strengths and weaknesses which make it appropriate for different combat situations.

Cannon Ammunition

The 20mm Cannon is standard equipment on your aircraft and is used for close-quarters dogfighting. The range and effectiveness of the Cannon depends a great deal on the ammunition type and target selection.

Rabbit

These shells don't do much in the way of damage. They have a moderate range, effective to within approximately one mile, and the highest rate of fire of any ammunition, which makes it easier to hit other aircraft. If you expect to go up against a number of lightly armored opponents, this is the shell type to pick. You have enough ammo (1,800 rounds) to shoot at everything in existence. However, these light rounds won't do much more than sting more heavily protected targets.

20mm

These rounds, standard for the Cannon, have a slower firing rate than the Rabbit and are in far less generous supply (600 rounds), but they pack a considerably greater punch. They have the longest range of all the Cannon shells, almost two miles, and they are very useful for strafing ground units (you can easily kill most vehicles in one pass), as well as for shooting up buildings or structures.

Bull

This is a moderate range shell, far slower and much heavier than Rabbit shells and a bit stronger than the 20mm rounds. They have only a limited ammo supply (400 rounds), but they are very useful for quickly taking out heavily armored ground targets, such as ships and installations.

Explosive

Explosive rounds do the most damage of all ammunition, but have the least ammo (300 rounds) and a limited range, less than a mile. They are less than effective against other high-speed aircraft; the low firing rate makes it feasible for the fast and lucky pilots to slip through a stream of bullets without getting hit, or only getting shot once or twice. However, it kills helicopters easily and is extremely useful against virtually all other targets. These shells are best saved for missions with hard to destroy objectives; a good tactic is to use them in tandem with missile fire to eliminate the target as quickly as possible.



Air-to-Air Ordnance

Air-to-air ordnance consists of various guided missiles, which can be a deadly tool against other aircraft. With their long ranges and lock-on capability, all you have to do to knock a bogey out of the air is see them and fire. However, missiles can be fooled with countermeasures, and their effectiveness greatly varies depending on ordnance type. Keep in mind that these missiles can also be used against ground units, which are almost totally unable to avoid missiles of any type. Also, missiles that are fired through the boresight can be very useful for taking out large objectives (buildings, missile launchers, etc.) at extreme range without the risk of flying into enemy defenses.

Dart



This heat-seeking missile doesn't have great range (only five miles) and isn't terribly accurate, but you can carry a great many of them at one time. Pick these for missions when you anticipate having a lot of small stuff to blow up. Enemy helicopters make fine targets for the Dart.

Wolf



This short-range radar-guided missile is larger than the Dart. It is also faster and more powerful, but comes in a more limited supply.

Sparrow



This extremely long-range missile has a working range of thirty miles. It is good for hitting distant targets, but because it relies on the Hornet's radar it isn't as accurate or nearly as hard-hitting as the AIM-120.

Sidewinder



A medium range heat-seeking missile that moves incredibly fast. It can drop targets eight or nine miles away and is incredibly maneuverable. Nicknamed the “Silver Bullet” by air crews, the Sidewinder is one of the most successful missiles ever.

AIM-120



An extremely long range radar-guided missile. It has an effective range of forty miles, is highly accurate, travels at very high speeds and packs an amazing punch. However, since supplies of this type of missile are limited, it's best to save them for destroying dangerous opponents before they realize you're even there.

Starflower



A medium range heat-seeking missile that splits, when nearing a target, into a set of “baby missiles” that go in all directions and explode. It can be very useful if you have a group of enemies in a small area; think of it as an aerial cluster bomb.

Air-to-Ground Ordnance

Air-to-ground ordnance consists of a variety of guided missiles and free-fall bombs. All of these weapons deliver a devastating amount of damage, allowing you to wreak havoc on ground forces.

HARM



The High speed Anti-Radiation Missile specializes in locking-on and taking out radar systems and SAM sites. It cannot lock on to ground vehicles and has an effective range of ten miles. It can be used as a boresight missile (press **Shift** and fire the missile), against vehicles and other ground targets.



Maverick



A medium range heat-seeking air-to-ground missile that packs more punch than a HARM missile and is somewhat more accurate. They do quite a bit of damage and are good against moving targets such as ships and vehicles.

Sunburst Cluster Bomb



This is a free-falling, surface version of the Starflower missile. When fired, the bomb breaks into several pieces, impacting around its targeting point in a wide area. It's good for clearing out large, concentrated groups of ground units.

GBU-15 Glide Bomb



This is a TV-guided, free-falling bomb that deals out a tremendous force in a small area. The GBU-15 is good against tough individual buildings or concentrated ground forces.

Paveway Glide Bomb



The laser-guided free-falling Paveway Glide Bomb affects a more dispersed area than the GBU-15, but doesn't have quite the same armor piercing power. The Paveway is good against groups of average (not hardened) buildings and more spread-out groups of ground units.

Napalm Tank



This free-falling bomb doesn't have the same incredible damage potential as some of the others, but the blast area of a Napalm Tank covers a wider area.

Possible Enemy Targets

Other Aircraft

Both your team and the enemy possess numerous aircraft, which you might encounter during various missions.

F/A-18



The multi-purpose Hornet serves in the military forces of several nations.

F/A-18 Fury



This hopped-up version of the Hornet has more armor and more speed than standard models. That's a deadly combination; watch yourself if you have to mix it up in the air with these prototypes, and be grateful if you have them on your side.

MiG-29



Similar to the F/A-18, the MiG-29 was designed for counter-air and attack missions. It's incredibly fast and agile and carries a full complement of anti-air and anti-ground missiles, along with several types of bombs. With a good pilot at the helm, this bird is a worthy adversary.



F-7



A cobbled-together fighter jet, produced from MiG-21s and spare parts by the Chinese and shipped all over the world. Don't underestimate this hunk of junk, though. While it's not as maneuverable as the MiG-29, its top speed is over Mach 2, and it can be equipped with nasty anti-air missiles.

Su-25



The Su-25 can withstand heavy punishment over the battlefield. It was designed to fly low to support ground forces and destroy opposing ground forces. While its heavy air-to-ground armaments make it more of a threat to ground units under your protection, the Su-25 is certainly nothing to take lightly. It can be a pain in the butt to knock out of the sky, with its fast loading cannons peppering you the whole time.

B-52



After more than 40 years of service, the B-52 is still flying for the United States. While it's well shielded by a power tail turret cannon, nevertheless, this old mother has to be well protected. Enemy forces will attempt to shoot it down quickly, before it dumps its huge complement of cluster bombs on their forces and ground installations.

Yak-38



A Russian fighter-bomber, capable of vertical takeoff and landing, it is primarily deployed from small aircraft carriers. Similar to the Harrier, this jet holds a variety of deadly air-to-air and air-to-ground ordnance and is equally effective against you and your ground forces.

KA-50



The KA-50 Hokum is the latest combat helicopter of the Russian armed forces. Special cockpit protection and high maneuverability make it deadly in a firefight. It only seats one person, so there's more room to pack in the artillery, mostly anti-air missiles. Take this helo out quickly, before it takes you out!

Mi-28



The Mi-28 Commanche is a two-seater combat helicopter, heavily armored to withstand normal ammunition strikes. It's not especially fast in the air, but its rapid firing ordnance more than makes up the lack of airspeed.

Other Forces

Both enemies and allies use tanks, ships and other surface vehicles to further their causes.

Ground Units

T-52 and T-72



Small but powerful, light tanks make their way across the landscape, engaging with opposing ground forces and targeting their bases. Be wary when making a strike on a T-52, as these vehicles have extremely long-range cannons. The larger T-72 tanks can withstand more damage than their smaller counterparts, and they carry heavier artillery. Be careful about closing on these armored monsters. Their cannons can cause you significant damage.

SA-9 Mobile SAM Launcher and SA-X Missile Launcher



Two varieties of mobile SAM launchers carry different types of missiles. Their goal is to pick jets and helicopters out of the skies. The SA-9 is the more deadly of the two. It fires better missiles with more frequency.



Supply Truck



Supply trucks make deliveries to bases and other structures. By destroying enemy trucks you can weaken their forces. Supply trucks are unarmed and relatively easy to annihilate.

Sea Forces

Aircraft Carrier



Home, sweet home... a lot of the time, you can land on allied aircraft carriers to refuel and rearm. They aren't really equipped to be attack vessels, but watch for anti-aircraft missiles if you are in close proximity to an enemy carrier.

Destroyer

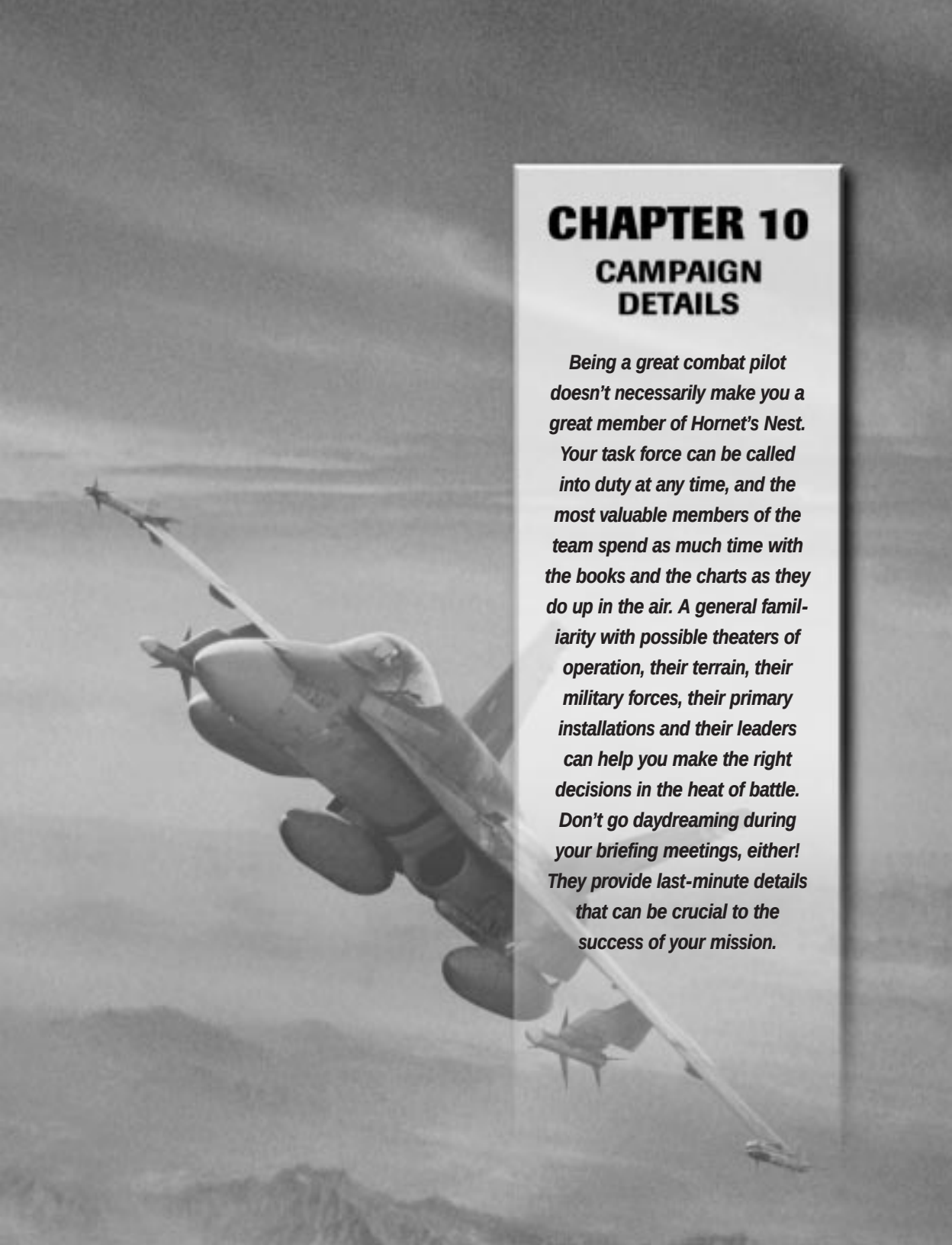


These large vessels are difficult to take out and carry a variety of anti-air missiles and artillery.

Sea Cruiser



Navy ships meant for crossing the seas to take on other nautical forces and attack enemy harbors. The Chinese have a faster, better armored version of this vessel, but both are heavily armed, easily able to take out a careless Hornet pilot.



CHAPTER 10

CAMPAIGN DETAILS

Being a great combat pilot doesn't necessarily make you a great member of Hornet's Nest.

Your task force can be called into duty at any time, and the most valuable members of the team spend as much time with the books and the charts as they do up in the air. A general familiarity with possible theaters of operation, their terrain, their military forces, their primary installations and their leaders can help you make the right decisions in the heat of battle. Don't go daydreaming during your briefing meetings, either! They provide last-minute details that can be crucial to the success of your mission.



Campaign 1: Siberia



Campaign Description

The Cold War is over, but a chilling reminder remains active in snowbound Siberia. A former Soviet general and his private army have secured a section of this northern wasteland. Reports from surrounding areas indicate that a General Martikov intends to attempt a military takeover of the Russian government. The Russians have called upon U.S. forces to help them defeat the General's army.

Aircraft and Allies

Standard F/A-18 Hornets are your assigned aircraft for this campaign. You will be joined in your attack by light and heavy tanks, helicopters and an allied fleet, including the U.S.S. Nimitz.

Enemies

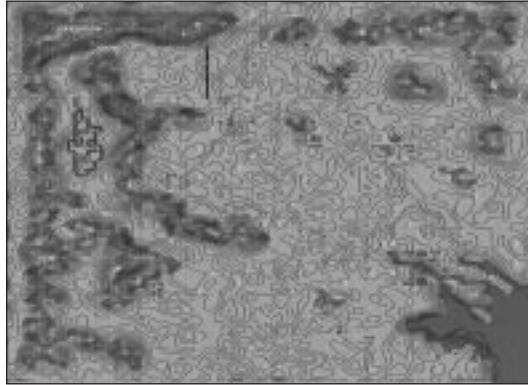
You are likely to face MiG-29s, Su-25s, Yak-38s and KA-50 Hokum helicopters in the air, while tanks and other vehicles defend the ground. Several Sea Cruisers are under the General's command and control the entrances to enemy-held harbors.



ADVICE FROM LIEUTENANT LODGE:

Hey Maverick, your first mission for Hornet's Nest is really a piece of cake. If you're having trouble though, keep a couple things in mind: you want to get to the battle zone as quickly as possible and you want to focus on destroying those ships above all else once you get there. A couple missiles each should do the trick.

Campaign 2: Iraq



Campaign Description

Saddam Hussein is missing and presumed dead. Classified intelligence reports suggest that a militant religious faction, the Ba'al Kistan, has killed him and seized control of the Iraqi government. The Kistan are stepping up Iraq's chemical warfare program and, most importantly, are continuing work on an HVMA Ballistic Delivery System. This project, essentially an enormous gun capable of delivering shells (nuclear, conventional or biological) to almost anywhere in Western Europe, was brought to a halt several years ago by intense NATO pressure. The Kistan will show their strength to the world with a sweeping wave of destructive holy fire.

It appears that General Martikov may have sold advanced Russian military technology to Iraq to finance his coup attempt, which has the U.S. and other NATO leaders worried. A preemptive strike at Iraq has been planned to stop these militant fanatics before they can finish their weapon of mass destruction. Iran has voiced stiff protest to this "unprovoked" attack on their neighbor and, while remaining neutral, has threatened to shoot down any aircraft that invade Iranian airspace.

Aircraft and Allies

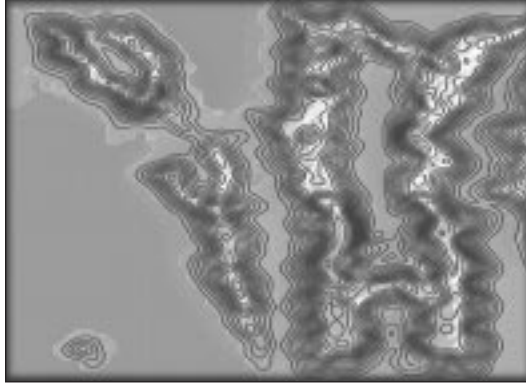
F/A-18 Hornets will be supporting a massive ground force, mostly consisting of tank platoons and motorized infantry. The U.S. has not made any formal decrees towards Iraq; thus Hornet's Nest and the Nimitz will find themselves lightly defended in the Gulf.

Enemies

You are likely to face a wide range of enemy aircraft, including MiG-29s, Su-25s, F-7s and both KA-50 Hokum and Mi-28 helicopters. Tanks, lines of supply trucks and mobile SAM launchers defend Iraq.



Campaign 3: Colombia



Campaign Description

Terrorists have blown up the Panama Canal! The most likely suspect is the CGSB, a coalition of several terrorist groups. They are supported by the Cali drug cartel. Several high-ranking politicians and military leaders in Nicaragua, Ecuador, Panama and Colombia are believed to be CGSB members. After the mysterious disappearance of some non-allied Colombian politicians, the Colombian government pronounced public support for the CGSB and has ordered all U.S. citizens and diplomats to leave the country.

Intelligence reports suggest that the CGSB has been methodically and covertly increasing the size of their forces. Cuban and Chinese collaboration is suspected, potentially giving the CGSB access to modern fighter jets, missiles and information on American military weaknesses. The U.S. government has sent the Hornet's Nest to the area, in case this terrorist group tries to take further action.

Aircraft and Allies

The U.S. is fully prepared to defend their Central American interests. Your F/A-18 Hornets and the Nimitz will be joined by heavy tanks, a Destroyer and Sea Cruisers.

Enemies

With their considerable backing, the CGSB has access to a variety of modern aircraft, including F-7s and both Mi-28 and Ka-50 helicopters. Despite the mountainous terrain, tanks and other mobile artillery pose a threat, and enemy Sea Cruisers command the coastal waters.

CHAPTER 11

REFERENCE





GLOSSARY

Afterburner – Thrust above normal military power, achieved by spraying fuel onto an already burning mixture of fuel and air.

Airspeed – The velocity of the aircraft relative to the surrounding air.

Angle of Attack (AOA) – Angle of the wing to the flight path of the aircraft; determines the amount of wing lift at a given airspeed.

Arresting gear – The four cables stretched perpendicular to the carrier deck. A pilot must catch his tailhook on one of these cables to stop or “trap” his plane, the third one being optimal.

Bandit – An aircraft that has been positively identified as an enemy.

Bingo – Radio call for the fuel state at which a pilot must return to the carrier.

Blast door – A heavy door elevated from the flight deck to absorb the heat of a plane's engines prior to a catapult launch.

Bogey – An unidentified aircraft.

Callsign – A codename for a fighter pilot. “Maverick” and “Falcon” are examples of callsigns.

Catapult – Also called the “cat.” A steam piston embedded in the deck of the carrier. The catapult literally throws planes off the carrier.

Chaff – Tiny strips of metal that are released by airplanes to foil enemy radar. The radar homes in on the chaff instead of the aircraft. A defense against radar-guided missile attacks.

CIWS – Pronounced, “Sea-Whiz,” it's the Phalanx Gatling gun on ships that shoots depleted uranium bullets at targets at very close range.

Deck – 1) Takeoff and landing surface of an aircraft carrier, short for “flight deck.” 2) An altitude that can't be broken; the lowest allowable altitude; short for “hard deck.”

Drag – Air resistance to the movement of the plane.

Flare – Hot phosphorous flares released by an aircraft which are targeted by a heat-seeking missile. The missile might home in on the flare instead of the aircraft's engines.

Fox One! – Radio call when an AIM-7 Sparrow missile is launched.

Fox Two! – Radio call when an AIM-9 Sidewinder missile is launched.

G – Gravitational force. The inertial force being applied to the pilot and his plane.

Hook – Short for “tailhook;” an aircraft lowers its tailhook for a carrier landing, catching one of the arresting cables.

HUD – Head-Up Display. A transparent projection of important data such as heading, air speed and altitude onto the forward windscreen in the cockpit.

IFF – Identify Friend or Foe. An automated electronic system for determining the nationality of an unidentified plane.

ILS – Instrument Landing System. An electronic system to assist pilots in landing in poor conditions.

Ingress – The flight route to the target. The flight route from the target is the “egress.”

Jink – A defensive maneuver against gun and missile attacks in which the pilot jiggles his flightstick back and forth through a series of high-G turns to shake off the attacker.

Knot – Nautical miles (6,076 feet) per hour.

Mach – Measurement unit equal to the speed of sound at sea level.

MiG – Mikoyan/Gurevich. A Soviet aircraft manufacturer.

Military power – Full throttle; throttle at maximum setting without using afterburner.

RTB – Short for “Return to base” where “base” means the origin of the flight, including an aircraft carrier.

SAM – Surface-to-Air Missile.

Six o'clock – The zone directly behind a plane. The rear.

Split-S – An air combat maneuver in which a pilot rolls his plane inverted through a turn.

Spoof – Slang term for “fooling” an enemy missile with flares or chaff.

Strafe – To fire the machine gun at a target by laying a line of bullets across it.

Strike – A bombing mission or target.

Strike group – A flight of planes assigned to bombing a target.

Tally – Radio chatter to indicate that an enemy plane has been visually identified

Waypoint – Locations computed by the onboard navigational computer that provide a mission route.

Winchester – Radio call for being out of missiles. A pilot will say, “I’m winchester.”

Yak – Short for Yakovlev, a Soviet aircraft design bureau. In the game, the only Yak is the Yak-38.

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 David Kimber, Randy Lee, Bill Schmidt, Ken Schmidt
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 P.R. Kathy Sanguinetti
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TECHNICAL ASSISTANCE

Troubleshooting

If you experience technical difficulties installing, starting or playing *Top Gun: Hornet's Nest*, first check to see that your system meets the minimum system requirements and that you have properly followed the instructions for *Installing* and *Starting the Game* in the sections beginning on page 3. If you are still having trouble, consult the README.TXT file located in your game directory. This contains *Troubleshooting Information* that may aid you. If problems persist, please contact Customer Support for further assistance.

DirectX 6

Top Gun: Hornet's Nest utilizes DirectX 6 to power some of its game functions. However, DirectX 6 is not yet certified as compatible for all hardware. If you are having problems, you may want to use the **Dxdiag** tool found in the **Program Files\DirectX** folder. Open this file and select the tab marked **DirectX Drivers** to see whether or not your specific hardware components are certified. If they are not certified, either download the newest version of DirectX 6 from Microsoft at <http://www.microsoft.com/directx/download.asp> or contact your hardware manufacturer for the newest drivers.

Throttle Keys

If your throttle keys are not working, this is because *Top Gun: Hornet's Nest* has detected that your joystick has its own throttle control. You can reconfigure your throttle to be controlled by the keyboard from the Configure Controls Screen described on page 18.

HASBRO INTERACTIVE'S WEB SITES

Hasbro Interactive has exciting, full and active web sites dedicated to ensure you get the most out of your new games. You can visit us at:

<http://www.hasbro-interactive.com>

Visit and you will discover that Hasbro Interactive web sites contain:

- Technical Support
 - Hints and Tips
 - Player Contact Information
 - Software Upgrades
 - Demos
 - Interaction
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 - Competitions
 - Player Pyramids
 - Chat and Community
 - Downloadable Themes
- and much more.

We are constantly updating our web sites so stop by and visit us frequently. With events and new additions planned, you won't want to miss out.



TECHNICAL SUPPORT

If you have problems and require assistance you can contact our Technical Support Hotline:

Phone: +44 (0) 1454 893900

Hours of operation: 0900-1730 GMT/BST, Monday to Friday

Fax: +44 (0) 1454 894296

Note: Phoning this number costs the same as a standard rate call no matter where you call from in the UK. If you do telephone the Technical Support line, if possible please be sitting in-front of your computer and have a pen and paper at the ready. Before contacting our Technical Support Hotline, please try to have the following information ready so that we may help you more efficiently:

The name of the game, the make & model of your computer, processor and speed, peripherals, graphics card, version of Windows, amount of memory installed, the exact error reported (if any) and version numbers of Direct X drivers.

EMAIL

Alternatively you can email our Technical Support operators:

uksupport@hiuk.com

WEBSITE

<http://www.hasbrointeractive.com>

To ensure a prompt reply please summarise your issues as concisely as you can, giving details, as above, of the game, the problem or error, any circumstances that you feel relevant and your particular computer system. We will endeavour to return your mail within the day.

All letters should be addressed to:

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BS37 6BN

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