



The Air War in Vietnam

IBM PC VERSION

Spectrum HoloByte™

A WORD ABOUT THIS GAME



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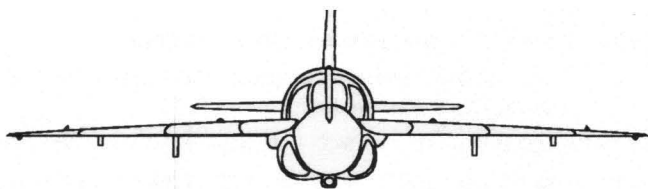
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GEnie: HOLOP
PC-Link: SPECTRU

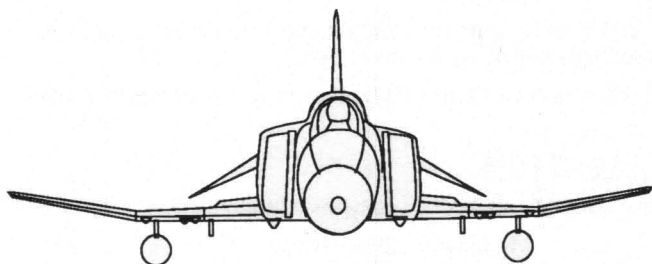
Phillip G. Adam, President
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FLIGHT [REDACTED] OF THE [REDACTED] INTRUDER™

**SPECIAL INSTALLATION INSTRUCTIONS
AND ADDENDUM**



**PERSONNEL AND COMMUNICATIONS
MANUAL**

FINAL BRIEFING ON INSTALLATION

To install the CGA/Hercules version to a hard drive:

- ✦ Copy all the files from either the 360K Disk 1 for CGA or the 720K Disk for CGA to a subdirectory.

To install the EGA or VGA version of this game on your hard disk:

- ✦ Insert the 1.2MB Disk or the 720K Disk 1 for EGA/VGA into the floppy drive.
- ✦ Change to the drive and directory where you want to install the game. Be sure to go to the exact directory you want the game to reside in. For example, If you have a GAMES directory, then type C: and then CD\GAMES. Of course, you can just install it directly on drive C.
- ✦ Type A: INSTALL at the C>. **You cannot run the install program from drive A.**
- ✦ Follow the instructions on your screen to select the appropriate source drive, graphics mode and destination path. When finished, the installation will create a subdirectory called INTRUDER on the drive and directory you have indicated.

PLAYING FROM THE FLOPPIES

To play the CGA or Hercules version from the disks:

- ✦ Insert the 360K Disk 1 for CGA or the 720K Disk for CGA into a drive and type INTRUDER or HINTRUDER for Hercules. If you are playing from 360K disks, you need to swap disks or use two floppy drives.

To play the EGA version from the disks:

- ✦ Insert the 1.2MB Disk or the 720K Disk 1 for EGA/VGA into the appropriate drive.
- ✦ Type INTRUDER. If you are playing from one 3½" disk drive, you will be prompted to insert Disk 2 midway through loading. You can also play the game from two 3½" disk drives

You cannot play the VGA version from the disks provided. You must install it on your hard drive or other high-density media; see above

If you need a format other than those provided, please see the enclosed coupon.

SOUND INSTALLATION

On the **File Menu** you have the choice of three types of sound.

AdLib	Minimum 12MHz 80286
Digitized	Minimum 12MHz 80286
PC Tone	Anything else

For the AdLib sound, use amplified speakers to hear the sound effects clearly. The CGA/Hercules version supports only PC Tone sound. If you want no sound at all, select the "All Sound Off" option from the **Control Menu**. [S] toggles through the **Control Menu** sound options at any time.

STARTING THE GAME

Correction for Page 12: on the Duty Roster Screen, you must enter your callsign before entering your name.

PROBLEMS WITH INSTALLATION?

If you are having problems running Flight of the Intruder, please try the following.

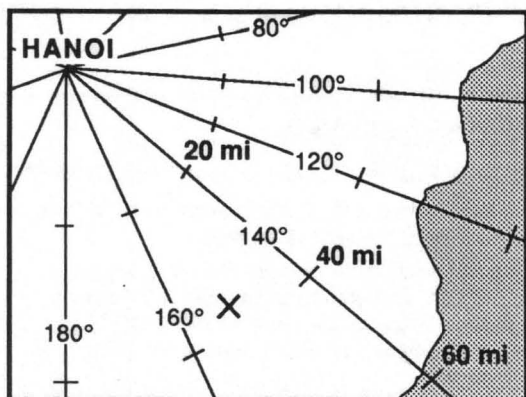
1. You'll need to run CHKDSK, a DOS utility, first to determine how much free RAM you have available. Type CHKDSK at the DOS prompt.
2. The bottom two lines on your screen will show the total memory in your computer and the amount of memory available to the game. The number on the last line needs to be at least 540,000 in order for Flight Of The Intruder to run. Otherwise, when you type INTRUDER the game will simply return to the DOS prompt.
3. Remember that RAM-resident programs, menu programs, DOS shells, TSRs (Terminate-and-Stay-Resident), print spoolers, buffers, mouse drivers, network drivers, and other programs can use up part of your total available RAM. If you do not have at least 540K free RAM, you need to do **one** of the following:
 - a. Create a bootable floppy disk by inserting a blank disk in drive A and typing `FORMAT A: /S`. (FORMAT is another DOS utility program). This makes a clean system disk. If you want to use your mouse, you must install the mouse driver to this system disk. To use the new disk, turn your machine off and reboot with the new system disk in drive A. Then run Flight of the Intruder by going to the drive you have the game on and typing INTRUDER.
 - OR**
 - b. Rename your AUTOEXEC.BAT and CONFIG.SYS files to other names. For example, type `RENAME AUTOEXEC.BAT AUTOEXEC.BAK` and `RENAME CONFIG.SYS CONFIG.BAK`. Reboot your machine, and run CHKDSK again. If you have at least 540K free RAM, try running Flight of the Intruder by typing INTRUDER on the appropriate drive. Remember to rename the AUTOEXEC.BAT and CONFIG.SYS files back to their original names when you are through playing.

Extra Credit

AdLib and Digitized Sound: Lars Norpchen

Playtesters: Tom "Kansas City" Basham, Kasey "Wolverine" Chang, Anthony "Eraserhead" Chiang, Steve "Auger" Edwards, Mark "Endo" Estephanian, Bob "Extractor" Gong-Guy, Paul "Eagle-Eye" Jepson, Peter "Deathwish" Koning, Cheryl "Dr. Mabuse" Mathison, Karl "Crooked Cat" Maurer, Mike "Mongoose" Nebeker, Marisa "No. 19" Ong, Steve "White Knight" Perrin, Steve "Kingfish" Shirvanian, Peter "Bandit" Ward, Mike "Moondawg" Weksler and Bob "Phoenix" Wentzel

USING THE MAP



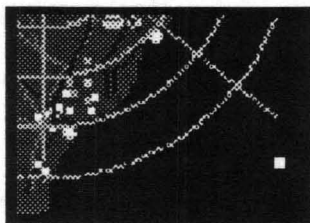
Enclosed with this game is a copy of an actual mission map used by an Air Force pilot over Vietnam. The objectives and map in this game were based on the original of this map.

Important on this map is the northern Bull's-Eye, centered on Hanoi. See page 44 for a full explanation of how this is used. In the illustration to the left, the "x," which represents a Bandit, is 153 degrees from Hanoi and

about 38 miles away (each tick mark is 20 nautical miles). Red Crown would call this as "Bandit, 153 at 38."

Remember that messages from Red Crown give you the **absolute** compass bearing of the bandit as reckoned from Bull's-Eye. Do not confuse this with the bearing of your target or waypoint as given on your radar screen (page 107). The bearing on your screen is a relative bearing. **It assumes the current heading of your plane is always 0° (zero)** and tells you how many degrees the bearing to the target/waypoint is away from that heading.

For example, if you are 50 miles from Hanoi in an F-4 and heading straight for Hanoi on the 153° line, the above bandit will show up on your radar at 0° and 12 miles. Alternately, if you are Jake Grafton flying 70 miles directly east of Hanoi and proceeding toward your waypoint over that city, the radar screen shows a bearing of 0° (instead of your compass bearing of 270°) and a distance of 70 miles to your waypoint.



Similarly, the bearings to your waypoints and the carrier (see A19) are bearings relative to your plane. If you change the waypoint to "Carrier," the bearing information is telling you how far off a direct line to the carrier you are.

For example, if the "Carrier" shows as having a bearing of 90°, it is directly to your right. If you bank right, the bearing will change until it reaches 0°, which means the bearing to the carrier is the same as your aircraft's heading. If you follow that line of direction without deviation, you will eventually get a bearing reading of 180° because you have flown over the carrier and it is now behind you.

AIRCREW PERSONNEL

In every mission, you get to pick the wing leader air crew that will actually fly and fight the mission for you. The name and callsign you chose at the start of the mission still gets the credit for the mission if you fly the plane; the team selected for the mission determines how well the planes in that wing will operate when in *automatic* mode. Each team starts with expertise in certain aspects of their mission; it is up to you to select the best team for the mission indicated, using the guidelines given below. The skills of the other aircrew in the section are the same as whichever crew is selected.

If you are in the cockpit when the mission is being flown, then your success or failure will affect the ratings of the air crew for future missions.

Assigning Plane Crews

- ✦ From the Briefing Screen, press **[A]** to go to the Aircraft Screen.
- ✦ Press **[C]** for Crews to get the list of available pilots. The lists will be different depending on whether you need a crew for the A-6 or for the F-4. Look over the list and find a pilot team that has the best ratings for their mission. Remember that the ratings given are for the team at their best. If they have had several recent sorties and have a high Fatigue rating, their actual ratings may be far less than those in their personnel record.
- ✦ Once you have decided which crew you want, press **[Enter]** to get back to the Aircraft Screen and then **[I]** to go to the Information Screen. Select the Crew line with **[↑]** and **[↓]** and use **[←]** and **[→]** to move to the crew you want. Select that crew by pressing **[Enter]**.

Replacing Pilot Teams

If a plane is shot down and the pilot lost, the crews will be replaced by a simple entry of New Guys (A), New Guys (B), etc.

Meanings of Ratings Categories

- SORTIES** — how many missions the pilot has been on. The more sorties he has been on the more likely he is to survive a mission but the worse his Fatigue rating.
- FATI. (Fatigue)** — current fatigue state. If they have flown several missions recently, they are fatigued and less competent.
- ACC. (Accuracy)** — how accurate they are at attacking any ground target with bombs, rockets and missiles when not fatigued.
- W.W. (Wild Weasel)** — how accurate they are at taking out GCI sites with Shrikes or Standards when not fatigued.
- D.F. (Dogfighting)** — how good they are against aircraft when not fatigued. All the pilots have this rating, but only Phantom pilots need it.

PERSONNEL DESCRIPTIONS

The following are abstracts of the fictional or real-life careers of the pilots named in the crew lists.

A-6 PILOT PERSONALITIES

Grafton/McPherson:

Combat Sorties:	92		
Fatigue Factor:	Good	Bombing Accuracy:	Good
Wild Weasel:	Poor	Dogfighting:	Poor

Lieutenant Jake "Cool Hand" Grafton is a Naval Academy graduate, at the top of his class. Grafton chose to fly A-6s instead of F-4s because he likes to fly "low in the mud where the action is." According to his skipper, he's steady and good. His BN, Lt. (j.g.) Morgan McPherson, is one of the best at being able to nail a target using radar. He's best-known for his ability to preplan missions, knowing the targets like the back of his hand. This team has been flying together for over two years.

Graustein/Wade:

Combat Sorties:	5		
Fatigue Factor:	Fair	Bombing Accuracy:	Bad
Wild Weasel:	Bad	Dogfighting:	Bad

Both Graustein and Wade are "New Guys," fresh from the Naval ROTC (Reserve Officers Training Corps). They're unproven and their skill sets are unknown. Wade is the BN, enthusiastic but green.

Lundeen/Greve:

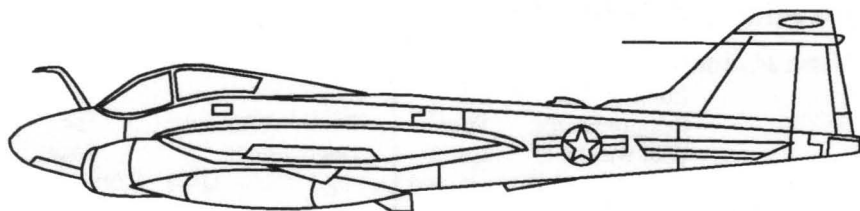
Combat Sorties:	31		
Fatigue Factor:	Bad	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Poor

Lt. Sammy Lundeen is not only Grafton's roommate but also the squadron's personnel and awards officer. Tall for a pilot, Lundeen has a wacky sense of humor. Lt. Marty Greve is his bombardier-navigator.

Parker/Rockwell:

Combat Sorties:	38		
Fatigue Factor:	Poor	Bombing Accuracy:	Fair
Wild Weasel:	Bad	Dogfighting:	Poor

Lt. Commander Cowboy Parker has a lot of experience as the squadron's operations officer. He's popular with junior officers who respect his professional abilities and ability to take a joke. In addition, he's a good desk jockey and not a bad bomber who just needs some more time in the air to gain experience. Rockwell is his solid BN with a reputation for bombing gophers 50 feet off the deck at 500 knots.

**Ford/Walkwitz:**

Combat Sorties:	76		
Fatigue Factor:	Good	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Bad

Lt. Nathan Ford is a tireless pilot. He attended the Naval Academy and he is on his second tour of duty. His BN, Lt. Bob "Boxman" Walkwitz, is the master of flip comment. He's best known for liking wine and women equally well. He even likes going against SAMs—because he thinks it's fun.

Campbell/Cole:

Combat Sorties:	131		
Fatigue Factor:	Fair	Bombing Accuracy:	Good
Wild Weasel:	Bad	Dogfighting:	Poor

Capt. Richard Campbell has flown many missions and is a tested pilot. His BN, Lt. Virgil "Tiger" Cole, counts among his medals the Distinguished Flying Cross after eight years in the Navy. After two combat cruises Cole became an instructor bombardier at VA-42. An Arizona native, Cole seems close-mouthed to all but his best friends. But when it comes to bombing, he's the best of the best.

Allen/Bartlett:

Combat Sorties:	7		
Fatigue Factor:	Poor	Bombing Accuracy:	Fair
Wild Weasel:	Poor	Dogfighting:	Bad

Lt. Richard Allen and his BN Bobby "Pear" Bartlett are another set of "New Guys." Bartlett, an Academy graduate, is a good BN and has a steady stick. Allen, though, is unproven yet.

Augie/Durfee:

Combat Sorties:	12		
Fatigue Factor:	Fair	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Bad

Both Little Augie Odegard and Razor Durfee are Naval ROTC graduates. Razor, who's balding but with a moustache, would rather be in law school than flying jets. He's nervous and not terribly well-liked, but he is capable at his job of BN.

F-4 PILOT PERSONALITIES

Flynn Jr./John

Combat Sorties:	35		
Fatigue Factor:	Poor	Bombing Accuracy:	Fair
Wild Weasel:	Good	Dogfighting:	Poor

Lt. Cmdr. Johnathan "Errol" Flynn Jr. and Lt. (j.g.) Robin "Little" John have been specializing in Wild Weasel missions since the capability appeared. "Death to Radar" is John's battle cry. They are recent additions to the Shiloh's squadron; this is their second squadron in one tour as they first were New Guys in another carrier wing on a ship that just departed. Between their quickly-won expertise as "Weasels" and their short time on station before their previous ship was rotated home, the Admiral of Task Force 77 was happy to agree to their requested transfer to a ship that "was still fighting." Many of their new squadron mates are afraid that Flynn and John have not yet learned that war is a deadly business. They treat it as a game.

Hyde/White

Combat Sorties:	5		
Fatigue Factor:	Fair	Bombing Accuracy:	Poor
Wild Weasel:	Bad	Dogfighting:	Poor

Captain Rod "Hell Raiser" Hyde and Ens. Bob "Animal" White are new "nuggets" in the squadron. Hyde, a graduate of the Air Force Academy in 1967, is a U.S. Air Force F-4 driver on exchange duty. White is a recent graduate from the NROTC program. Considered to be a average team by fellow aviators, these two are best known for their shore leave charades. They are well-liked, fun, hardworking and dependable.

Tucker/Salibello

Combat Sorties:	131		
Fatigue Factor:	Fair	Bombing Accuracy:	Good
Wild Weasel:	Fair	Dogfighting:	Fair

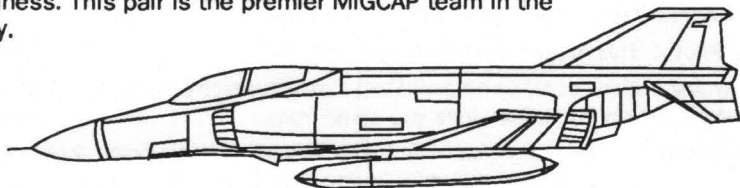
Commander Gene Tucker and Lt. (j.g.) Cosmo Salibello are credited with downing one MiG in their F-4J. A graduate from the Naval Academy, Tucker is considered one of the most experienced F-4 drivers in the Navy. This is Tucker's second tour of duty. Smart, well-respected, good at everything, and extremely committed to the job at hand, Tucker is a good leader.

Cunningham/Driscoll

Combat Sorties:	52		
Fatigue Factor:	Good	Bombing Accuracy:	Fair
Wild Weasel:	Poor	Dogfighting:	Good

Lt. Randy "Duke" Cunningham and Willie Driscoll, both graduates from the Navy's Fighter Weapons School ("Top Gun"), are the Navy's only aces of the war. On May 10, 1972, they managed to shoot down three MiG-17s with heaters (AIM-9 Sidewinders), including the North Vietnamese ace Colonel

Toon. Toon was credited with 13 American kills prior to May 10th. Cunningham is considered one of the best stick and rudder guys in the business. This pair is the premier MiGCAP team in the Navy.



Freeborn/Elliot

Combat Sorties:	82		
Fatigue Factor:	Bad	Bombing Accuracy:	Fair
Wild Weasel:	Poor	Dogfighting:	Fair

Lt. Freeborn and Elliot are credited with the second MiG-21 kill by the Navy. This feat was recorded on October 8, 1967 while flying with Davis and Elie who are credited with a MiG-21 kill during the same engagement. Freeborn is a good ACM guy with a keen pair of eyes; he flew the F-3H Demon prior to the F-4 and served as a Phantom instructor before his first tour.

Davis/Elie

Combat Sorties:	56		
Fatigue Factor:	Fair	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Fair

LCDR Bob Davis and LCDR Gayle "Swede" Elie recorded the first Navy MiG-21 kill seconds before Freeborn and Elliot shot down the second one. Davis and Elie are an experienced pair with good dogfighting skills.

Beardsley/Joslin

Combat Sorties:	73		
Fatigue Factor:	Bad	Bombing Accuracy:	Good
Wild Weasel:	Fair	Dogfighting:	Fair

Lt. Bill "Burner" Beardsley and Lt. Mike Joslin are a solid air-to-ground crew. Both are very experienced and served their first tour aboard the *USS America* (CVA-66). Burner joined the Navy in 1965. Beardsley is a good stick and rudder man and has been accepted to the Blue Angels flying team. He has never been hit in combat.

Grant/Sullivan

Combat Sorties:	4		
Fatigue Factor:	Good	Bombing Accuracy:	Poor
Wild Weasel:	Bad	Dogfighting:	Bad

Lt. Grant and Lt. (j.g.) Sullivan are brand new replacements. As far as nuggets are concerned, these two are reasonable going air-to-ground. They are fresh and eager but they have a lot to learn, especially in ACM and anti-SAM missions.

FILE MENU

There have been several additions and changes in this menu, mostly having to do with the debriefing screens and use of the videotape.

Take Photo: This is the former Photograph option.

The following options can only be accessed during mission briefing or debriefing. Pressing **[Esc]** takes you back where you came from.

Slide Show: This allows you to go to the Debriefing Photograph screen to look at any photographs you have taken and saved.

Video Replay: This allows you to replay any previously saved videos.

Sierra Hotel: This shows you the current Top Ten list for the game.

Awards: This shows you what awards the pilot has already earned.

COMMS MENU

The **Communications Menu** presents you with three choices. Single Player is the default for playing against and with the computer alone. To use one of the other options you must have two computers connected through a null-modem serial cable (available at most computer supply stores). Sorry, we do not support modems with this game.

Using the Comms Screen

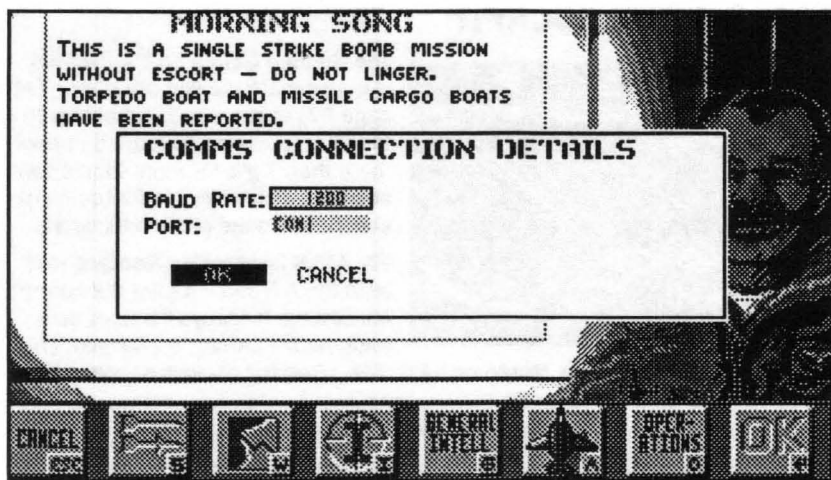
Before setting up two-player communications, you must decide on which operation you will fly. Both players should go to that Operation Screen. Then use the **Comms Menu** to determine which is the US Host and which the Terminal. The player with the faster computer should select US Host because his machine does most of the work. US Host also has more control of the game and options.

The Terminal player may use the menus to pick his own flight mode, level of detail, control method and weather conditions. (Yes, one player can be playing in clear weather and the other in bad weather. This is a gap in reality put in so that one player can play a more difficult game as a personal challenge.) The terminal player has no control over the mission planning (setting waypoints, etc.).

US Host This player can choose any aircraft at game beginning. He can switch to any other aircraft including the Terminal player's plane, but he cannot control the Terminal player's plane.

Terminal Once the connection described below is made, the terminal player may choose one plane from the rest. The US Host player can fly any of the other planes at any time. The terminal player can fly as the US Host player's wingman or fly in one plane from a separate element. Alternately, he can fly as a MiG. Once he has picked an aircraft, he must stay in it. It will not fly on autopilot. If it is an American plane, the US Host player can enter it but cannot control it.

If the Terminal player picks a MiG, he must fly with collisions on and limited engine, armaments and fuel. Also, his cockpit looks and operates like that of an F-4.



The Comms Connection Details Screen

Once you have finished setting up the mission to your mutual liking, the same screen comes up for both the US Host and the Terminal computer.

- ☛ **Baud Rate** Use and to select a baud rate. Both players should pick the same baud rate.
- ☛ **Port** Use and to select the port the cable is connected to. Each player picks the port appropriate to his machine.
- ☛ **Cancel** Press to leave this dialog box without attempting a connection.

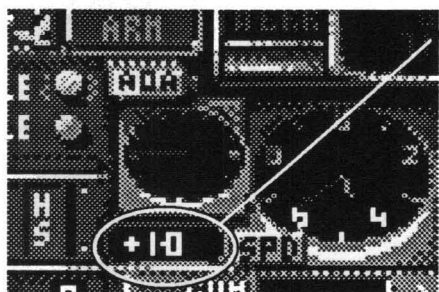
Once either of the players is shot down, the game is over.

LEVEL, CONTROL AND OPTIONS MENUS

Once you set your preferences for type of sound on the **File Menu**, choose a level to fly at on the **Level Menu** and/or customize your style of flying by using the **Options Menu** (pages 74–77), and specify your amount of sound preferences on the **Control Menu**, the game saves your preferences to go with the name and callsign you chose when you finish the mission and return to the Duty Roster. The next time you pick that name and callsign, the game defaults to the choices you made for that name in the previous mission. If you want to fly at a different level, you can either:

1. Rechoose the options, which the computer will attach to the name for future missions, or
2. Pick a different pilot name and callsign and set up a different options package for that name.

READING THE COCKPIT



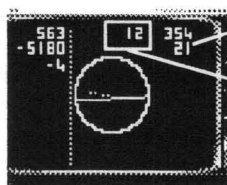
The G-Force Gauge on the F-4 tells you how many g's you are pulling (see page 97) at any time. Remember that the Phantom is not designed to take more than 7 g's for more than a few seconds. Too many g's for too many seconds and the plane falls apart.

The MILS Depression Reading tells both the A-6 and F-4 pilot the current Mil setting. It always displays zero until the Mil setting is changed. (The

Mils display is not blank as stated on page 118.) See the cockpit display on the enclosed Reference Card.

The EMIT light on the A-6 or the ECM light on the F-4 will illuminate if you turn on the ECM pod. If you have an ECM pod, toggle it on by pressing **[E]**. See the cockpit display on the enclosed Reference Card.

READING THE PHANTOM RADAR SCREEN (PAGE 107)



This measurement is in nautical miles (see page 93).

When the radar is showing the distance to a flying target, a number appears here showing the altitude of the target in 1,000s of feet.

If you have selected Medium or Hard Targets from the **Options Menu**, you will not get any information on potential targets until you have a radar lock. Navigation information (relative bearing and distance to waypoint) will not show up if you have activated your air-to-air weaponry with **[Enter]**. Instead, the spaces will be filled with XXs.

The HUD Dot

We added a green dot to the Heads-Up Display (HUD) on the front wind screen of both airplanes. This dot shows you your current stick position; it is provided as a convenience for mouse users and a reminder for joystick and keyboard users.

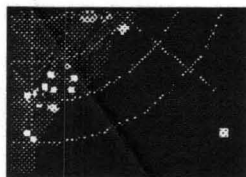
The Phantom Cannon

To properly simulate the lack of a gun in the Phantom, players who have chosen the Limited Arms option have *no* ammunition for their gun. This is the default setting if you are flying at the Lt. Commander, Commander and Captain level.

Reading the COMED

In EGA or VGA the colored dots on the COMED screen represent:

Red	SAM Site
Blue/Cyan	Airfield
White	AAA Site
Yellow	GCI
Grey	Targets/built-up areas
Pulsing Dot	You
Pulsing Blue Dot	Most recent enemy plane reported by Red Crown



SAVING PICTURES AND OPERATIONS

If you want to save snapshots and videos taken during a mission on a floppy disk because you either do not have a hard disk or do not want to clutter up your hard disk, you must create a photo disk. Format a floppy disk; copy PHOTO_ _ . SEQ from the game disk onto the new disk. Rename the old PHOTO_ _ . SEQ file on the game disk (see A3 for how to do this.) to keep the computer from getting confused.

Similarly, if you want to save the operations you devise as the CAG, format another disk and copy * . OPA onto that disk. Rename * . OPA on the game disk.

SOME QUICK CORRECTIONS TO THE MANUAL

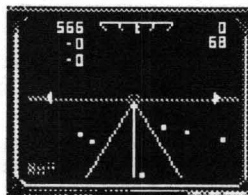
- Page 19** The first time you press **[Spacebar]** "pickles" the target by locking the radar on to it; The "LOCKED" light below the radar screen lights up. (On the F-4, the same "LOCK" light you use with the Sparrow also lights up with the Walleye.) Pressing **[Spacebar]** a second time actually fires the missile to attack its pickled target.
- Page 38** The MiGCAP and Escort fighters should leave the ship after the bombers. They are faster and will arrive over the target first. Plan your missions with the bombers leaving first. Sections of aircraft should be spaced at least a minute apart. If you do not do this, the computer will.
- Page 41** Local Ground Activity does not measure the amount of air-to-ground weaponry on the site. It measures how much movement of trucks, trains, and boats is going on in the area.
- Page 49** The Iron Hand missions do use Shrikes against AAA radars. Escorts do attack MiG targets, not just ground targets.
- Page 87** The empty red box on the Threat Indicator indicates any ground radar. The filled red boxes mean there is a SAM in the air.
- Page 91** The F-4's radar circle does not change size.

BOMBING TECHNIQUES

USING DIANE

The DIANE is the heart of the A-6. It is both a navigation and a bombing device. When it is in operation, the radar screen of the A-6 looks like this:

The tripod indicates the direction to the next waypoint. Think of it as the highway ahead of you on a trip. If the centerline moves away from straight ahead, turn the plane to follow the centerline. The horizontal line running across the screen indicates



the horizon.

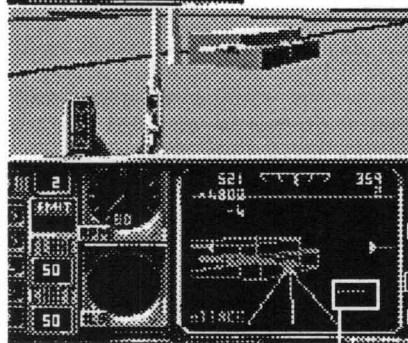
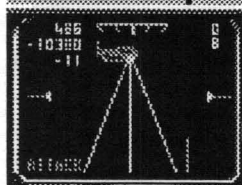
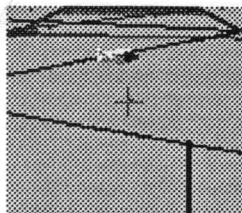
When the square at the top of the tripod moves off the bottom of the screen, select **[:]** to set the DIANE for the next waypoint.

When ATTACK appears at the bottom of the screen, you're approaching the target. Press **[7]** on the top row of the keyboard to go to the Weapon Select Screen. Select whatever bombs you are carrying with **[Backspace]**, select Ripple for the bomb release method with **[PgUp]**, and DIANE for your bomb release method with **[End]**.

Dive toward the target from 10,000–15,000 feet or fly level at that height. The square at the top of the tripod

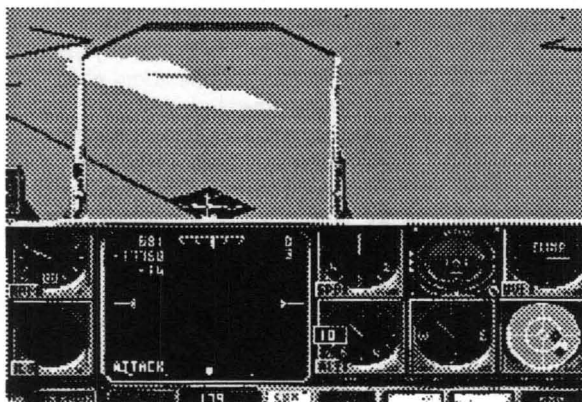
fills in to indicate the target and follows the picture on the radar screen. At the same time, a horizontal bar appears on the right side of the screen. When that bar hits the bottom of the screen, hit **[Spacebar]** to release your bombs.

Note that the horizon line has disappeared from the screen. This is because the plane is diving on the target. If the plane was keeping a level approach, the horizon line might still be on the screen, but the tripod would be focused on the target. The tripod's function is to show the point the plane is going to, not the direction of the plane's travel.



Horizontal Bar

USING DIRECT



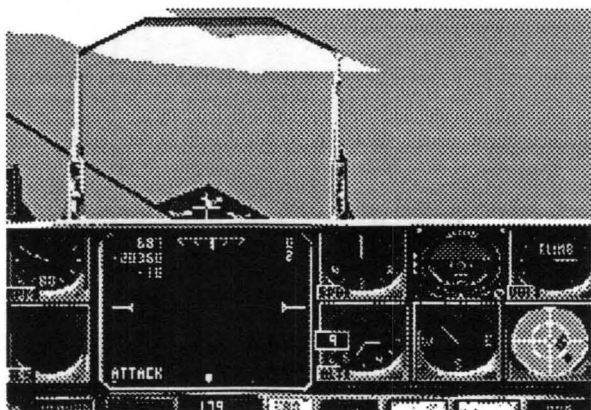
This is very difficult and takes a great deal of practice. The simplest method is a straight approach toward the target.

Before starting the attack, you need to choose the release parameters: speed, height and angle of dive.

From this selection, you can find the mil setting in the tables on pages 120–121.

For instance, for 450 kts, an altitude of 8,000 ft and a dive angle of 60 degrees, the mil setting is 112.

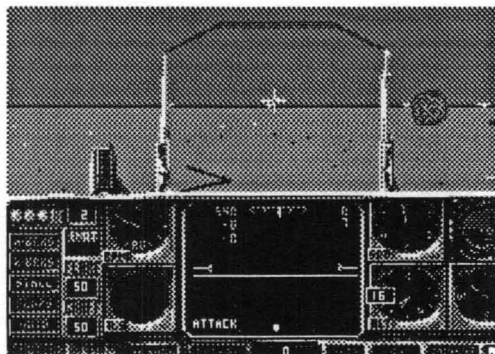
In the cockpit the mil setting is achieved using **I** and **M**. **(Shift)** can be used in conjunction with these keys for a faster change. As the keys are pressed, you should see the aiming sight in the simple HUD (Head-Up Display) move up and down. The actual mil reading is shown on the display below the radar screen. When you are not using this method of bombing, the display reads "0" (zero).



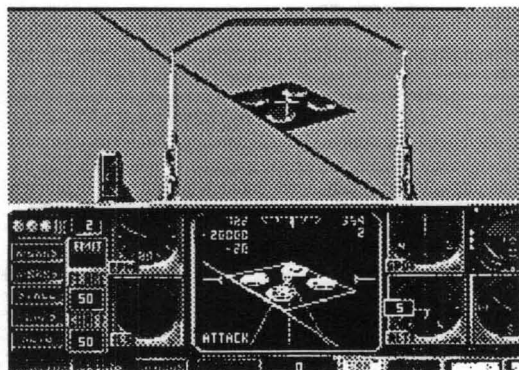
Set the mils as shown in the example above. Approach the target at about 8,500 ft and a speed of 400–420 kts. If using keyboard flight controls, use the sensitivity keys, **F3** and **F4**, to change the sensitivity to maximum. When the range figure in the upper right of the screen hits one mile, push the stick forward quickly and get the sights on the target.

Coordination is needed here because you must hit **(Spacebar)** when the sight is on the target, the altitude is 8,000 ft, the speed is 450 kts, and the dive angle is 60°. The dive angle should be taken care of by diving at a range of one mile. Direct attack is difficult and easy to miss by many feet, so it is a good idea to ripple the bombs to get the best chance to hit.

USING DIVE-TOSS

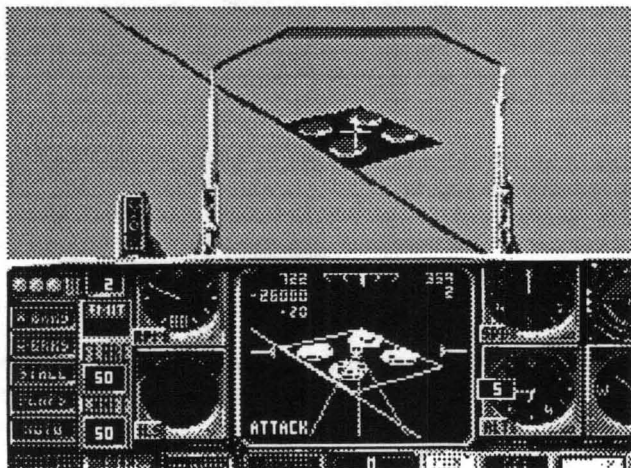


The setup for dive toss is very similar to direct dive bombing. You do not have to worry about being as precise about dive angle, speed, and altitude, but your accuracy is also impaired. Circle the target at 10,000–15,000 ft and then turn and dive toward your bombing objective, using any dive angle you wish. When your wings are brought level after turning towards the target, point directly at the target. The bombsight should be directly over the ground object.



Press **[Spacebar]** and pull up. The bombs are released automatically.

This technique works for any form of iron bomb including retarded fall munitions like the Mk82S Snakeye.



Debriefing—The VCR (use **[V]**)

There are 5 icons associated with the video replay device.

[P]	Plays the tape
[→]	Moves you to the next sequence on the videotape
[S]	Allows you to save the tape (tape name can only have six letters)
[L]	Allows you to load a saved tape
[Enter]	Takes you out of the VCR Screen

During Videotape playback, you can change to outside and tracking views, zoom in and out, change the vertical and horizontal orientation, and fast forward by using **[Tab]**. You can get out of the playback at any time by pressing **[Esc]**.

Debriefing — The Photographs (use **[PrtSc]**)

You can use the arrow keys to pan around a picture you took during your mission. The knob in the bottom right corner of the monitor shows a letter corresponding to the photo.

Debriefing Screen and Sierra Hotel

The multiplier given for scores on page 77 is off by one decimal place. Divide all the numbers by 10. Thus, the rank multiplier of a Lt. j.g. is 1, not 10, and the Captain's rank multiplier is 5 instead of 50.

You may get a high score on the Debriefing Screen but a lower one on the Sierra Hotel screen. The Sierra Hotel score is the average of all the scores for that pilot. If you have one very good mission and a series of mediocre ones, your Sierra Hotel score steadily declines and your place on the list also declines, depending on how many pilots are being played in that game.

If a pilot name is "retired" by being changed (even from Rookie to your own handle), the name may still appear on the Sierra Hotel listing because its score before retirement is high enough to warrant a listing. If you do badly in your initial missions and you have no points yet, you may find the Rookie you "replaced" is still on the Sierra Hotel list and you are not.

Court-Martial

If a pilot violates the Rules of Engagement, he might be court-martialled. In this game, this means that that pilot is cashiered out of the Navy. The likelihood of being court-martialled increases with the level of difficulty as set on the **Options Menu**. If you fly at Captain level, but all of your options are set to Unlimited Arms (that is, no checkmark next to Limited Arms) and similar values, then the computer realizes you are just playing a game and does not call you to account for your violations of the Rules of Engagement.

Besides violating the Rules of Engagement, you might be court-martialled (if you are flying at a high level of enemy activity) for:

1. Attacking your own ships.
2. Attacking your own planes.
3. Ejecting if you have sustained no damage.

If you are court-martialled, you can start a new pilot with the same name and call sign, but that pilot has none of the points accrued by his namesake.

KEYBOARD AND OTHER INTERFACES

Corrections and clarifications for the keyboard

The enclosed separate Reference Card shows all the correct uses for the keys.

-  **S** This key toggles the sound between the options found on the Control Menu. Once you have picked the type of sound you want from the File Menu, you can use this key during the game to toggle between "All Sound On," "Engines Off" and "All Sound Off."
-  **Enter** This key does not toggle between air-to-air weapons on the F-4; instead, it toggles between weapon *stations*. This is why you may have to hit this key more than once to go from another weapon to the Sparrow AIM 7. The Sparrow does not count as a normal store on the plane because it has its own dedicated stations; other ordnance cannot be loaded on these stations. If the weapon selector starts on Heat, for instance, it first cycles past the two stations that could carry Sidewinders, then checks the guns, and then looks to the Sparrows.
-  **H** Press  **H** to activate the hook on landing. Without the hook down, your plane cannot catch the arrestor wire.

Selecting an icon with the keyboard

-  Instead of pressing the particular key (such as  **I** for Information) you can use  **Tab** to move the highlight from one icon to the other and then press  **Spacebar** to select the icon you are highlighting.

Using the mouse and joystick

-  To recalibrate your mouse, choose Recalibrate from the Control Menu. The further you move the mouse when instructed to do so, the less sensitive the mouse will be. You can center the mouse by clicking the left button.
-  The fire button (button A) on the joystick and the left button on the mouse fire weapons just as  **Spacebar** does on the keyboard.
-  Button B on the joystick and the right button on the mouse can be used for rudder turns, as described below.
-  The center button on a mouse centers the stick without having to drag it back to the center position on the HUD.
-  The "Stick & Throttle" option is for joysticks with throttle controls, such as the CH FlightStick. It operates the same as a regular joystick except that the throttle device acts to increase and decrease the plane's RPM.

Level turning (Using the rudder)

- ☛ Press **Ctrl** **4** to make a level turn (without banking) to the left and **Ctrl** **6** to make a level turn to the right. This simulates the effect of the plane's tail rudder. The turn will not be as sharp as a banked turn, but will give you a stable platform and no loss of altitude. Hold down the right button on the mouse or button B on the joystick to accomplish the same purpose.
- ☛ If you are using the "Stick & Rudder" option, you must have two joysticks. The two joysticks may be set up either through a Y-cable or two game ports. The right stick is for flying the plane and weapon-firing; the left stick is for controlling the throttle in the vertical axis and making rudder turns in the horizontal axis.
- ☛ Calibrate the first of these two joysticks normally.
- ☛ Calibrate the second stick by:
 1. Bringing the stick directly back, centering it, and then pressing the fire button.
 2. Then pushing the stick to the upper right, then pressing the fire button.

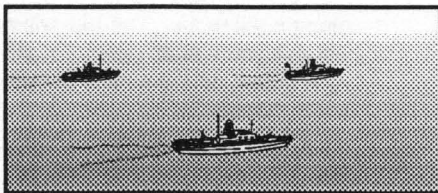
Autopilot

- ☛ Press **A** if you want the plane to fly itself but allow you control of the weapons. In this mode the plane will not fire its weapons unless you arm them, select them and trigger them. In short, you are acting as the RIO or B/N while the computer plays pilot.
- ☛ Press **Shift** **A** if you want the plane to fly itself and use its weapons automatically. Planes that you are not personally flying operate this way.

MISSION ADDITIONS AND CHANGES

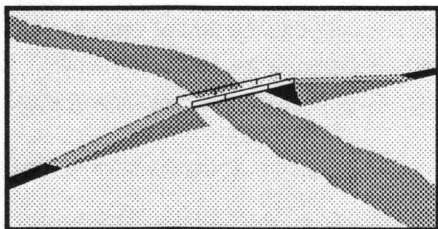
Operation: DECK ALERT

A-6s are not available for this mission. You will need to use a section of F-4s.



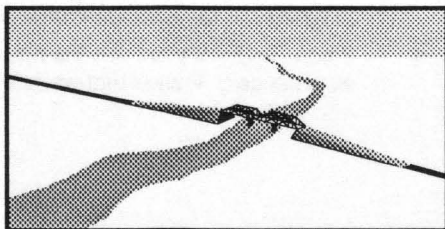
Operation: TALLY HO YO

A section of A-6s has been assigned to the Iron Hand mission. You are being given a section of F-4s for TARCAP and another for ESCORT because MiG activity is high.



Operation: BACK BREAKER

Because of higher levels of MiG activity than originally anticipated, you are being given an additional section of F-4s for Escort duty.



SOME ANSWERS TO COMMON QUESTIONS

Five Minutes To Play card

- Q. Where is the "Five Minutes To Play" card mentioned on page 9?
- A. *After writing the manual and sending it to the printer, we realized that we already had quick-learning directions in the First Intruder Mission (page 11) and First Phantom Mission (page 25).*

Using the menus

- Q. How do I get to the menus?
- A. *Press **F10** to get to the menus. See page 73.*
- Q. I started my mission and tried to pick from the Options Menu and it was all greyed out. How do I use the menus?
- A. *You have to make your Level, Options, and Comms choices **before** actually starting the mission. Once you are in the cockpit, those options are no longer available.*
- Q. I'm playing in CGA and trying to get a bad weather mission, but I can't do it.
- A. *Sorry, but CGA graphics don't permit the bad weather graphics to be used.*

Cockpit views

- Q. What does the SAM Warning Light mean (page 87)? Also, the Missile Light just comes on, but it doesn't flash.
- A. *This was a change. The SAM warning light means a SAM site radar has found you. The Missile warning light means that there is a missile in the air, looking for you.*
- Q. Why does my viewpoint out the front of the cockpit change to a lower-looking one when I drop my landing gear for landing?
- A. *This gives you a viewpoint more in common with what an actual pilot is looking at when making a carrier landing.*
- Q. Why is my Phantom radar screen full of static?
- A. *The radar picks up a lot of ground clutter when it is pointed at the ground. This does not happen in CGA mode.*
- Q. Shouldn't we have some kind of IFF (Identification Friend or Foe) indicator to show what planes around are our friends and which are foes?
- A. *The IFF in every plane was turned off over Vietnam. It not only told your friends who you were, it told the Vietnamese.*
- Q. I thought my wingman would show up on the threat indicator as a hollow square. I don't see him.
- A. *Your threat indicator (or Radar Warning Receiver — RWR) only registers radars that are detecting you. Your wingman's radar defaults to being turned off. If you want to see him, use **Shift** **9** to go into his cockpit, press **R** and then go back to the leader's cockpit.*
- Q. What does "UC" mean next to the landing gear lights in the Phantom and Intruder cockpits (page 84, 85 and 91)?
- A. *Under Carriage.*

- Q. Why does the waypoint information on the radar screen of my F-4 not always agree with the waypoint information on the [F5] and other outside views?
- A. If your F-4 is in air-to-air mode (you have pressed [Enter] to activate air-to-air weapons), it displays the bearing and distance to the next target, not the next waypoint. If you are using Medium or Hard Targets, these fields are filled with Xs until you get a radar lock on the target.

CAG Operations

- Q. I've put together my own CAG mission. How do I save it for future reference?
- A. When you have the mission finalized, press [T], which takes you back to the target screen. Press [S] and enter the name you have chosen for the mission. Ignore the target name highlighted on the Target screen as it has no effect on what you are saving.

Navigation

- Q. How do I find the carrier when I want to go home?
- A. Press [F5] or [F6] to go to an outside view. Toggle [Shift][;] until the waypoint entry says "Carrier," and you will see the distance and bearing to the carrier **from your current direction**. (This is known as the offset.) Similarly, you can find the current location of your wingman by looking at the bearing and distance when the waypoint entry says "Buddy." If you want to use the autopilot to get you back to the carrier, use [A] to toggle off the autopilot, go to the [F5] screen and use [;] to toggle the waypoints to "LAND" and then toggle the autopilot on again.
- Q. I'm trying to edit a waypoint to order Iron Hand and Wild Weasel as a CAG, but I can't find a command to fire Shrikes and Standards; there is no command for any kind of Combat Air Patrol (CAP) either.
- A. Use "Circle" for any action that involves the plane hanging around an area and looking for targets. Here are some other definitions:

Jink: Travel using lots of hard turns to throw off AAA and SAMs.

No Jink: Travel in as straight a line as possible.

Combat Form: Travel in side-by-side loose formation to give you more freedom of action in case of a dogfight.

Cruise Form: Travel with the wingman tucked in behind and to the right of the leader to give the smallest target to radar.

Land: Land on the carrier.

Weave: The wingman is behind the leader weaving from side to side to inspect the section's six.

- Q. But how about the waypoint listings you get with [:] in the [F5], [F6], [F8] and [F9] views?

- A. There are some special waypoint listings there to help you find your waypoints and friends. The [:] toggles between three readings:

Buddy: This gives you the offset from your current bearing and miles to your wingman.

Carrier: This gives you the offset from your current bearing and miles to your carrier.

Next Waypoint: This is the default setting, and tells you what function you are to perform at the next waypoint when you reach it. These terms are the same as those set in the Waypoint screen (pages 42–42).

Carrier landings

- Q. I landed on my carrier. Why does the picture of me and my buddy showed me daubed with paint?
- A. You **think** you landed on your carrier. You actually landed on the other carrier at Yankee Station. The paint is the hazing for making this mistake.
- Q. I'm trying to land on the carrier, and the meatball won't work.
- A. You activate the ACLS (Automatic Carrier Landing System) by pressing **[F7]**. Check the ACLS dial (the normally blank dial down and to the right of the F-4 radar screen and to the left of the A-6 radar screen) to see if it has the cross-hairs described on page 88 of the manual. If it doesn't, the ACLS is not on. Confusingly, the dial is labelled ILS (for Instrument Landing System), but that's the Navy for you.
- Q. Now that I am looking at page 88, how do I set the Sensitivity referred to at the bottom of the page?
- A. Use **[F3]** and **[F4]** to set the Sensitivity.
- Q. Speaking of landings, my AOA isn't lighting up when I approach (page 87).
- A. You are probably coming in too fast or too slow. The AOA only gives you information when you are making a correctable approach. If the AOA is not lit, you are probably coming in too fast. If you are coming in too slow, you are probably stalling out anyway. If you stall out, you are too slow. Oh, yes, you need to activate the ACLS with the **[F7]** for this to work, too.
- Q. I obviously need to practice my landings, but I can't find "Testland" on the mission list.
- A. Go to the Target Selection Screen (the first screen to appear when you pick "CAG Brief"), press **[L]** to load in a saved operation, and enter "Testland" in the dialog box. (You can just erase any operation name already entered.) Please ignore the "Error: No Target" message.

Debriefing

- Q. Now that I've landed, how do I know how good my landing was? Where are these colored disks?
- A. Look under the "Duty" in "Duty Pilot Landings." The rating for your most recent landings are shown by colored disk(s) enclosed in brackets.
- Q. I violated the Rules of Engagement. Why was I not court-martialed?
- A. You were flying at Lt. (j.g.) or Lt. level. Much is forgiven at these levels. You can also turn off the Rules of Engagement on the **Controls Menu** at any level.

Using the weapons

- Q. I'm all lined up on my target and pushing **[Spacebar]**, but the weapons don't fire. What's wrong?
- A. *To use any weapon, you must press **[Home]** (Tandy users, the **[7]** on the number pad) to arm it. If the weapon is not armed, it will not fire. If you arm your weapons switch to autopilot and switch back, the weapons are not armed until you arm them again.*

Bailing Out

- Q. Every time I hit **[Ctrl][E]** to eject, I get killed. What's going on?
- A. *It is possible to survive an ejection. However, if you eject for no reason at a high level, you are automatically court-martialled and no longer on the Duty Roster lists. Also, if you eject over land or the immediate off-shore areas, you are assumed to be captured and out of the game. Also, there is a possibility you just will not survive the ejection. Many pilots did not.*

Scoring

- Q. The scoring method shown on page 77 seems to be off by a decimal point. Shouldn't the Rank Modifiers be a lot smaller than shown?
- A. *You're right: all the adjustments should be divided by 10, so they are all decimals. Also, the High Enemy Activity modifier listed under the Captain rank is wrong. The number should be 1.4, not .4. This gives you an idea of how much nastier the enemy pilots and AA are at the highest level.*

Combat hints

- Q. How do I know when I've shot down a MiG?
- A. *It goes straight down with puffs of smoke coming from its tail.*

Game Speed

- Q. How can I make the game run a bit faster?
- A. *Using PC Tone speeds up your frame rate and makes the game run faster. So does turning off "Large Scale" on the **Control Menu**.*

ASSEMBLY BUILDING IN HANOI LEVELED!**Rules Of Engagement Violated!**

The following narrative is from Mike "Moondawg" Weksler, who tried to duplicate Jake Grafton's attempt to bomb the National Assembly Building in downtown Hanoi. One note: "No. 19" is the callsign of Spectrum HoloByte's Development Services Manager, Marisa Ong — hence the references to a supposed Vietnam-era bomber pilot as "she."

On 19 June , 02:00, I go to ready room for mission planning. Make sure to hit F10 and select Captain, the proper control device, and other applicable options. After pressing the Escape key, I enter my callsign as "Devil, 50" on the duty roster and proceed to target selection.

I select the Power station in Hanoi, with the secondary target being the SAM site 180 south of Hanoi. I review the photo of the power station and hand the coordinates to my Bombardier/ Navigator (B/N), Virgil "Tiger" Cole, for later programming into the navigation computer.

I save this, exit out and when everyone has left, go back to get info on the real objective of this mission: the Assembly Building in downtown Hanoi. "Too many lives were being sacrificed for worthless targets such as 'suspected truck parks,' I think as I reflect on "Morg." (Morgan McPherson flew with me on a "truck park" mission. We had flown together for two years. He was my friend. A stray bullet killed him on that run.)

I note the coordinates for the Assembly Building and load up my original target file to review the information. Target intelligence provides a map and photos of the power station, but no photos of the SAM site — just a spot on the map.

We review general intelligence. This shows that the MiG activity in the vicinity of the primary target is high and Ground activity low.

But after we bomb the primary target we're going to violate the Rules of Engagement and take out that Assembly Building in downtown Hanoi. From the intelligence I can gather for the Hanoi area, I can see that all enemy activity would be high. I give Tiger the target info, we grab some coffee and then go through the routine of donning our flight gear.

On the flight deck, Tiger punches in the waypoints for the power plant strike; but then he adds the waypoint to the Assembly building with the waypoint editor.

At the first waypoint, he changes the altitude to 500 ft and sets the action to ripple bombs to make it look like we're gonna dump it all on the primary target. The second waypoint is also changed to 500 ft and ripple bombs. If we have to, we'll page to the other A-6 and our bird will fly to the Assembly Building on its own. He then tabs the Next Section icon and is pleased to see that we are the only section on this mission. This means we can leave the primary target area relatively unnoticed and fly to Hanoi.

I can see No. 19, my wingman for this mission and her B/N, Greve, going over last minute details on their bird. I approach the Ordies and proceed to go over the ordnance with the Chief. I offer to take him up on a joyride later if he agrees to issue us some of the 2000 pounders, instead of the standard strike load of ten Mk82s, one Paveway, and two Walleye's.

He agrees and we load up with five Mk84s to penetrate the heavy duty concrete of the assembly building. This leaves no room for the ALQ radar jamming pod so

we'll be flying very low. Tiger makes some remark about pruning treetops, but I'm too nervous to quip back.

It's now 0215. As we ready for the flight, I choose the A Icon to insure we're launching at 0230 and we're set up for a bombing run.

I run through the pre-flight checklist (double checking every waypoint and action) and Tiger checks his equipment out.

I salute the cat officer and with a war whoop hit the Ctrl-L keys. Soon I'm flying at 8 KIAS above my stall speed. No wind tonight and the carrier is steaming at 20 kts — barely enough to get us up. "At least the weather is calm," I think.

I raise the gear and flaps. Soon, with the aid of the Tab key to accelerate the time rate, we are at 325 kias at 25,000 feet. "We're gonna have to go nice and slow on ingress to save fuel," I say to Tiger. He clicks his mike in response. I page to No. 19 in Devil 502 just as she is launching.

I can see my jet climbing out of her cockpit. "No transcendental meditation would let me do this" I murmur. Greve was having problems with his NAV and targeting computer. DIANE was on the blink, and he would have to bomb direct. I page back to my jet.

At 74 nms from Downtown I start descent and go through the master arm checklist. At 500' I level off and call feet wet. By staying low and flying "up the river," we seem to have avoided the enemy. They know we're coming and my warning lights are all lit up, but they can't get a lock on us as we blend into the ground return. The terrain is so flat that we frequently fly below 200'. No tracers, no nothing. Can't hit the Tab key because we'd hit the ground. We approach the target. I let Devil 502 go in first because she can strike lower than us because we have Mk84s. I climb up to 2000' and Tiger says that the pickle is hot. I watch Devil 502 take out the target. "Better go in and drop one off for good measure," Tiger says. I climb higher then dive at the target. The attack indicator lights up and I watch the little block in my VDT move closer to the center. It starts to fill in and as I fly closer to the target, the horizontal release indicator comes on. When it hits the bottom of the screen, I release and place the 2000 pounder right in the boiler. We feel the turbulence of the blast as we destroy what's left of the target.

Tracers light up the sky, but I fly over them like a high jumper just clearing the bar. I can't get below 2000' until we are clear of the target area. We still have four 2000 pounders left for the Assembly Building. "We'd better get down to business," Tiger murmurs.

I page to Devil 502, hit the  until the waypoint reads "Land" and invoke her ILS with the F7 key. Then I switch back to my lead position.

It comes as no surprise when Devil 502 radios to me with a system malfunction. Something is wrong with her NAV computer and she is going to bug out. I radio back that I am enroute to the SAM site south of the Hanoi but have to change course to avoid some AAA. We are now alone.

So far, no enemy aircraft on RWR. All clear on ingress to Hanoi. As we approach the city, I climb up to 4000' and Tiger pinpoints the Assembly Building. He says, "Your pickle is hot," and I dive for the target. It looked just like the Intelligence I had acquired. "This one is for you, Morg!" I think as I squeeze the release button. All of the Mk84s hit their target. We feel the repercussions from the explosions as distinct thuds violently shake our aircraft.

I realize I flew too low. The damage warnings light up the B/N panel. Either our

own bomb explosions got us or the AAA has us locked. I can see tracers. so I hug the ground so close I'm afraid I'll snag a clothesline. Circling around to make sure the building is destroyed, I see that I've unfortunately taken out the next-door building too. I only wanted to damage the leadership. Hope no civilians were in that next building.

I hit the [] to start egress. When we are clear of enemy fire, we survey the damage. The COMED is useless; the radar must have taken the damage. However, the NAV computer is still functioning enough to guide our autopilot back to the landing waypoint on the Shiloh.

I throttle to full Mil power, hugging the ground and managing to somehow extend on the bogies scrambling to intercept us. Tiger breaks the silence with a "Fancy shootin' pardner," as we head for the coast; we know we've disturbed a wasp's nest; now they are going to buzz around our faces, ready to sting.

I page to Devil 502 as she calls feet wet. She must have run into some MiGs or taken a SAM hit or something... Everything is Foxtrot Uniform in this bird. The COMED is just black. Somehow, it is still flying. I page back to my own A-6.

"What are you doing popping in and out of here all the time?" Tiger growls. "Don't you know the autopilot makes us climb? I was a sitting duck while you were gone!" He's right. My panel shows a SAM launch. Talk about pucker factor! A second SAM launches before I can dive into the ground return. "Jake, it's closin' fast... Five o'clock!" I dump some chaff and almost fly the bird into the ground. I black out as I pull up but am still in control.

When my vision clears the first SAM is gone. Must have hit the ground as we pulled out of the dive. We're now off course at angels 2. The second SAM is still closing. I hit the chaff button and dump as much as I can. Multiple bogies are still closing. Almost to the coast now. I dump more chaff and jink out of the way of the remaining SAM as it goes off guidance. We can see the SAM go right past the right wing. "Get down!" Tiger yells at me.

I skim the trees the rest of the way back to the coast. I blend in with the ground return and fly along the river. No further SAM launches. The AAA light is still lit, but I know they can no longer single me out of the ground return.

I call Feet Wet and start my ascent. I know that when I get back I'm going to catch hell for this. Maybe even a court martial in the Debriefing mode. "Bingo fuel," is all that Tiger says as he reminds me to throttle back. At angels 2, all I can wish for is the KA-6 to fly by and give us a fill-up, but I know that it's not flying. I hit the autopilot and and sit back, pressing the Tab key.

I avoid paging Devil 502 because if it lands while I'm in it, the mission is over. Checking every way out of my own cockpit shows no sign of my wingman. "Must be on final," I think.

The sky is clear and we seem to be the last ones up. I invoke the ILS with the F7 key and line up my needles. Tiger and I remain silent. The LSO doesn't even ask me to call the ball. OK, throttle back, flaps, gear and hook down. Needles lined up, I can see the meatball. I'm too low. Climbing. Now I'm too high. Can't seem to line up. KIAS is 174 and I'm 400'. Needles high and center, fuel 1000 pounds. I shove the nose forward and hit the deck with a force that we both are sure will push the landing gear struts through the wings! Then we feel the reassuring tug of the number four wire and start to breathe again.

Devil 501, over, out.

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FLIGHT OF THE INTRUDER™

A SIMULATION OF

THE AIR WAR OVER NORTH VIETNAM

Including Flight Simulations of

The A-6 Intruder

and

The F-4 Phantom

FLIGHT MANUAL

Spectrum HoloByte™

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John McGinn

Lieutenant Commander, U.S. Navy Reserve— Veteran A-6 pilot who is still flying and provided invaluable checks on our A-6 accuracy and pictures.

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Colonel, U.S. Air Force (ret.) — Invaluable source of information about Phantom vs. MiG combat over Vietnam. Colonel Hanley is credited with the only F-4 gun kill of a MiG-19 over North Vietnam.

If you have questions regarding the use of **FLIGHT OF THE INTRUDER™**, or any of our other products, contact **Spectrum HoloByte™** Customer Support at:

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Come Fly With Me

by Stephen Coonts

A modern jet warplane is a strange, challenging machine, and its cockpit is much different than the places that most of us are familiar with. It's a flying Grand Prix racer, world-class superbike and a video game, all in one.

*This magnificent machine slices through the atmosphere with a freedom that cannot be described, only experienced. A slave to your every whim, the aircraft responds to the slightest pressure on the controls, yet is ready to kill you the instant you make a false move. There is the darkness and the weather — nothing is as black as a night sky under a tropical overcast as you skim above the ground knowing the slightest caress from Mother Earth will be instantly, totally, fatal. There is the enemy — in combat they are doing their damndest to destroy your machine, and you with it. If you survive all that, then you may sample the *pièce de résistance*, the night carrier landing, usually in foul weather, occasionally in a shot-up airplane. You come out of the goo and there is the deck, pitching gently with the meatball and the centerline lights and all you have to do is fly your airplane through the needle's eye into an arresting gear wire.*

So come on!

Come fly with me.

You awaken in the middle of the night, put on your stinky, green, one-piece flight suit and your steel-toed flying boots — you need the steel toes to keep your feet from being torn off by the instrument panel if you eject — and stumble through the passageways to the briefing room to learn your target and your mission. You swig a cup of bitter coffee and don your flight gear in layers: G-suit, torso harness, survival vest, pistol, helmet, oxygen mask, gloves, flashlight, survival radios. You even wedge a candy bar and a plastic baby-bottle full of water into one of the pockets of your G-suit.

Out on the flight deck your aircraft is waiting. The night is hot and humid in the tropics — you quickly work up a sweat which soaks your underwear and flight suit and runs in salty rivulets into your eyes.

You examine the plane and its weapons with your flashlight. There are a lot of weapons on this A-6 tonight, ten 500-pound bombs, a dozen Rockeye anti-tank weapons at 500 pounds each, and a 2,000-pound belly tank on the center-line station. 16,000 pounds of internal fuel. The plane weighs 56,500 pounds for the catapult shot



— over 28 tons. Over half that weight is fuel and ordnance.

When you are satisfied that all is as it should be, or when you can put it off no longer, you climb the ladder into the cockpit, for this plane is big, with the cockpit rail nine feet above the deck. The plane captain helps you strap yourself to the ejection seat. Perhaps he says something he thinks is funny because you look like you need it.

On signal you bring the machine to life, start the engines, turn on the inertial navigation system, computer, radios, radar, the electronic counter-measures, and check the health of every system. All go.

You sit staring across the deck at the inky blackness, at the other aircraft with other men like you, equally competent, equally scared, also waiting.

Then the yellow-shirt taxi director gives the signal. You use throttle and brakes carefully, attentive to every twitch of his hand and nod of his head. There is little room on the flight deck of an aircraft carrier and most of it is taken. You get what is left over. So you taxi slowly, obediently, alert for the exhausts of other aircraft or grease that will break your tires' adhesion to the anti-skid surface. The sea is out there in that blackness, waiting. As you taxi, you lower and lock the wings and drop the flaps and slats to takeoff position.

Onto the catapult. You feel the clunk as the shuttle captures the nose-tow link and you see the cat officer's signal to advance the throttles to full power.

You shove the levers forward to the stops and take your feet off the brakes. The engines wind up with a howl audible even through the padding of your helmet.

Your breathing is rapid, the salt of your sweat stings your eyes as you waggle the controls and check the engine instruments. The machine trembles from the fury of the roiling air being sucked into the intakes and blown furiously out the exhausts.

You flip on the plane's exterior lights, you signal to the catapult officer you that are ready to fly, then put your head back into the headrest and wait for the shot.

Ahead of you is a hundred yards of dimly-lit deck, then nothing! The night is waiting to swallow you. Inside this machine full of fuel and laden with weapons, you will soon be thrown from this deck into that hot, humid, black air, sixty feet above the night sea, 15 knots above a stall. The enemy is also waiting, also ready — even now they are loading belts of ammo into the anti-aircraft guns and testing their missiles.

Your life will depend on your skill, your knowledge, your courage, your determination.

You blink the sweat from your eyes and take one more ragged breath.

The catapult fires and the G slams you back into your seat as the blackness hurls toward you.

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INTRODUCTION

This simulation takes place just prior to and during the Linebacker campaign in 1972 over North Vietnam. The object of the game is to complete assigned missions and do it with minimum losses of equipment or personnel. Usually, but not always, a mission is part of a larger *operation* and is undertaken by one of several sections of aircraft. For example, a section of F-4 Phantoms could be given a MiG CAP mission, and a section of A-6 Intruders could be given the bombing mission as part of an overall operation to destroy a bridge. In some cases, such as the “Morning Song” operation, only one section of Intruders is used so that the mission is effectively the same as the operation.

You can take the role of a Phantom pilot, an Intruder pilot or the Commander Air Group (CAG) based on a carrier at Yankee Station. The CAG is primarily responsible for planning missions, but he can fly any aircraft in the mission if he chooses to do so. Using this game, you can plan your own missions against famous targets in Vietnam such as the Yen Bai Railroad Bridge or the thermal power plant at Hanoi.

Success is measured by operation completion and safe return of all aircraft. Individual survival, while important, is not the sole measure of success. Moreover, it can be just as important how you win as if you win. If the Rules of Engagement are in force and you violate them, it will not matter how vital the target you hit — you’re headed for a court-martial.

A key feature of this simulation is that there can be many friendlies (up to eight, arranged in four flights of Intruders or Phantoms) as well as many bogeys. Friendlies can have different missions in the same operation. You may be on a bombing run and see either a friendly Phantom protecting you from MiGs or an A-6 attacking SAM sites to protect you. Alternatively, you can do the protecting as an A-6 friendly goes on the bomb run. Moreover, you can take the role of any friendly *at any time*.

No matter what role you take, you can switch aircraft in mid-mission and always be where the action is. If you are flying an A-6 in to bomb a bridge, you can switch to the covering F-4s to dogfight the MiGs coming up to stop you, switch back to the A-6s to make the actual bombing run, and then switch back to the Phantoms to cover the retreat.

In short, with this game you can participate in every facet of the deadly air war over North Vietnam, 1972.

ABOUT THIS MANUAL

You don't have to read every word in this manual in order to see action in southeast Asia. If you prefer to learn by trial and error, you can use the "Five Minutes To Play" card in your package. This will provide you with a command summary and an overview of the game, giving you just enough information to get you started. Then you can always turn to the manual for in-depth information on any of the game components.

On the other hand, if you are fairly new to this kind of game, we recommend you take a little time to read the introductory material in the manual and undertake the first missions described. Flying a Phantom or an Intruder is a challenging task and involves skills that are best learned through step-by-step instructions. Once you feel proficient flying either aircraft, then you can undertake some of the more advanced missions. Missions are described in detail in Part V.

Getting Started (below) shows you how to install the software for the first time and introduces you to some of the conventions used in this manual. It's important that you read that section; otherwise, later sections of the manual may not make much sense.

The Reference Section (Part VI) provides detailed information about the aircraft (both friendly and bogey), the weapons, as well as the menus and keyboard commands available to the player. Turn to the Reference section whenever you want to learn more about your aircraft or its payloads.

HARDWARE REQUIREMENTS

CGA/Hercules Graphics:	512K RAM
EGA/VGA Graphics:	640K RAM
Disk Drive:	5¼" or 3½" floppy drive
Mouse:	Optional
Joystick:	Optional

GETTING STARTED

You can install Flight of The Intruder onto a hard disk, or you can play it directly off the floppy disk. If you are playing off a floppy disk, you should make a copy of your original disk first and put the original away in a safe place. That way, if anything should ever happen to your backup copy, you will still have the original to copy from.

Conventions Used In This Manual

Input Devices: Whether you use a joystick, a mouse or the keyboard, you will find that you often need to choose from a number of different options. To avoid multiple instructions, we will use the term *select* to describe this process, no matter which input device you use.



If you are using a **joystick**, choosing an option involves two steps: first you highlight the desired option and then you select it. Highlight the option by moving the joystick and select by pressing the **fire** button while the option is highlighted.

If you are using the **keyboard**, you can select the option directly by pressing the key shown at the lower right corner of the icon. For example, to select **OK** from the above selection screen, simply press , the key shown at the lower right corner of the icon. Use the arrow keys to move up and down the pull-down menu.

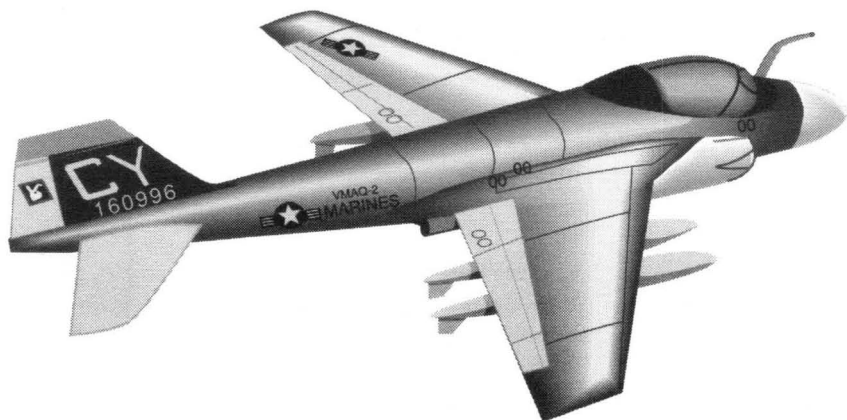
If you are using a **mouse**, you can select the desired option just by pointing to it and clicking the left mouse button. You can also use the mouse to point to a Menu heading, bring down the menu and make a selection from it.

Step-By-Step Instructions: When you need to *do* something (such as press a key or select an option), we will use the following formatting:

 Press  to increase thrust to the maximum value.

This way, you'll be able to distinguish between instructions and explanations with just a glance.

PART I: YOUR FIRST FLIGHT IN THE A-6 INTRUDER



The Grumman A-6 was the response to a need found during the Korean War: an effective, all-weather, close support aircraft that could be flown from carriers.

Several design changes and designations later, the production lines started rolling on the A-6A. Now in 1990, 28 years later, the very similar A-6E is still being produced, an enviable record in anyone's book.

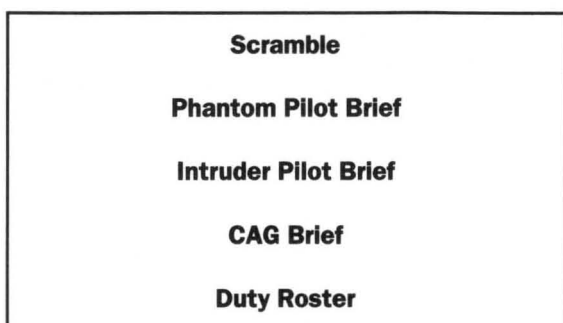
The Intruder is a dedicated bomber. Unlike other naval attack craft, such as the A-4 Skyhawk and A-7 Corsair, the Intruder carries no air-to-air weaponry. It relies on stealth and its ability to fly in any weather to get past defending aircraft, deliver its bombs, and get home.

The "heart" of the A-6 is DIANE, the Digital Integrated Attack Navigation Equipment. It is rumored that the name, belonging to the daughter of one of the design engineers, came first and the designation later. This combination of equipment, which has undergone regular upgrades over the years, essentially consists of a search radar, a tracking radar, and an inertial navigation system. These let the plane navigate in all weathers, seek out and track both mobile and immobile targets, and map terrain ahead. Initial flight checking was a nightmare, but by 1965 Intruders were dropping their 18,000 lb bombloads wherever asked for in North and South Vietnam.

The first thing you need to do is get your name on the Duty Roster. Initially, the Roster just has "Rookie" in every name slot.

- ☛ Select the name at the top of the Duty Roster.
- A dialog box appears. This is where you will enter your name and callsign. (The callsign is always used over the air in Vietnam for security reasons. See the Glossary for some examples).
- ☛ Press **[Del]** to clear the name field and type in your name. You can use **[Backspace]** for editing.
- ☛ Highlight the callsign field and enter your callsign. Select OK.

Back at the Corridor scene, you are faced with the following options:



- ☛ Select Intruder Pilot Brief. You will be moved to the Briefing Room. The board in the Briefing Room is being used to describe an operation. The icons show the options available to you. In this case we want to cycle through the operations until we get to "Morning Song."



- Keep selecting “Next Op” (↓) until “Morning Song” appears. Select OK (Enter).

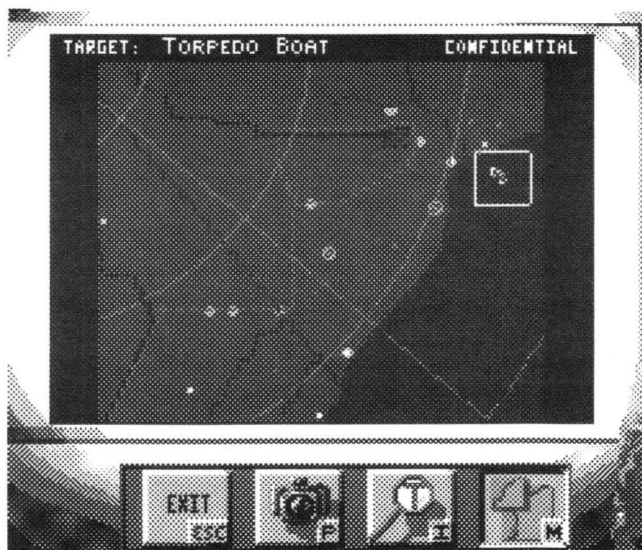
You are presented with a new set of icons (see figure below).

These new icons provide you with information about the operation, giving you details about stores, your aircraft, the waypoints, and other relevant data.



- Select I for information about the Morning Song operation.

The objective of this mission is to destroy a torpedo boat. Nearby barges have been designated as the secondary targets. Unless you are feeling especially skillful, don't bother with these on your first mission.

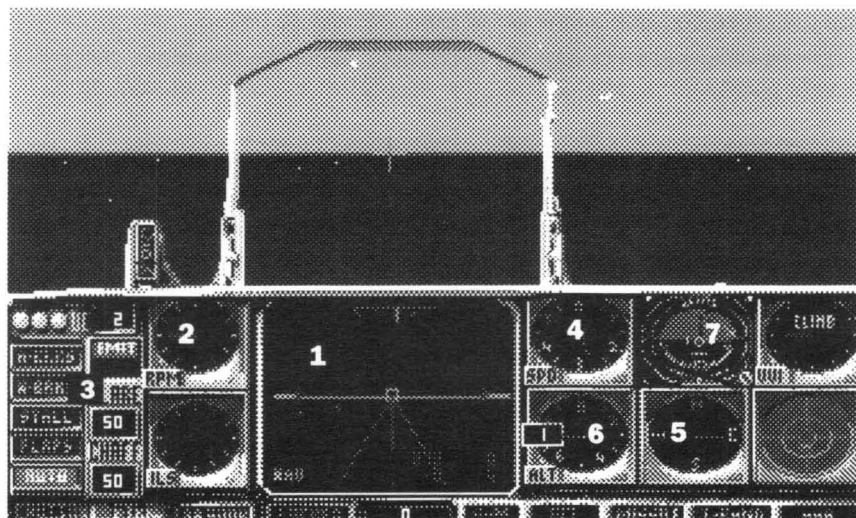


The torpedo boat is a fairly soft target, and so the Walleye is the ideal weapon. It is a relatively easy weapon to use. (For more information about the Walleye and the other weapons, see Part VI later in this manual).

If you like, you can select the other icons to learn more about the operation. Just

follow the selection procedure appropriate to your input device. As soon as you are ready to fly your Intruder, select OK from the above set of icons.

You now find yourself in the cockpit of an Intruder on the catapult.



Cockpit Orientation

Take a few moments to familiarize yourself with the Intruder. Look at the components of the cockpit and compare them with the above illustration. You don't need to know what every item represents just now — only the ones you will be using on your first flight. The cockpit and all its components are discussed in detail in the Reference section.

What you need to know for your first flight:

- 1. Combined moving map/radar.** The map is always oriented with north at the top. Your position is represented by a pulsing square on the display. Sometimes a smaller square is also displayed. This is the position of a MiG referred to by a recent message at the top of the screen.
The radar mode changes depending on the weapon selection and delivery mode. In this first mission we will be using the Walleye missile, so the screen actually shows a TV picture relayed from the missile.
You can toggle between Radar and Map by pressing .
- 2. RPM gauge.** This represents the percentage of power that has been applied with the throttle ( key). The example shows 100% power being applied.
- 3. Wheel brake light.** The light is off, signifying that your wheel brakes are not on.
- 4. Airspeed dial.** Shows the Intruder's true speed in knots (KTS).

- 5. Compass.** Displays the heading. The following table shows the relationship between compass points and degrees from the vertical.

0 degrees	north
90 degrees	east
180 degrees	south
270 degrees	west

- 6. Altimeter.** Displays the height in feet. The big hand rotates 360 degrees for every 100 feet. The little hand rotates 360 degrees for every 1,000 feet. The digits record the altitude in 1,000s of feet.
- 7. Attitude Director Indicator (ADI).** The ADI helps to orient your aircraft to the horizon while pitching and rolling. Use visual contact with the real horizon to orient the aircraft directionally.

Before taking off, take a look at the other views from your cockpit:



Use the combination of the **[Shift]** and numbers 1, 3, 4, 6, 7, 8 and 9 on the number pad to shift your viewpoint around the cockpit. The position you are looking at corresponds to the key on the number pad with **[Shift] 8** as the forward view. Thus, **[Shift] 7** is the left forward view, **[Shift] 9** is the right forward view, **[Shift] 4** is the left view, **[Shift] 6** is the right view, and so forth. This can be duplicated on the **normal keyboard pad** by using numbers **3** – **9** without the **[Shift]**. In this case, the keys travel from **3** (left back 45°) to **4** (left) all the way around to **9** (right back 45°). This means that **[Shift] 8** on the number pad is the equivalent of **6** on the keyboard. **[Shift] 8** and **[Shift] 9** (or **6** and **7**) give you all the necessary instruments, there are no important instruments in any other portion of the Intruder cockpit.



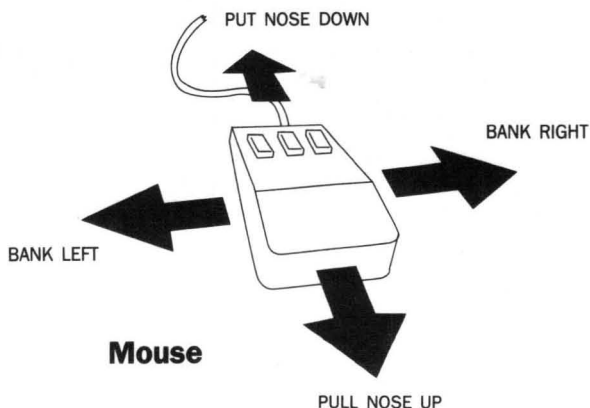
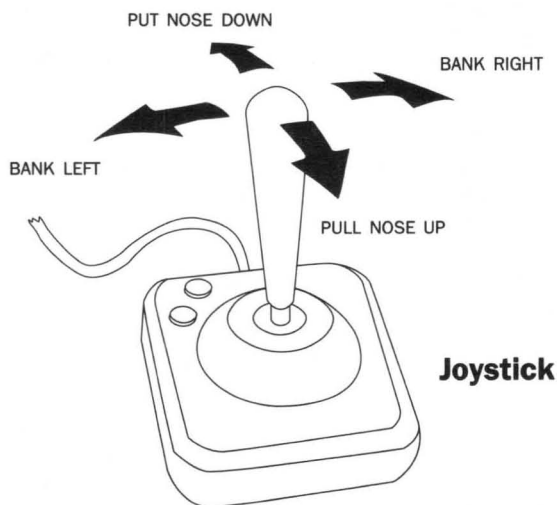
Go to the right 45° view **7** or **[Shift] 9** — you'll learn more about the additional instruments later. For now, note the position of the Multiple Weapons Selection Panel. You'll need this when the time comes to select the Walleye missile.

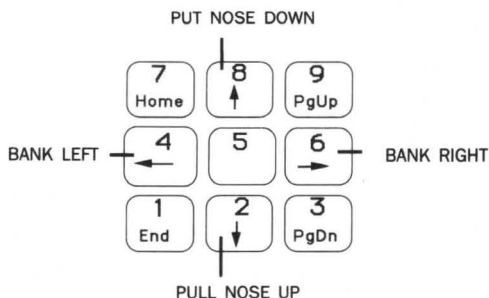
Even though the other six views do not contain any instruments, you should be looking around all the time during a flight. **Remember that your six o'clock view (directly behind your plane) is your most vulnerable position.** This means that even though your six o'clock view does not give you any instrument data, it can let you know if you have a bogey on your tail. There is a further complication in that you cannot look directly back because your plane is in the way. You have to use one of the Back 45° positions and weave to see what is on your tail.

Use **[Shift][8]** or **[6]** to return to the front view.

Takeoff Procedures and First Flight

Controlling Your Aircraft





Directional Control — “Flying with the Stick”

Fighter pilots control the directional movement of their planes with a hand control commonly known as *the stick*. The accompanying diagrams show how to control your A-6 Intruder using either joystick, mouse or keyboard.

Throughout this manual, references to *the stick* apply equally to operations using either the keyboard, the mouse or the joystick. For example, “pull back on the stick” means either “press the down arrow on the numeric keypad,” “move the mouse toward you,” or “move the joystick back toward you,” depending on the input device you are using. Refer to the above diagram for the other directional equivalents.

Note: When you use the keyboard to control directional movement, the aircraft’s “stick” automatically centers itself after each keypress, allowing you to maintain a constant rate of turn. In other words, if you press the Left Arrow key once, your aircraft will bank left at a small constant rate and continue to do so until you make another directional change. If you want to increase the degree of turn (or any other directional change), you need to hold the key down for a longer period of time. However, holding the left key down will eventually roll the plane all the way over. To make a fast turn, you must hold down both the Left Bank key and the Pull Nose Up key, which puts the plane into a sharp turn. The longer you hold the Pull Nose Up key down, the faster the turn (other things being equal). Things are slightly more complicated when you use the normal (rather than the “super”) engine.

Pause: You can pause the game at any time and put everything into a state of suspended animation. To do this, press **[P]**. Press it a second time to resume play. Note that this “stops the world.” You can go get a cup of coffee or have dinner without worrying about the mission being completed without you. While pausing, you can still move around the different views and different aircraft. The rotation and zoom options (see page 138) also work during a pause.

So Let’s Go Already

OK, OK. So you think you’re ready for your first flight? All right, let’s go.

You are now under the Catapult officer’s orders. When you are ready:



Press **[Ctrl][L]** to launch the Intruder. If you do not launch within 5 seconds, you are automatically launched.

In two seconds you are at the bow of the carrier 60 feet above sea level (SL), doing about 145 KTS. Don't sit back and enjoy the view just yet; you've got work to do. First, you need to put the landing gear away:

Press **[G]** to get the landing gear up. Three lights in a row in the upper left of your control panel will go out and you will hear the sound of the gear retracting.

Next, you need to start climbing slowly, and increasing your speed:

Pull back slightly on the joystick (or press **[2]**) to start a 4,500 ft/min climb. The radar screen gives a digital readout of speed and climb rate in the upper left corner.

You can use ADI rather than VVI to monitor your climbing rate. See Part VI for more information on these instruments.

At 170 KTS, press **[F]** to put your flaps up. The "Flap" light on the left side of your control panel goes out.

Next you need to level out a little at about 500 feet:

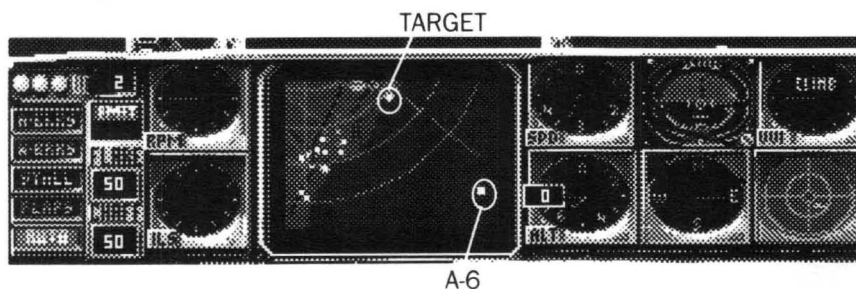
At 500 feet, level out by gently pushing the stick forward (or press **[8]** on the number pad). Stop once you are straight and level.

When the ASI shows about 400–450 KTS we climb to our cruising altitude:

Pull back on the stick (or press **[2]**) to achieve a 30 degree rate of climb. Level out at 10,000 ft. and set the throttle to achieve 400–450 KTS True. This should require about 86% RPM.

OK, so you're two miles up, and you have to find your way to the target (remember, you're on a mission). This is a good time to consult the map.

If the map isn't showing, press **[C]** to bring it up.



At this stage you can fly on automatic pilot or manually. Autopilot is available because the waypoints to the target have been programmed into the on-board computer. By invoking the autopilot, the computer automatically steers the aircraft to the waypoints in this mission: the carrier, the torpedo boat (the target) and back to the carrier.

Press **[A]** to engage the autopilot.

The aircraft should bank and turn towards the first waypoint. This gives you a chance to get used to the aircraft. You can disengage the autopilot by pressing **[A]** a second time if you wish to experiment with the aircraft controls. To get back on course, press **[A]** to re-engage the autopilot.

If you are still some way from the target, you can press **[Tab]** to accelerate the action and press **[Tab]** again just short of the target. The acceleration automatically turns off any time you are being threatened by MiGs or SAMs.

Note that the accelerator key affects all aspects of the operation, so that all aircraft are teleported a distance in proportion to their speed. Your wingman goes with you and the MiGs are still after you.

First Strike Mission

Now it's time to select your weapon. As we noted earlier, the torpedo boat is a relatively "soft" target, making it ideal for the Walleye missile. It is "soft" because the boat is lightly armored and just steaming out to sea; it has not yet built up speed.

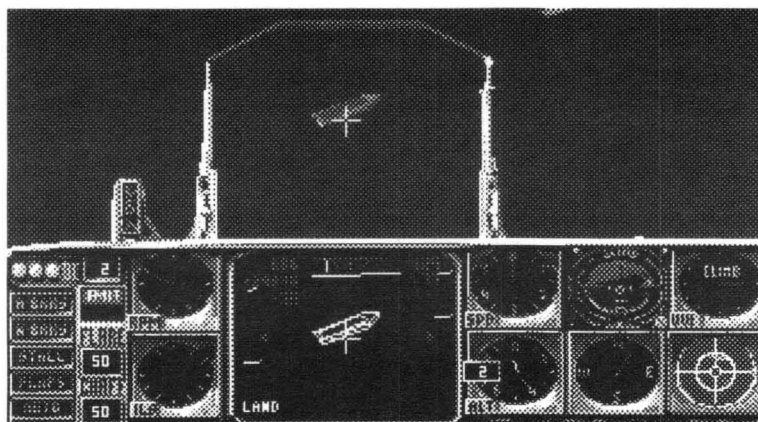
Press **[7]** on the keyboard to go to the weapon selection panel of the A-6. Press **[Backspace]** to toggle through the Air-to-ground weapons to select the Walleye missile, and **[Home]** to arm the missile.

The Walleye is now ready to go. Next you need to target the missile and release it at the right moment:

Dive at the torpedo boat. The radar will show a TV-like image of the boat. Line up the screen's cross hairs on the image and press **[Spacebar]** to fire the missile.

If you were successful in hitting the target, you should see an explosion. If not, well, better luck next time. In either case, it's time to head back to the carrier, before you start running low on fuel or a MiG gets on your tail.

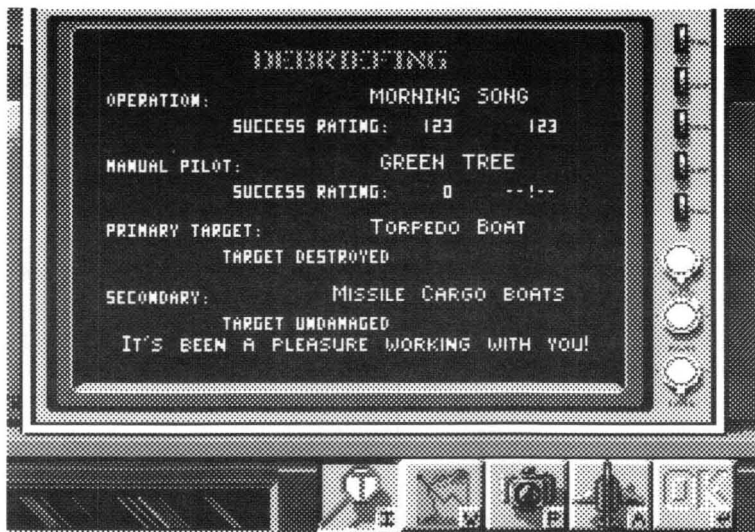
If you're on autopilot, your Intruder should already be heading back to the ship. If not, press **[A]** to engage it.



Landing

You may not feel ready to attempt a manual landing at this stage, so try an auto landing by selecting **[A]**. Alternatively, you can bring up the menu bar by pressing **[F10]**, using **[→]** to go to the FILE menu, then using **[↓]** to move the highlight to End Mission and selecting it by pressing **[Enter]**. This takes you directly to the Debriefing Room no matter what stage of the game you're in. Needless to say, this procedure is for the more lily-livered players, those who should have been weeded out at the recruitment office. If you must use it (or if you just want to learn more about menu options), see the Reference section. You can also consult the Reference section for information about manual landing.

When your hook has caught the wire and the aircraft has slowed down, you are automatically moved to the Debriefing Room. Look at the TV screen to see how successful you were.



The statistics for the current mission are displayed on the Debriefing Room monitor. The VCR buttons give you the chance to see more detailed results of the mission by pressing **[I]**, a check to see how well you met your way-points by pressing **[W]**, a chance to review any photographs you took by pressing **[P]**, or the videotape from your airplane's video recorders by pressing **[A]**, or you can move on to your next mission by pressing **[Enter]**. See Part V for information on analyzing these statistics. If you have earned a decoration you may get pulled out of the debrief for a photo opportunity. If you have done well, a word with your boss comes next; look to see if you are on the Sierra Hotel Notice on his wall. The Sierra Hotel Notice lists the top ten pilots that have played the simulation. The derivation of the term Sierra Hotel is in the Glossary.

A Typical Intruder Mission

by Lt. Cmdr Jack McGinn, USNR

It's 0230; you're sound asleep after a tough bombing mission in the North last night. The carrier's been on station for three weeks now in monsoon season and the constant foul-weather flying (ceilings have been averaging 300 ft to 500 ft with visibility often down to 1 to 2 miles in rain) is draining you. The stateroom phone rings; you have to fly a strike in the North against a high value target. It's time to get your act in full gear. The day has just begun.

After you get the basic details from the duty officer in the Ready Room, you meet your B/N (Bombardier/Navigator) and visit the CV's intel center for the latest information on the target (photos, defenses, restrictions, other planned attacks) and the latest SAM threats affecting the general flight route. The preflight planning includes ingress and egress route selection to take advantage of terrain masking and minimizing enemy defenses, weapons load and release calculations, selection of attack type, briefs on the communications plan, and basic aircraft takeoff planning data.

After preflight planning is complete, you give the duty officer the weight chit which has the aircraft launch weight; the catapult officer and crew need this for your cat launch. Then it is on to your squadron's Maintenance Control space to read the aircraft data book to see what maintenance has been performed and current status of all aircraft systems. After a quick stop in the squadron paraloft to suit up in your flight equipment — G-suit, torso harness, survival vest, helmet, oxygen mask and navigation publications — you check your drinking water before leaving for the flight deck.

It is very dark on the pre-dawn flight deck as rain continues to fall from the low ceiling. Your plane captain briefs you on his inspection of the aircraft. You tell him to keep the canopy closed 'till you and your B/N perform the mandatory preflight inspection of the aircraft so the seats won't get too wet. It's going to be a long flight so you don't want to sit on a cold, wet ejection seat all flight. After the inspection, you climb in the cockpit and strap yourself into the ejection seat before commencing the aircraft prestart checklist.



Meanwhile, the B/N is going through his prestart checks. After engine start, he brings the computer system and radar on-line and begins to enter the turnpoints and waypoints the computer needs for your flight route. After start and post-start checks are completed, you signal you are ready for launch. The Ordies pull your bomb rack safety pins. Using flashlight wand signals, a taxi director instructs deck crewmen to "break the aircraft down" (remove its tie down chains). He taxis you forward to bow catapult number 1. As you approach the catapult you acknowledge the "Weight Board" (it has the weight you sent up earlier on the weight chit); he signals you to drop your tailhook (a check to ensure it will come down) and to spread your wings. You lower the flaps and slats, perform your takeoff checklist, and make sure the ejection seat is armed. Following the director's and cat officer's signals, you taxi into the shuttle and are signalled to run up to full power. One last check of the gauges, a good wipe out of all the control surfaces, a "good to go" from your B/N and you turn on your lights as a signal to the cat officer; you're ready to launch. About 2 seconds after he touches the deck with his wand, the cat fires and you go from 0 to 150 KIAS in less than 2 seconds. With a full load of Mk82s, that max weight cat shot was a vicious attention-getter in the absolute dark of the predawn clag.

After you clear your head, you have already raised your gear, started a climb straight ahead and accelerated to raise the flaps and slats while the B/N calls the CV to say you're airborne. While executing the departure procedures and checking in with the appropriate airborne controllers, the B/N brings his system to life, providing you with basic navigation information to steer to the coast-in point. Prior to going feet dry, it is time to review the weapon system settings ensuring the proper wing stations are selected and the weapon system is ready to go except for the Master Arm Switch. You've checked that the passive EW system is operational and the active ECM system is in Standby, ready to go. You also take one last look at the chaff, flare and jammer panel to ensure it is ready for pilot activation when the SAMs come up.

It's still black outside as the driving rain beats on the windscreen. Approaching the coast-in point, the B/N turns his radar on for one sweep to update his navigational system. Keeping the radar silent for as long as possible will help to not alert the enemy's defenses. As you prepare to hit your first point, you descend to your preplanned ingress altitude and select the terrain clearance display on your VDI. The B/N is glued to the radar scope as you start to weave your way through the mountains on the route. Being low and masking with the terrain, the SAMs know you're there but they can't get a good lock. The EW indicator is alive with strobes. With the B/N talking from his radar display and you viewing the terrain contours building on the VDI, you weave through the mountains and valleys at 500 ft, 420 KIAS. Your world is the B/N and the VDI.

Nearing the target, a power plant tucked in a valley, you accelerate to 500 KIAS (Knots Indicated Air Speed). You'll need all of the energy you can get for maneuvering when the SAMs start flying. The approach from the initial point (IP) to target was planned to achieve the best target aspect angle and time enough to perform the system attack. About 15 nm out, the B/N selects the Master Arm and tells you the pickle is Hot. You both review the weapons control panel to ensure the proper stations and type of system attack are selected. The plan is to stay low, so you ensure the bombs are set up to drop in the retarded configuration. Drawing closer to the target, the B/N steps the system into attack giving you finer steering information on the VDI. As the weapon solution is reached, the in-range marker comes on the screen telling you to depress the trigger any time. You pull the trigger, the symbology on the screen jumps and you feel the airplane leap up as the load of 500 pounders falls away. You've never seen the target.

In and out of clouds, tracers start to fly as the enemy now knows where you are. The B/N is glued to his scope and you to the VDI's terrain display as you jink wildly and fly as low as you can stand, flying the egress route back to the ship. The B/N gives you heading corrections as you start to get to close to a ridge line building rapidly in front of you. You get a missile launch indication on your EW panel and hear the tell-tale audio tones as you execute evasive turns to defeat the missile track. You start the chaff program hoping it will decoy the missile. A thundering roar goes off nearby; the missile missed. You deviated off course to evade the missile, the B/N gives commands for a heading to the next turn point. Finally, the EW equipment quiets down and you go "feet wet" and start a climb to head back to "Mother."

The clouds surrounding the aircraft are starting to turn from black to grey as the new day appears. Your Bombardier checks in with Marshall to get the latest weather, marshall radial, and altitude assignment. You're emotionally drained from the gut wrenching low level flight. With the weather at a 300 ft ceiling and 1 1/2 nm visibility in rain with a pitching deck, you have to dredge up every last ounce of concentration to fly a flawless approach. After getting established in the IMC marshall stack and getting assigned your push time, it's time to get ready for the approach. You lower your hook now so you won't forget it later. Fortunately, the ACLS needles have been working in this bad weather as you test them as OK. Finally, you calculate your landing weight and optimum approach speed and get rid of any excess gas so you can trap aboard with the proper weight.

It's your turn to push out of the stack and start your approach. You hear the approach controllers vectoring a low fuel state Phantom to the duty tanker and another just boltered. It doesn't sound like it is going to be easy. Passing through 5,000 ft at 250 KIAS you break your rate-of-descent and continue to 1,200 ft where you level off

and drive in. At 10 nm the controller tells you to delay lowering your landing gear 'till 8 nm. At 8 nm you go dirty by lowering the gear, flaps, and slats and start to slow up to 150 KIAS while performing your landing checklist. At 6 nm you put the speed brakes out and start slowing up to your on-speed airspeed. You continue to fly the TACAN final bearing course to the point you hope to get needles.

The controller, who hasn't talked to you except to acknowledge you are on his net and that call at 10 nm, comes up at 4 nm to say he's sending you ACLS information and to "call your needles." You've been working hard to follow the final bearing in as best as possible so you can get a good start on the approach. You call the needles as centered and slightly high. That's OK because you are approaching the glidepath from below. The controller says to fly your needles. It's still raining heavily as the rain pelts the windscreen. You keep the needles centered and keep your instrument scan going so you don't lose track of AOA, altitude, or lineup. You remember lineup especially. You saw your squadron CO and pilot land too far right one night, clip a few planes then disappear forever in the water.

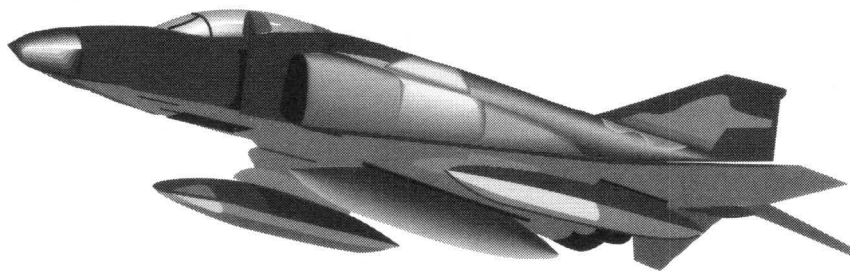
It's now a mile to go to the CV and you're concentrating in the cockpit. The B/N says he can't see anything yet. If you don't see anything soon, you'll have to execute a missed approach and try again. At $\frac{3}{4}$ nm the controller says "Intruder 506, $\frac{3}{4}$ nm, call the ball" as he hands you off to the LSO for the visual portion of the carrier approach. You tell the LSO "Intruder 506 is Clara" which means you can't see the ball. He says "Roger, Paddles contact, keep it coming, you're looking good, a little power." Suddenly the B/N sees the ship just as you do. You have to make a slight lineup correction to the left but the ball is solid in the datums. Suddenly you touch down and cobb the throttles then feel that reassuring tug of the wire. As you clean up and taxi out of the landing area, you breathe again. You're emotionally exhausted. After shutdown and debrief it's time for breakfast and your second flight of the day.

Welcome to the world of the All Weather Attack Pilot.

Jack McGinn has been a Naval Aviator since 1979 and has piloted A-6E's and A-6E TRAMs with the VA-75 "Sunday Punchers." He has 1,850 hours in the A-6 and has had 300 traps. He is now in the Naval Reserves with Tactical Air Control Squadron-24 and is the owner of an aerospace consulting company in Norfolk, Virginia.

You can move through the screens that follow by selecting OK each time. This will take you back to the Corridor scene, ready for your next operation. Selecting Scramble gives you a repeat of the previous mission. You could try a more adventurous Intruder mission if you like, but you're probably itching to climb aboard an F-4 Phantom. If so, just go to the next page...

PART II: YOUR FIRST FLIGHT IN THE F-4 PHANTOM



"It was heavy. It proved the aerodynamic principle that if you have enough power, you can fly a brick..."

"It had honest flight characteristics. It was a very stable gun platform, albeit with no gun. And I never thought I'd admit it, but in the end, I came to love the airplane..."

Both quotes from Col. Dennis J. (Deej) Kiley,
U.S. Marine Corps.

The F-4 Phantom II started as an enhanced version of McDonnell Aircraft Company's F-3H Demon, a lackluster fighter designed for a brief career with the United States Navy. The original design was for an attack fighter but in April 1955, the Navy said that a heavy two-seater attack plane was not the answer to their prayers. However, a fleet defense interceptor that could fly off an aircraft carrier, remain on station 250 miles from the carrier, intercept enemy MiGs and not come home for up to three hours would be just what the Navy doctor ordered. Oh yes, guns are obsolete, just put on Sparrow radar-guided missiles.

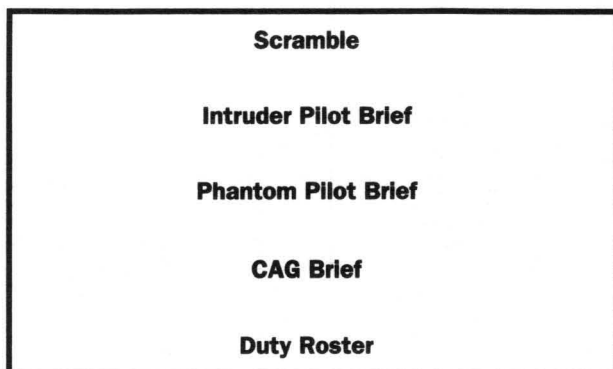
We can do that, said McDonnell. And sure enough, they did.

The Air Force, also looking for a fighter, picked up on the new airplane and joined the Navy in setting an impressive list of records.

The Phantom II (the Phantom I was a little-used McDonnell design from the Korean era) became the fighter of choice for both services in Vietnam. They went through many changes over the years, but the versions most commonly in service during the Vietnam era were the Navy's F-4B and F-4J and the Air Force's F-4C, F-4D, and the gun-armed F-4E.

For the most part, F-4s are no longer in any U.S. military inventory, except for the RF-4C's still used by many Air Force Reconnaissance units.

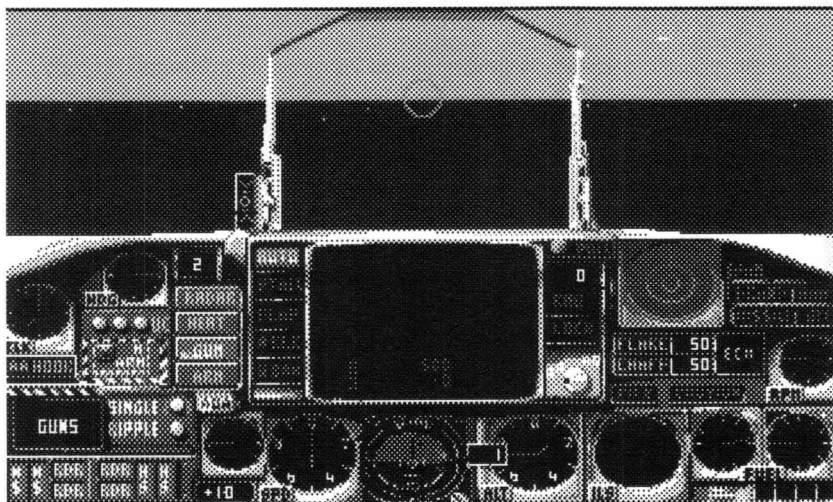
You have just completed your first Intruder mission and are back at the Corridor scene. You have the following options:



 Select Phantom Pilot Brief, and then select BarCap.

You find yourself on the catapult ready for an immediate launch to intercept an incoming air threat. Your wingman will be launched seconds behind you. This will be your opportunity to practice wing tactics.

Cockpit Orientation



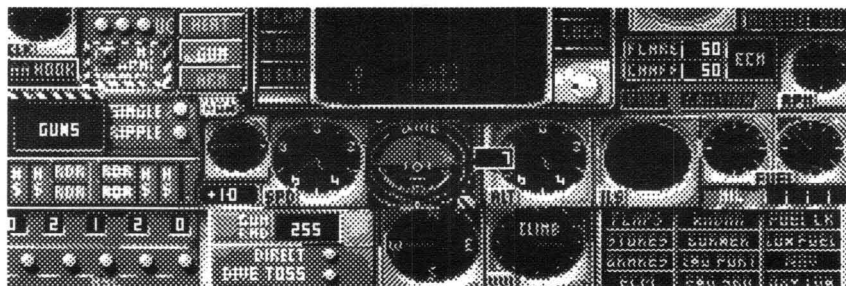
You will probably notice some similarities between this and the A-6 cockpit. More important, however, are the following differences:

The F-4 has a four-stage fuel afterburner (AB) (Select to increase, to decrease). Use full AB during the launch. You can also use AB to go faster.

Unlike the A-6, the views are symmetrical, so that the right forward 45° view looks out of the aircraft. This is because the F-4 pilot and his RIO (Radar

Intercept Officer) are placed in tandem, with the RIO behind the pilot. In the A-6, the pilot and his B/N are effectively side-by-side.

There is also a look down view. Press **[J]**, and note the position of the Multiple Weapon Selection Panel. Press **[C]** to get back to the usual cockpit view.



Takeoff Procedures and First Flight

Controlling Your Aircraft

Note that joystick and keyboard controls are the same as the A-6. Takeoff and landing procedures are also similar, except for the use of the afterburner on takeoff. You may want to review the earlier section describing aircraft control on pages 16–17.

About the BarCap Mission

You will be vectored to incoming threats by Red Crown, the radar picket ship. Stay in the air as long as possible by using sensible fuel management. When you are Bingo fuel (just enough fuel for a safe landing) or Winchester (out of missiles and ammunition), return to the Carrier by selecting the Landing waypoint by pressing **[.]**.

When you are ready to take off:

- ☛ Press **[Ctrl][L]** to launch the Phantom or wait for automatic launch.

Note that afterburner uses fuel at a tremendous rate, so cut back as soon as possible. Don't sit at sea level with full afterburner.

- ☛ Follow the same procedures as you used with the Intruder to climb to 1,000 feet. Kick up your speed to 600 kts.

Within seconds you are at 1,000 feet and following your patrol pattern. Now it is time to look for bogies (unidentified aircraft) that might threaten your home carrier. In Vietnam, the North Vietnamese wisely refrained from attacking American aircraft carriers in international waters. This made BARCAP a very dull duty for Navy fighter pilots. For this game, however, MiGs attacking the carrier are a very real threat. Keep your eyes open.

-  Look for the enemy by following the directions printed across the top of your screen. Remember, that 12 o'clock is directly in front of you and 6 o'clock is directly behind you. You want to have enemies in the former position and do not want them in the latter position.
-  At a distance of less than 27 miles, it is possible to get radar detection of your enemies if they are within 60° of the nose of your plane. If your radar is on (select **R** if not) and you are pointing at the MiG, you should get a green blip on the radar screen. However, this means that the MiG will detect your presence easily.
-  Also, you get a black diamond on the threat indicator (the circular screen on the upper right of the control panel) if the MiG has its radar turned on. (For this beginner's game all MiGs have their radar on.) This screen also shows other aircraft, ships and radar stations that illuminated your plane with their radar. The range for this passive radar screen is variable, between 15 and 30 miles.
-  Finally, if all else fails, *look* for your targets. You can see about eight miles. Actively switch to different viewpoints within the cockpit. Like the A-6, you cannot look directly back over your tail; your RIO is in the way. Do not shoot at your wingman.

Going Into Combat

-  Select **J** to get the look down view.

This gives you a view similar to what you would get if you kept most of your attention inside the cockpit. You want the Multiple Weapons Selection Panel on the bottom left of this view.

-  Use **Return** to toggle between the Sparrow and Sidewinder missiles and your 20mm gun.

As you toggle through the weapons you should see:

- One of the rows of five horizontal lights illuminated when the Sidewinder is selected. This represents the selected station on the Phantom's wing or centerline. (The guns and Sparrows do not light up because the guns pod is internal and the Sparrows are mounted on their own special stations.)
- The weapon type displayed in text in the display box over the station representation.

Above the illuminated station light you will see the number of weapons available in that station. Above this set of numbers you will see some "RDR" and "HS" lights. These light indicate how many radar-guided (Sparrow) and heat-seeking (Sidewinder) weapons you have. Gun rounds remaining are shown to the right of the Multiple Weapon Selection Panel.

Use the Sparrow for targets more than two miles away, the Sidewinder for targets you are *following* that are within two miles, and the gun for targets within 500 yards.

Using the Sparrow

The AIM-7 is a radar-guided missile, so using it is a matter of getting a radar lock on the target.

 Toggle **[Enter]** until AIM 7 appears in the display box, the Radar light comes on in the menu to the left of the radar screen, and a green cone circle appears on the radar screen.

 Steer to keep the green blip inside the inner green circle. The range figure (lowest right number on the radar screen) will continue to count down the range. When you are within Sparrow range (2–14 miles) the range light to the right of the radar screen comes on. If you have been keeping the target within the green circle, the Lock light should come on soon after. Two vertical lines on either side of the blip also appear when lock has been achieved. These lines are called **captain's bars**.

 Switch on the Master Arm (select **[Home]**) when the MiG is in range and fire (**[Spacebar]**) when the lock light comes on. The Sparrow will guide to the target so long as you keep the target blip in captain's bars until it hits.

Sparrows were the weapon the Phantom had been designed to carry. They were meant to be a far-ranging missile that could hit a target the pilot could not even see. The F-4 pilot was not supposed to need a gun because he would knock down all of his targets from long range. It had not been used in combat before the Vietnam War and had a very low kill ratio. Only one out of 12 fired hit a target. Launch two Sparrows at the same time to increase your chance of success.

Moreover, the Rules of Engagement over Vietnam usually called for visual identification of an enemy before shooting, therefore negating the presumed superiority of using the Sparrow.

If you launch without a lock-on, a hit is unlikely. However, launching in these conditions is not always foolhardy. At least a launch is likely to unsettle the bandit. This can be important if the bandit has you or another friendly in his sights.

NOTES: In this beginner's mission, you are being given a little easier time of it than the Navy had. The missile's hit probability has been greatly improved. If you select a harder level (see Part VI), you will have the same problems the Navy did.

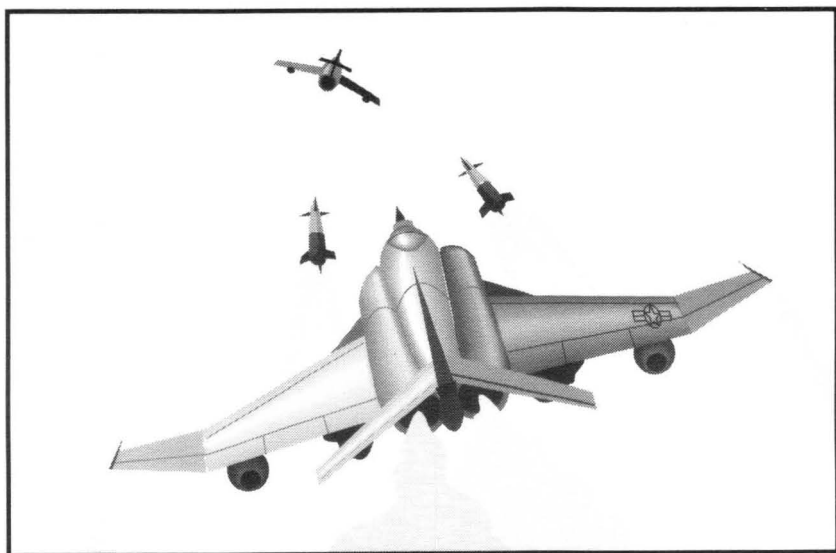
Using the Sidewinder

The AIM-9 Sidewinder is a heat-seeking missile whose descendants are still being used today.

- ☛ Select the Sidewinder by toggling **[E]** until AIM 9 appears in the weapons box, the Heat light comes on in the menu to the left of the radar screen, and a green cone circle appears on the radar screen.
- ☛ Find your target in the same manner you used for the Sparrow. When the target is within Sidewinder range (1–2 miles) and you are pointing at the enemy's rear so the heat-seeker head on the Sidewinder can find its target, select **[Home]** to master arm your weapons and use **[Spacebar]** to launch missiles at the target. The Sidewinder is a “fire and forget” weapon so you do not need to point at the target after missile release.

NOTES: Sidewinders also had a low kill ratio in Vietnam, though not as bad as the Sparrow. Among their problems was that they were not the all-aspect weapon they are now. The pilot had to be on the tail of the target so the heat sensors in the missile could get a good thermal picture of its exhaust.

For ease of play, the default “easy targets” selection on the Options Menu allows you to shoot at any aspect of the target with a fair chance of success. The “medium targets” option requires you to shoot at the bandit's rear quarter to get a lock. The “hard targets” option requires that you continue to point at the bandit's rear while the missile is in flight.



Using the Vulcan M61A1 20mm Cannon

The Navy never intended for the Phantom to carry a gun and, even after the need for guns became obvious, never really liked mounting guns on their Phantoms. The original design called for an entirely missile-armed weapon, and only the U.S. Air Force mounted the internal 20mm provided in this game. F-4J's, the type of Phantom being flown here, did have an optional externally mounted 20mm gun pod, however, so we are using that as an excuse to give you lots of opportunity to shoot up the opposition. If you insist on doing things The Navy Way, never select guns in your dogfights.

Only a few Navy F-4s actually carried the external pod, and it was strictly meant as an air-to-ground weapon. It was very inaccurate for air-to-air use.

 Select Guns by toggling either **[Enter]** or **[Backspace]** (you can use **[Backspace]** because Guns can also be used against ground targets) until GUNS comes up on the display box, the Gun light comes on, and the green cone circle disappears from the radar screen.

Guns should only be selected when the target is in visible range. For initial detection, use the same methods you use for missile targets.

 Use **[H]** to switch on the Master Arm when the target is within a mile and fire (using **[Spacebar]**), when ready.

For best results, do not shoot until the bandit fills your screen. The bandit should at least be bigger than the sighting circle. Remember that you and the bandit are moving. You need to use what is called deflection shooting (or just "leading a target"), which simply means you have to shoot where the enemy is going to be, not where he is when you press the trigger.

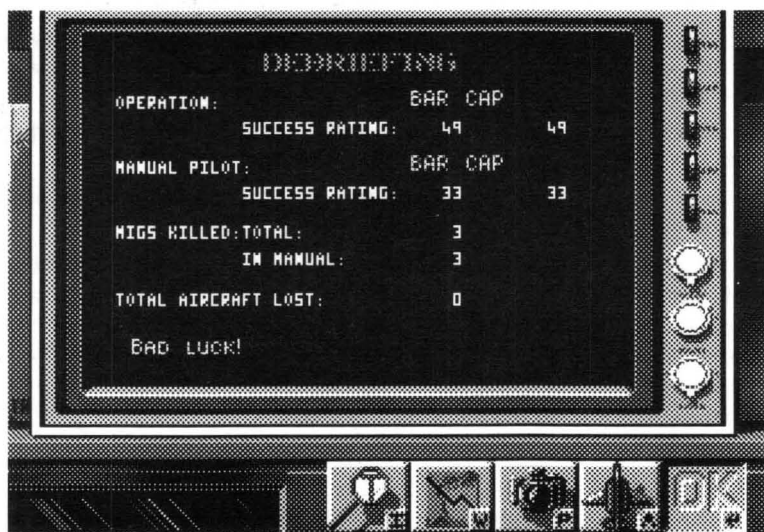
NOTES: More than one hit is needed to kill a MiG. Successful hits are marked by mini-explosions on the surface of the MiG.

Once all the bandits have been shot down, you should head back to the ship. You can press **[A]** to engage the autopilot to take you directly back to the ship.

Landing

You may not feel ready to attempt a manual landing at this stage, so try an auto landing by selecting **A**. Alternatively, you can bring up the menu bar by pressing **F10** and selecting End Mission. This takes you directly to the Debriefing Room no matter what stage of the game you're in. Needless to say, this procedure is for the more lily-livered players, those who should have been weeded out at the recruitment office. If you must use it (or if you just want to learn more about menu options) see the Reference section. You can also consult the Reference section for information about manual landing.

When your hook has caught the wire and the aircraft has slowed down, you are automatically moved to the Debriefing Room.



The statistics for the current mission are on display in the Debriefing Room. See Part V for information on analyzing these statistics. If you have earned a medal or badge you may get pulled out of the debrief for a photo opportunity. A word with your boss comes next; look to see if you are on the Sierra Hotel Notice on his wall. The Sierra Hotel Notice lists the top ten pilots that have played the simulation. The derivation of the term Sierra Hotel is in the Glossary.

You can move through the screens that follow by selecting OK each time. This will take you back to the Corridor scene, ready for your next operation. Selecting Scramble gives you a repeat of the previous mission.

Flying The F-4

by Col. Phil Hanley, U.S. Air Force (ret.)

On a cloudless day in August 1984, at Holloman AFB, I flew my last flight as an active duty TAC pilot. That flight was made in the magnificent F-15 Eagle, a plane I had flown and loved since 1977. Its flawless handling qualities are transferred through a hydro-mechanical stick that makes it feel smaller in your hand than the comparatively tiny F-5E. On my second ride in at Luke AFB in 1977, I did a triple Immelmann — a vulgar display of brute power. Its huge bubble canopy affords the pilot an unrestricted view of his 6 o'clock, an attribute that had been sacrificed by aero design engineers since the era of the F-86. However, as much as I loved the F-15, to this day, absolutely nothing stirs my memory banks or brings chills to my spine like the crack and roar of an F-4's afterburners on takeoff roll.



First of all, it looks like a fighter ought to look with its dropped nose and stabs, canted wing tips, and no-nonsense "don't mess around with me" stance. Anybody looking at the business end of this fighter (especially an enemy) has got to immediately understand the purpose for which it was built. When the Thunderbirds and the Blue Angels flew them in their demonstration teams, the ground shook, babies cried, and dogs barked. They were never better, and it was a sad day when the Thunderbirds were forced to trade them in for T-38s (which looked and sounded like a Tinkertoy by comparison). But as great as it was in air shows, it was far more impressive doing the job it was designed for, a fact indisputably demonstrated for over seven years during thousands of sorties in the skies over Southeast Asia (SEA).

The All-Around Fighter

Officially named the Phantom II, but affectionately called "Double Ugly" or the "McDonnell Rhinoceros" by the men who flew her, the F-4 will surely join great fighters of the past like the Spitfire, P-51, and F-86 as a classic. It was and continues to be a big, tough, mean-faced fighting machine that doesn't do a single thing better than competing fighters. Thuds (F-105s) were faster and far more stable bombing platforms, F-5s and all the MiGs could outturn it, its out-of-cockpit visibility wasn't that great, the original models were built without a gun, it was plagued with tremendous adverse yaw, and the engines smoked so badly at mil power that a defecting MiG pilot once stated that the first time he ever saw one he thought it was on fire. But as a package deal, the F-4 could do it all — Close Air Support, interdiction, air superiority or reconnaissance. It was simply the best fighter in the skies over North Vietnam.

As a "mud beater" it hauled a lot of iron very far, very fast. It could fight its way in and out of the target area, and with two of the most reliable engines in the world (seemingly immune to throttle abuse and FOD), it would bring you home, even with one of them shot out.

Unarmed and Unafraid

The RF-4C was a recce version, it carried high speed cameras instead of weapons and had the thorny mission of post-strike reconnaissance. After a huge strike package (called the eight hundred pound gorilla) had done its thing and really gotten everyone north of the Red River stirred up, somebody had to go in and get the pictures — a job that fell to the particularly gutsy and resourceful aircrews that flew the RF-4C. Their motto, "Alone, Unarmed, and Unafraid" wasn't always totally accurate. On many occasions "alone" didn't apply because it was decided that an element of armed F-4s should accompany them into the just-vacated target area to protect them from MiG attack while they were getting the pictures. These missions were appropriately called "The Run For The Roses," because to a recce pilot, speed was life; the RF-4C was fast — boy, was it fast. Since it was lighter to begin with, and had far less drag than its accompanying missile-laden escorts, it was not uncommon for the flight leader of the escort to find himself in first or second stage afterburner by the time the recce hit mil power. When he really got serious and went to full burner, he would simply walk away from his escort like it was parked and the escort would find themselves all alone directly over the "City On The River" as the unarmed recce disappeared at supersonic speed into the foothills.

Fighting MiGs

In the air-to-air role, all versions of the Air Force's F-4 C, D, & E bristled with eight missiles and a gun (only the F-4E carried the gun internally). Although the missiles didn't work that well, no one else's did, either. Even if their Pk was low, AIM-7s launched at long ranges left huge white exhaust trails that created great confusion, loss of tactical awareness and mutual support within the MiG formations. The Phantom had energy to burn (especially in the denser air at low altitude), and in the hands of a capable pilot, it was more than a match for all takers.

Against the much lower wing-loaded MiGs (especially the MiG-17 and MiG-19), you simply could not play a "nose-pointing" game anywhere near the MiG's corner velocity, as you would constantly find him pointing at you with his nose on fire. Conversely, the F-4 could take the flight into the vertical where it enjoyed a decided energy advantage, or drag it low into the dense air where it not only had unbelievable energy, but where the MiG pilot's flight controls became stiff and his airframe unstable at very high calibrated airspeeds. Against a cannon-only armed MiG-17 or MiG-19, an F-4 pilot could "unload to zero G" and extend to a range that allowed him to "pitch back" into the fight with great energy and a better aspect angle.

Taking the fight into the vertical became a classic tactic, but by no means did it ensure victory. In the hands of a skilled pilot, all of the MiGs (including the MiG-17) could take it up with you. When this happened, you had to avoid being "spit out" in the ensuing vertical rolling scissors before the MiG ran out of energy and fell off. This maneuver was especially dangerous against the MiG-21, which flew about like an F-5E with a light nose. It not only turned well, but also had the energy to go up with you a long way. Once a vertical rolling scissors was joined, it was somewhat like "riding a hog; there was no way to get off." Even if it meant flying the bird down to zero air-speed, you had to do whatever was necessary to make him fall off first. If you failed and tried to extend out of the fight, not only was the MiG-21 difficult to extend from, the F-4's forty-foot afterburner cones made a great heat source for his Atoll missiles.

The Controversial Guy In Back

Originally developed for the Navy, the F-4 was non-traditional in that it was a two-seat fighter. The thinking being that there was more than enough for the pilot to do in flying the jet without having to also run the fire control system. The Navy assigned these tasks to the backseater, calling him a RIO (Radar Intercept Officer). The Air Force, using their rule ensuring nothing was ever called the same as in the Navy, dubbed their backseater the WSO (Weapon Systems Officer). Those that flew the Air Force F-4s took it one step further and simply called him the GIB (Guy In Back). Few tactical fighter controversies rival the continuing debate over single seat vs. two-place cockpits, where strong and passionate arguments are advanced all the way from the Pentagon to the stag bar. Everyone has an opinion, and having flown both single seat and two-place for a number of years, I am no exception.

Flying by yourself in today's fighters like the F-15, F-16, and F/A-18 works just fine. Not only does it make you feel macho, but your individual situational awareness and ability to act decisively is probably heightened. I have no empirical data to support that assertion, it's just how I feel.

However, I don't think the single seat would have worked worth a damn in Southeast Asia. For one thing, the avionics and weapons systems, although not nearly as capable as today's, were difficult to operate really well. HOTAS (Hands On Stick And Throttle) was non-existent. Clearing your own six o'clock from the F-4's cockpit was difficult during patrol, and almost impossible once engaged in a close-in fight. Simply put, the F-4 was designed to exploit the state-of-the-art weapons systems of its day, and those systems did not easily lend themselves to operation by an single individual.

In my opinion, if the GIB did nothing more than twist himself around to put his eyeballs on your vulnerable cone during dogfights, he was worth his weight in gold. But the truth of the matter is that he did infinitely more than that. I have flown with lots of them, some better

than others, but I was privileged to fly most of my missions in SEA with two really great ones. They could pick radar returns of MiGs from the clutter of a radar scope that looked to me like a bowl of buttermilk. They could air refuel off tankers, and generally fly the jet better from the back seat than some of the IPs. (Some GIBs saved their pilot's life when they recovered the aircraft after he was incapacitated.) Contrary to myth, they weren't all frustrated pilots that couldn't hack it, but dedicated professionals that strapped their pink bodies to Double Ugly and did their jobs four feet in trail with you, in one of the most sophisticated and dangerous integrated air defense environments ever devised. One of those GIBs I refer to was killed in action; the other won the ATC Commander's Trophy in flight training, was top gun at F-4 RTU and F-15 RTU, and will soon be a general officer. As whether future fighters should be single or two place, I could make arguments either way. But in the case of the F-4, you will not hear this fighter pilot bad-mouth the GIB.

Carrying On

To this day, the F-4 continues to be a great fighter. In the active duty forces, the RF-4C is still the primary recce aircraft for TAC, USAFE and PACAF. The F-4G, a highly modified version of the slatted F-4E, performs the Wild Weasel role of detection, identification and destruction or suppression of enemy radars. Although none of the F-4C's are still in service, hundreds of F-4D and F-4E models have been constantly updated and scrupulously maintained by Air Force Reserve and Air National Guard units, where they are flown exceedingly well by highly experienced and capable aircrews.

Not bad for an aircraft designed in the mid-1950s. But time marches on, and one day, like all of the great ones, it too will pass from the scene. When it does, I for one sincerely hope that it will take its place on a pedestal of honor at TAC Headquarters at Langley AFB (even if it was originally a Navy design), for it has served us exceedingly well and has truly earned its place in the sun.

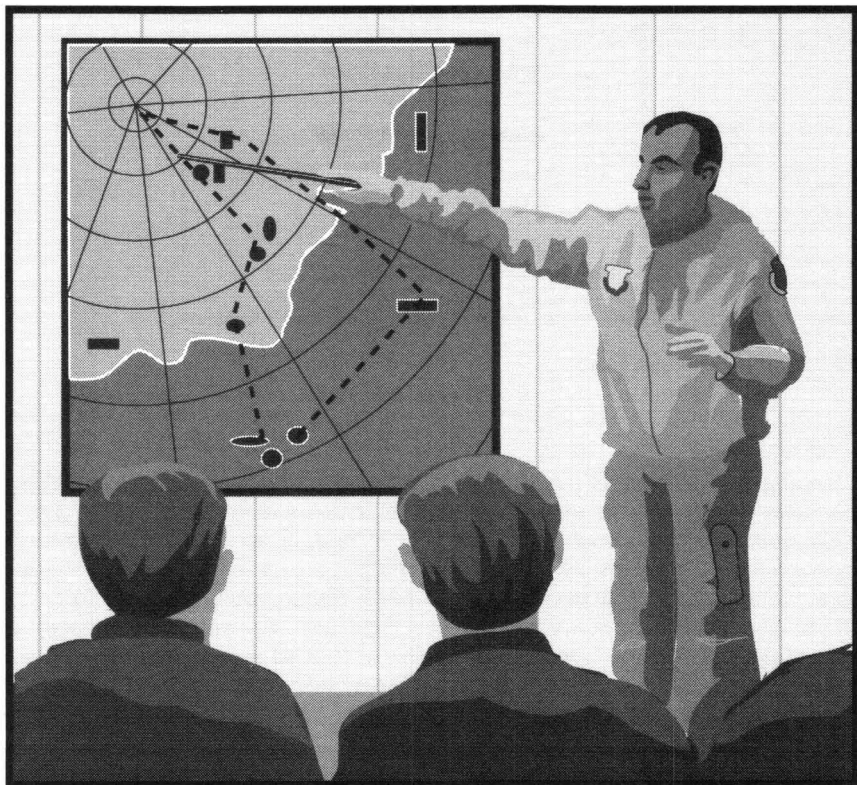
Colonel Phil Hanley has been a U.S. Air Force command pilot with 7,000 flying hours and two combat tours in Southeast Asia (325 combat sorties) flying F-4D's and F-4E's. He has earned 21 air medals, 3 Distinguished Flying Crosses, and 1 Silver Star.

Moving On

Now you are a veteran of two operations, Morning Song and BARCap. If you think you are ready to take on the duties of the Commander of the Air Group (CAG) and plan your own operation, then turn the page to the next section. If you feel you need a little more combat experience, go back and try another mission or two flying either an Intruder or a Phantom. Return to the main corridor and select either Intruder or Phantom Pilot Brief. You are taken to the Briefing Room, where you can select from the available operations.

As described in the CAG Part following, it is possible to modify any of these missions by changing their waypoints or the aircraft taken.

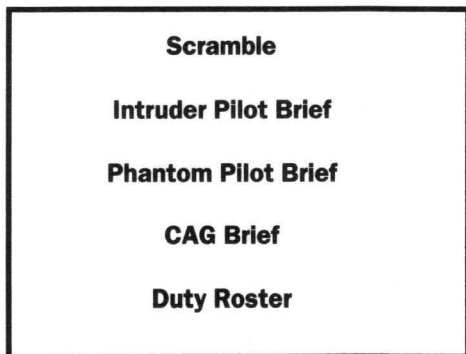
PART III: YOUR FIRST OPERATION AS CAG



The CAG (Commander Air Group) is an archaic title that derives from the time when all the planes on board a carrier were known as its Air Group. Well before the Vietnamese war, the carrier planes had been redesignated as Air Wings, but one supposes that the commanders of these aggregations would rather be known as CAGs than CAWs. The name is still in use.

It is the function of the CAG to work with his pilots to plan their missions and to lead these missions. In this simulation, you act as CAG by planning all the steps of the mission and then flying the mission in whatever plane you choose.

You have successfully undertaken at least one of the two preceding missions, and now you feel ready to plan and execute your first operation as Commander Air Group. You are at the Corridor scene. (If you're not, you should know how to get there by now). As usual, you have the following options:



Select **CAG Brief**.

You are taken to the CAG briefing room, where the display shows a list of the primary targets.

Planning an operation is a multiple stage process. First, the CAG selects the operation's primary and secondary targets. Primary targets are usually significant installations, such as a bridge, a railroad, or an ammunition dump. A primary target is the whole point of the operation — hitting a primary target is sufficient to make an operation a success. Secondary targets are targets in the vicinity of the primary but are less important. You can get extra points for hitting a secondary target. Note, however, that all auto-flying in this simulation is based on single pass attacks. This means that if you are on auto-pilot, you will be taken over the primary target and then back to the carrier.

The next step in planning an operation involves choosing the waypoints and setting up the desired route, timing and actions. At this point you can also determine whether the Rules of Engagement will apply to the mission.

The *route* should be chosen to keep planes coming into the target from running into planes leaving the target.

The *timing* should involve in what order planes leave the carrier (usually MiGCAP and other Escorts go first and then the bombers) and in what order they hit the target area. In general, Iron Hand and Wild Weasel attacks should hit their targets before the main bombing run happens, but not so far in advance of the bombing attack that the enemy has the time to recover and be ready for the next attack.

Actions involves what planes will handle what parts of the job: what planes are handling Iron Hand, which doing the bombing, and so forth.

A Mission Of Your Own

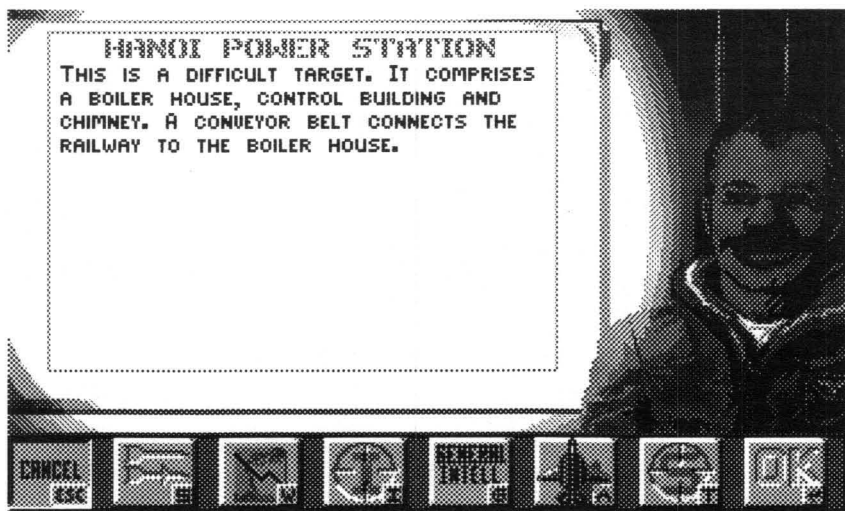
Let's set up a mission to see how this works.

 Select **Hanoi Power Station** as your primary target and select **OK**.

You will then be presented with a list of secondary targets.

 Select **SAM site near Hanoi** as your secondary target and select **OK**.

This brings up the main CAG screen, which presents you with the following choices:



- [Esc] Cancel:** Return to corridor scene.
- [S] Stores:** Choose weapons and other external stores.
- [W] Waypoint:** Set up the desired route, timing and actions.
- [I] Target Intell:** Obtain information about the chosen target.
- [G] General Intell:** Obtain information about selected area of map, e.g. position, SAM, MiG, AAA, ground force activity.
- [A] Aircraft Info:** Obtain information about your assigned aircraft and set up departure times and duties.
- [T] Target Select:** Choose another primary target.
- [Enter] OK:** Accept changes and continue.

You can choose your options in any order you like. For example, you can set your waypoints and then decide you want to select a new target (which would require resetting the waypoints). Or you can get aircraft information, and then decide on the weapons and external stores. Generally, however, it's a good idea to obtain General and Target Intelligence before making your other choices, since what you learn there may influence your decisions. The first one to look at is Target Intelligence.

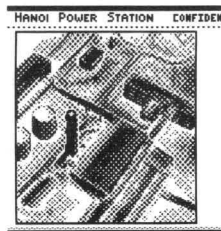
TARGET INTELLIGENCE

Select **Target Intelligence** **I**.

This information is provided to help the pilot locate and identify the target. On entry, a map is displayed showing the primary and secondary targets. Get this information first; without it you won't know where to send your attacking force.



- [Esc]** Exit back to Mission Planning Screen.
- [P]** Photo of the target.
- [I]** Information: the position and description of the target.
- [M]** Map: this changes the scale of the map display between the general map of North Vietnam and the location of the target. The target location map also puts a square around the target site.



Now you know where you are going. It's time to look at the General Intelligence Map to see what you are going to be up against.

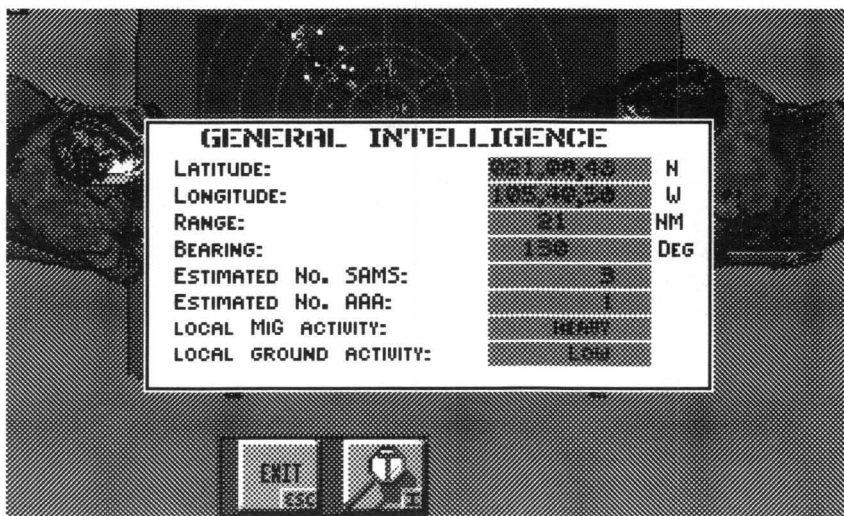
GENERAL INTELLIGENCE

When planning, you will need to know something about the enemy activity. This is where you get the latest intelligence. It should be possible to plan a route which skirts the heaviest defenses. Don't go to Hanoi via Haiphong Docks. Remember the long way around could use too much fuel.

You can use GI aggressively. Make a note of the annoying SAMs/AAAs, and hit them on the way back from the main mission.

 Select **General Intelligence** 

This gives you a map similar to the Target Intelligence map, with the following icons available:



 Exit Return to next level up.

 Information displays the following intelligence about the area enclosed in the square:

Position:	The latitude and longitude
Range:	Distance in miles from Hanoi (Bull's-eye)
Bearing:	Compass bearing from Hanoi (Bull's-eye)
Estimated No. of SAMs:	How many SAMs in the area
Estimated No. of AAA:	How many AAA in the area
Local MiG activity:	How likely MiGs are to be present*
Local Ground Activity:	How likely ground fire might be*

* In both these cases, the range runs from low (hardly any) to heavy (lots).

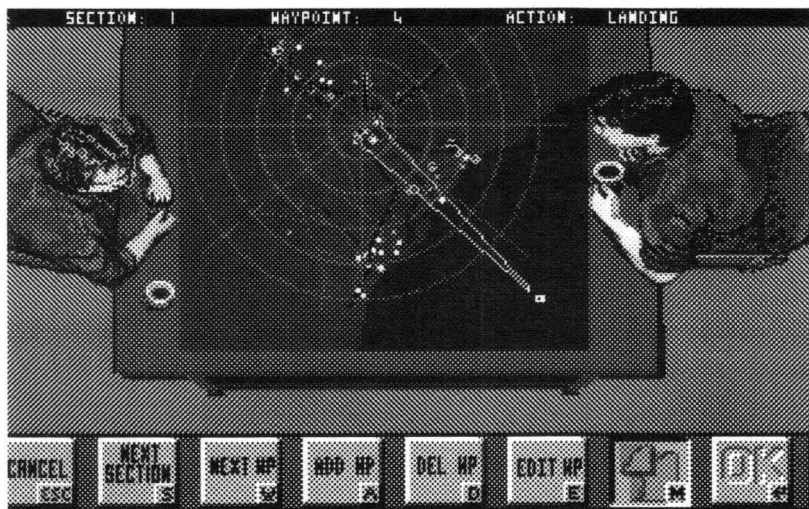
WAYPOINTS

This brings you back to the main CAG screen. Next we'll choose the waypoints for the operation.



Select **Waypoint**.

This brings up the following screen:



On selecting waypoints, a map is shown on which is displayed the route and waypoints for the first section of aircraft. Note that a route is specified for the section, not individual aircraft. The current waypoint is flashing. The current section and waypoint number are displayed at the top of the screen. There must be a minimum of four waypoints, and the first and last are treated in a special way — i.e. they cannot be deleted.

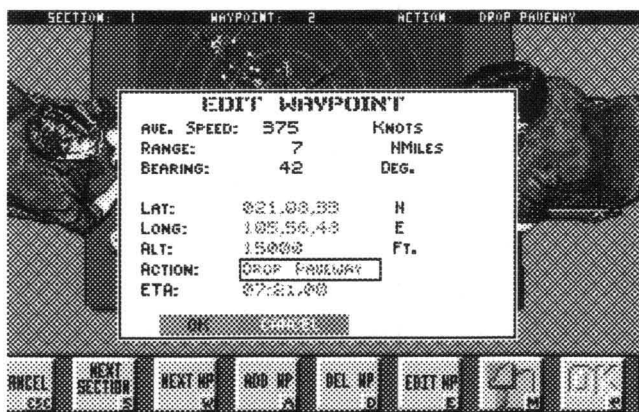
To set the waypoints for your operation you use the following icons:

[Esc]	Cancel	Return and forget edits.
[S]	Next Section	Display next section's route and waypoints.
[W]	Next Waypoint	Make next waypoint current.
[A]	Add Waypoint	Adds a waypoint after the current waypoint. This is not allowed for the last waypoint.
[D]	Del Waypoint	Delete current waypoint.
[E]	Edit Waypoint	Open dialog box to allow editing of waypoint.
[M]	Map	Change scale of map. The current waypoint must be retained on the map; therefore, moving to the large scale is only allowed if it is available.
[Enter]	OK	Return with edits.

The position of the current waypoint can be moved using:

Cursor Keys , , and will move whichever waypoint has been selected using .

Mouse: Click the left mouse button to select the nearest waypoint. Drag the waypoint and release to fix it.

**Edit waypoint dialog**

This is divided into two areas. The first is the Comment Field: it tells you what your average speed should be and the range and bearing of the point to Bull's-eye (see next page). These entries change when you change the fields described below. Also, if your new entries take the waypoint out of the range of the map or to an impossible latitude or longitude, a message telling you so appears when you your edit.

- | | |
|------------------------|---|
| Latitude/
Longitude | These entries allow very accurate placement of current waypoint. |
| Alt: | This shows the altitude at which the section of planes should reach the waypoint. |
| Action: | Takeoffs and bombing are examples. This allows you to set up the specific operation for each waypoint and let the mission unfold automatically. |
| ETA: | Estimated Time of Arrival: this is the time that you want the aircraft to reach the waypoint. |

Points of Reference

We are interested in the following area:

104 deg E to 108 deg E

19 deg N to 22 deg N

It is possible to fly outside this region. It is not very interesting; we have not defined anything outside this region. The area is bordered on the east and southeast by water. To the north and northwest is China; venturing here is foolhardy — expect to be shot down very soon. To the west and southwest are the mountains of Laos, another hostile area.

There are five maps available in the software:

A small scale map of the whole area which is displayed during waypoint editing in the game beginning. Because the whole area is displayed, the map can be used for route planning. This map is also used for the moving map display in the aircraft cockpits.

This map is similar to the authentic Route Map included with this game. This map is identical to the maps carried on the knees of pilots who flew over Vietnam. Four maps at four times the scale of the small scale map can be displayed during waypoint editing. The maps display the most targeted areas:

Hanoi:	20–55N to 21–40N	105–30E to 106–30E
Haiphong:	20–15N to 21–00N	106–00E to 107E
Yen Bai:	21–15N to 22–00N	104–30E to 105–30E
Than Hoa:	19–30N to 20–15N	105–00E to 106–00E

When looking at locations on the Waypoint and Intelligence maps, the locations are given in degrees of latitude and longitude. However, for an easily understood location fix in combat, we also use the “Bull’s-eye system” used by the Air Force and Navy in the Vietnam War. Bull’s-eye is downtown Hanoi. Any position in North Vietnam can be described as a bearing and range from Bull’s-eye. The map that alternates with your cockpit radar screen shows these coordinates. The circles are drawn in 20 nautical mile increments from the center of Hanoi.

So “MiGs at 180 for 60”, means that MiGs have been sighted 60 miles south of Hanoi. Looking at the map, you can tell that the MiG is at about 20°, 2' N by 105°, 49' E, or just south and west of Bien Son.

Clock Code

When sending messages the “Clock Code” is used: Straight ahead is 12 o’clock, straight behind is 6 o’clock. For example:

“Bandit at your 3 o’clock range 2 miles” means that there is a bandit on your right hand side at a range of 2 miles. Usually, the subject of the message was repeated twice, such as “Bandit, Bandit, at your 3 o’clock range 2 miles.” To save space we only use the designator once.

STORES

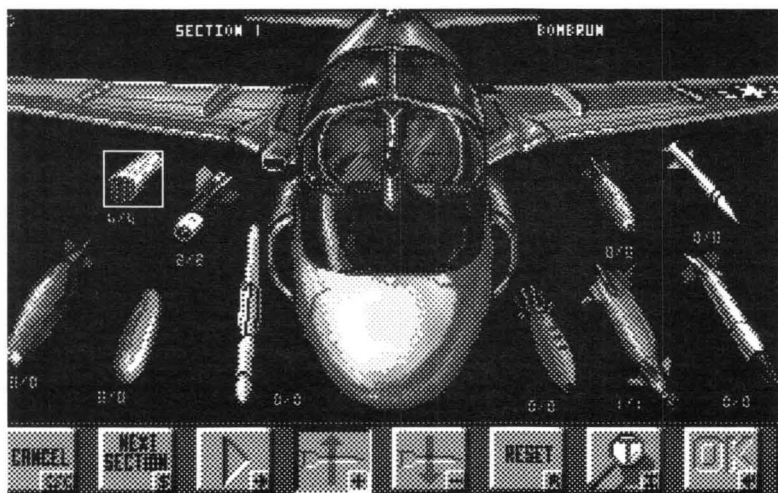
Now that you know where you are going, you need to determine what you are going to deliver to the target.



Select Stores

This brings up a screen depicting either an F-4 Phantom or an A-6 Intruder.

The CAG chooses weapons and other external stores, such as extra gas tanks and ECM pods. It is important to choose the right weapons for the job — forego the extra missiles if the trip is a long one, lighten the plane or take an extra gas tank instead.



Description of icons:

- | | | |
|--|---------------------|--|
|  | Next Section | Move to the next section of planes attached to the operation. |
|  | Next Weapon | Highlight the next weapon to the right.  will move the highlight to the left, even though there is no icon displayed. |
|  | Up Arrow | Load highlighted weapon. If there is room on the center station, then the weapons are loaded individually. If not, the wing stations are used and the weapons are loaded in pairs. |
|  | Down Arrow | Unload highlighted weapon. Center stations are emptied first. |
|  | Reset | Reset the weapon selection to that defined on disk by us: i.e. the standard load for type of mission selected. In CAG mode, the reset is to a basic minimum bombing load of Walleve and MK82s. |

 Information

Provide information about the highlighted weapon. Next to each weapon a fraction is displayed. The top number indicates the number of that weapon type currently loaded. The bottom number represents the total number that could be loaded. Note that, as weapons are loaded, the options become more limited.

Section number and duty are displayed at the top of the screen.

 Select a Paveway from the stores screen.

Optional External Fuel Tanks

For some missions extra fuel is essential, but double-check those fuel management calculations — too much fuel can be as bad as too little!

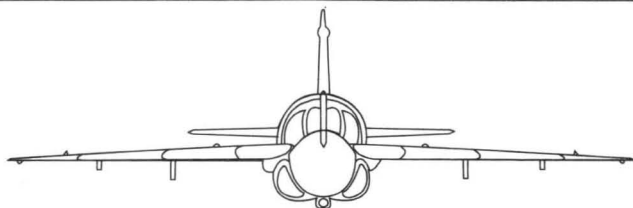
Among the possibilities are:

- 370 gallon fuel tank — Only for use with the Phantom
- 300 gallon fuel tank — Only for use with the Intruder
- Small external fuel tank — Always loaded in pairs. Giving total extra capacity of 4200 lb.
- 600 gallon fuel tank — Large external fuel tank holding 4200 lb of extra fuel.

Weapon Station Capacity

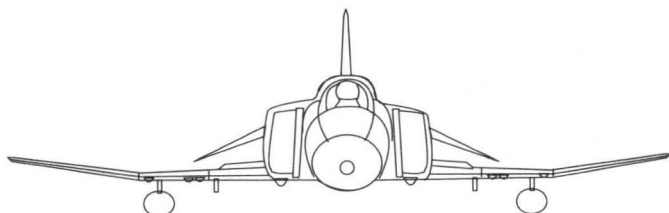
The underside and wings of both the Phantom and the Intruder have areas where weapons can be slung for use. These are called weapon stations. The following tables show the capacities of the two planes.

RO	Right Outer Wing
RI	Right Inner Wing
Center	Under the body of the plane
LI	Left Inner Wing
LO	Left Outer Wing



INTRUDER

	Wt(kg)	Stations				
		RO	RI	Center	LI	LO
300 g fuel	150+950	1	1	1	1	1
ECM Pods	500	1	1	1	1	1
Shrike	206	1	1	0	1	1
Walleye	502	1	1	0	1	1
Mk82 Snakeye	254	6	5	6	5	6
Mk82	226	6	5	6	5	6
Mk83	454	3	2	3	2	3
Mk84	907	1	1	1	1	1
Paveway	907	1	1	0	1	1
Rockets	194	3	2	0	3	2



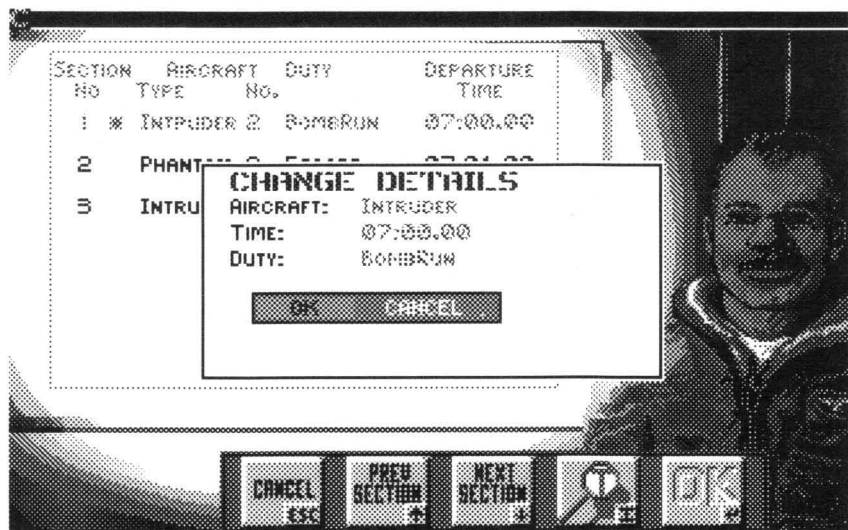
PHANTOM

	Wt(kg)	Stations				
		RO	RI	Center	LI	LO
370g fuel	150+1175	1	0	1	0	1
600g fuel	200+1905	0	0	1	0	0
ECM Pods	500	0	1	0	1	0
Sparrow	206	0	2	0	2	0
Sidewinder	77	0	2	0	2	0
Shrike	206	1	1	0	1	1
Walleye	502	1	1	0	1	1
Mk82 Snakeye	254	6	3	6	3	6
Mk82	226	6	3	6	3	6
Mk83	454	3	2	3	2	3
Mk84	907	1	0	1	0	1
Paveway	907	1	1	0	1	1
Rockets	194	5	0	5	0	5

Aircraft Information

Next, we'll need to obtain information about the aircraft you'll be using in the mission.

Select **Aircraft Info.**



This is where you get the information about the aircraft in the chosen operation. The aircraft are organized in sections of one or two aircraft. For mutual protection, most sections start with two members, leader and wingman. The exception to this is the lone Intruder mission: go in low and fast in bad weather. Sections never consist of a mix of aircraft.

Each section is given a number. This is important as it is used to move between the sections when in flight: you press **Shift** **1** for Section 1 and so on. This simulation has a limit of four sections per mission.

As well as displaying Section number, aircraft type and number of aircraft in the section, you also get duty and departure time. The duty dictates the type of job given to the Section. This is explained later.

Under the aircraft information line is the names of the pilot and B/N (or RIO) for the lead aircraft in each section. How you can alter these names is shown on the next page.

Icons Available:

-  Previous Section Highlights the next section up.
-  Next Section Highlights the next section down.
-  Information Opens a dialog box which indicates the orders for that section and allows you to change some of them.

 Select .

This brings up the Aircraft Duty screen shown on the previous page. On this screen you can alter the time of takeoff for the section, its basic mission, and the personnel involved. Use and to go between the Time field, the Duty field, the Aircrew field and the OK field. As you can see, you don't get to choose the aircraft you'll be using in your operation. As in real life, you have to make do with what has been assigned to you. What you can do, however, is assign specific duties and crew to your aircraft. The following aircraft duties are available:

MIGCAP	Combat air patrol away from the target area.
IRON HAND	Ground attack against AAA and SAM sites using normal air-to-ground weapons. On autopilot, its priority is for AAA sites.
BOMB RUN	Strike mission against the primary target.
WILD WEASEL	Ground attack against AAA and SAM sites using ECM pods for protection and the Shrike anti-radiation missile. On autopilot, its priority is for SAM sites.
ESCORT	Ground and air cover, equal priority goes into AAA, SAM and GCI sites.
TARCAP	Combat air patrol at the target area.

For this particular operation, we will need to have a bomb run on the Plant with a smart weapon. We also have to deal with a SAM site, so it would be best to have our second section of A-6s equipped for Wild Weasel activity and the Phantoms equipped for Iron Hand.

For aircrew, we need to find crews with good Accuracy for the main bomb run and good Iron Hand skills for the Iron Hand and Wild Weasel missions. The Phantom crew should also have good Dogfighting skill, but that is secondary to the Iron Hand skill for this mission. If you want to change the aircrew, use and to bring up new crew names.

How do you know what the capabilities of the crew are?

 Select for Crews to get a list of the crews with their capabilities. The meaning of these capabilities can be found in the Personnel/Communications Manual.

You have one more thing to plan before actually executing the operation — assigning departure times to your aircraft.

Local time is entered in the following format: **HH:MM.SS**

 Select the Time data field and type in 02:00.00. This will start the mission at 2:00 AM.

Once you have set your aircraft and crew duties and departure times, it's time to start the operation. Hit to take command of your aircraft. In this game, just like the Navy, the CAG both plans and flies the missions.

Enemy Encounters

United States aircraft had to run the gauntlet of both NV air and ground defenses. The major ground threat was AAA and SAMs. Generally the North Vietnamese attacked with either AAA, SAMs or MiGs. So the first wave of U.S. aircraft could, after the first engagement, tell the others whether it was a SAM or a MiG day. In this simulation we mix them up together to represent the worst days.

Air Encounters

The enemy have MiG-17, MiG-19 and MiG-21 jet fighters. See the aircraft specifications in Part VI. They are armed with cannon and Atoll heat-seeking missiles similar to the Sidewinder. This means that you are relatively safe as long as you haven't got a MiG on your tail.

Ground Encounters

SAMS For most of the war, the only surface-to-air missiles used by the North Vietnamese were Russian SA-2 Guidelines. Until very late in the war, these only appeared in North Vietnam. This is small consolation, since you are only flying over North Vietnam.

The usual description of a SAM is that it looked like a flying telephone pole. They look deceptively clumsy. Many pilots learned how to avoid a SAM (see below) and then became complacent. But SAMs are extremely fast, hitting over three times the speed of sound and could be set off in three ways; by impact, proximity, and ground signal. The United States leadership thought that the SAMs were probably the most significant threat in the skies of North Vietnam, and they proved a very potent threat.

Avoiding a SAM is easy if you know it is coming. Just make a hard turn when it is almost on top of you. Of course, if you do it too soon, it will turn with you. If you do it too late, it will just explode and down you anyway.

AAA The Vietnamese employed many types of anti-aircraft guns, from the 37mm cannon (an orange tracer) to the ubiquitous 57mm (which explodes with greyish brown smudges like pigtails) to the slow-firing but deadly 87mm (red puffs of smoke). At the start of the war, common wisdom was that anti-aircraft guns could never track a jet plane. Therefore, planes came in low to avoid SAMs. Common wisdom forgot that AAA could put up a pattern of fire that could blow away a jet plane as easily as a Piper Cub. The best plan was to fly over 3,000 feet and jink a lot to throw off the radar tracking for the SAMs and AAA.

Rifles A lot of planes were shot down by ground fire. Fly above 3,000 ft. to avoid small arms fire. Of course, that makes you a target for SAMs and AAA.

PART IV: OPERATIONS AND MISSIONS

The following mission descriptions give you needed information to make a selection of what missions you would like to fly in Flight of The Intruder. Several terms are used that should be explained before you go on.

Operation	The overall activities of (usually) several elements to accomplish an objective. Each part of an operation is called a mission.
Mission	The individual task of one element or section (usually two planes) of an operation. Missions have special titles such as Wild Weasel (suppression of SAM and AAA sites with anti-radiation missiles and ECM), MiG-CAP (Combat Air Patrol against MiG incursions) and so forth. A full explanation of each mission title is given in the Glossary at the back of this manual.

Rules of Engagement

In certain of the missions you can find yourself having to deal with the same Rules of Engagement that bedeviled the U.S. military through most of the Vietnam war. These are rules made by your superior officers that limit what you can do in a combat. Breaking any of these rules can get a pilot court-martialed. During the Linebacker period, most of the Rules of Engagement were lifted, but in this simulation you can attempt to deal with the same problems real A-6 and F-4 pilots had to deal with in the unfriendly skies over North Vietnam.

These rules (as they apply to this simulation) are:

1. You may only engage MiGs that are airborne or in the process of taking off and which you or your wingman have *visually* identified as being bandits.
2. You may only attack mobile units: e.g. trucks, trains, and off-shore enemy boats. This excludes any boats around the Haiphong harbor unless they have been designated as the mission's primary or alternate target.
3. You may only attack designated primary and alternate targets. You may not attack targets of opportunity. If operating as CAG, you cannot designate a target within ten miles of Hanoi or four miles of Haiphong.
4. You may attack any AAA, SAM or GCI site that illuminates you with its radar (thus taking a hostile action).
5. You may not activate your master arm switch when within ten miles of Hanoi or four miles of Haiphong.

In the following Operation descriptions, the Special Instructions will indicate which are covered by the Rules of Engagement. This coverage can be cancelled through the Options Menu (see Part VI: Reference).

Operation: BARCAP

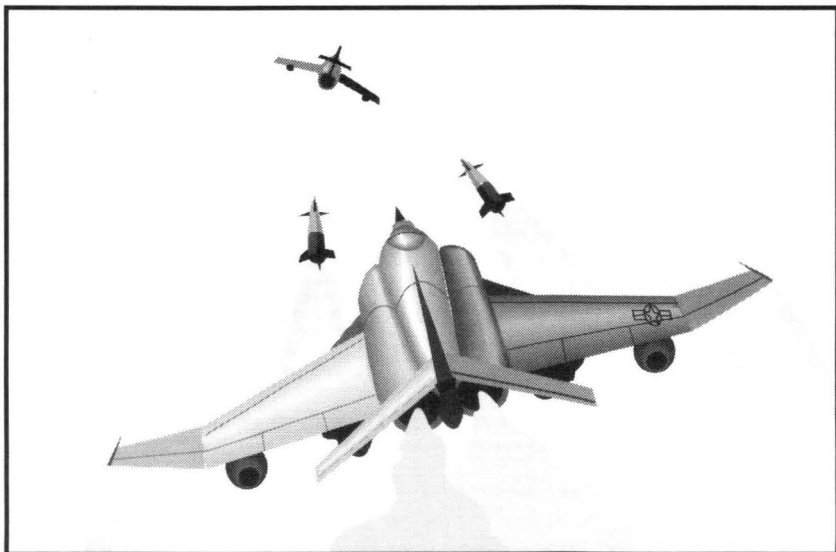
Description: A dawn patrol around Yankee Station.

Objective: To intercept incoming threats from North Vietnam. Make sure there is no penetration of the 40 mile exclusion zone by plane or boat.

Special Instructions: Incoming aircraft could be friendlies or bogies so visual ID is necessary. Rules of Engagement apply.

PHANTOM MISSION: MiGCAP

There is only one mission in this operation, and it is performed by a single flight of Phantoms. This combat air patrol mission should stay around top deck plus ten. Maintain a patrol area just off the North Vietnam coast.



Operation: DECK ALERT

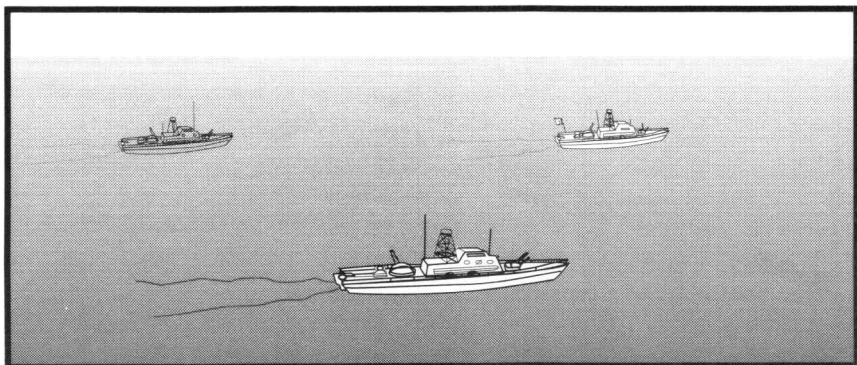
Description: Scramble to meet a torpedo boat attack on the carrier.

Objective: To intercept three torpedo boats making a run on Yankee Station.

Special Instructions: Go in low to avoid enemy radar. Rules of Engagement apply.

INTRUDER MISSION: DUCKS IN A BARREL

One flight of A-6s must intercept and destroy the torpedo boats before they get close enough to the *Shiloh* to launch torpedoes.



Operation: TALLY HO YO!

Description: Single strike bombing mission with fighter escort and Iron Hand.

Objective: Destroy the Yen Bai railroad bridge.

Special Instructions: The bridge is defended by AAA. Secondary targets (warehousing) exist in Yen Bai. Be prepared for targets of opportunity on the railway. Rules of Engagement apply to all other targets.

Be sure to take plenty of fuel with you.

PHANTOM MISSION: IRON HAND

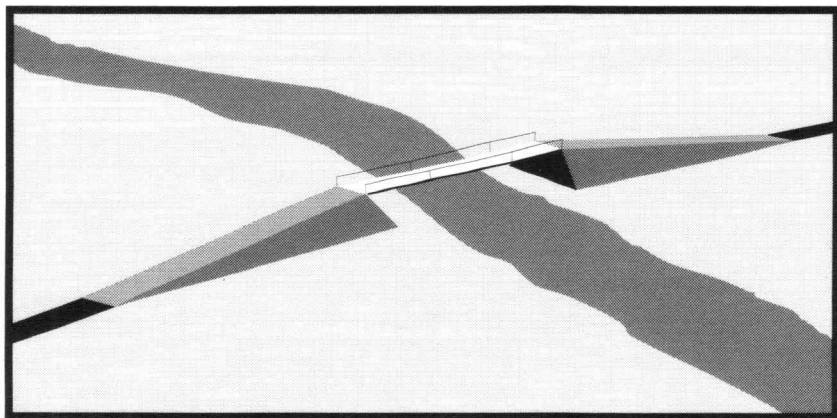
Escort the A-6s. On arrival, be prepared for targets of opportunity.

INTRUDER MISSION: IRON HAND

A 57mm AAA battery has been reported to the north of the bridge. This needs to be silenced before the strike flight comes in. They are two minutes behind you.

INTRUDER MISSION: STRIKE

Come in over the target two minutes after flak suppression by Phantoms. Use small smart weapons.



Operation: BACK BREAKER

Description: Single strike bombing mission with fighter escort for MiG CAP and flak suppression.

Objective: Destroy the notorious Than Hoa bridge. Secondary targets include the AAA batteries radar guidance station and warehouses in the town.

Special Instructions: A low level direct approach up the estuary is suggested. This bridge has stood up against intense bombardment since 1965. Try to do it right this time. Rules of Engagement apply.

High likelihood of traffic in vicinity of bridge.

PHANTOM MISSION: MIG CAP

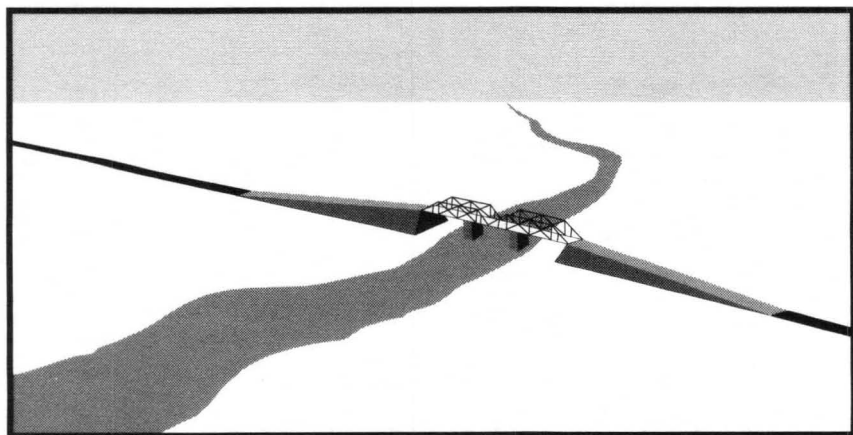
One flight of Phantoms required on combat air patrol to the north west of Thanh Hao. Cover required for the duration of the operation. Expect unfriendly if the attack on the radar guidance unit is successful.

INTRUDER MISSION: IRON HAND

Heavy AAA placements on both sides of the river and bridge have been reported. The radar guidance unit to the southeast of the bridge is the main target.

INTRUDER MISSION: BULLSEYE

Low level route straight up the estuary. Fighter escort should keep AAA occupied.



Operation: MORNING SONG

Description: Single strike bomb mission without escort.

Objective: Destroy torpedo boats and missile cargo boats.

Special Instructions: This operation can be given to either a Phantom or Intruder section. Rules of Engagement apply.

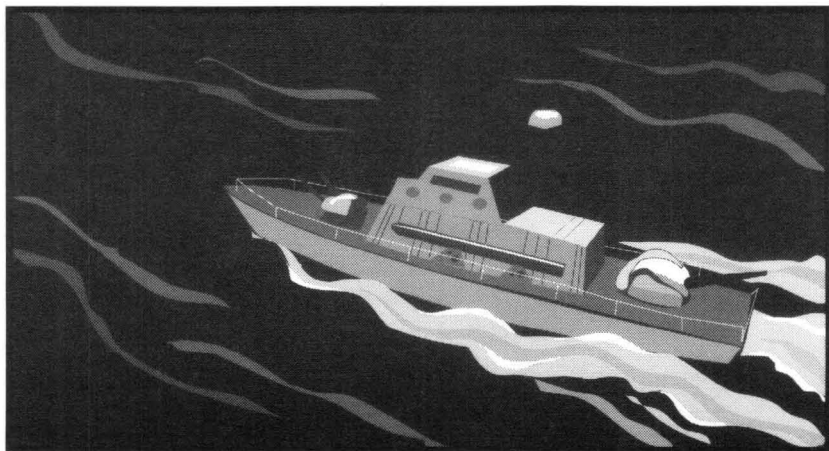
You are without escort on this mission, so don't linger.

INTRUDER MISSION: GREEN TREE

There is only one mission in this operation, and it is performed by a single flight of aircraft. Come in low over the sea from the east. Coast defenses will provide shipping with air cover.

PHANTOM MISSION: BLUE TREE

There is only one mission in this operation, and it is performed by a single aircraft. Come in low over the sea from the east. Coast defenses will provide shipping with air cover.



Operation: JULY 4TH EVE

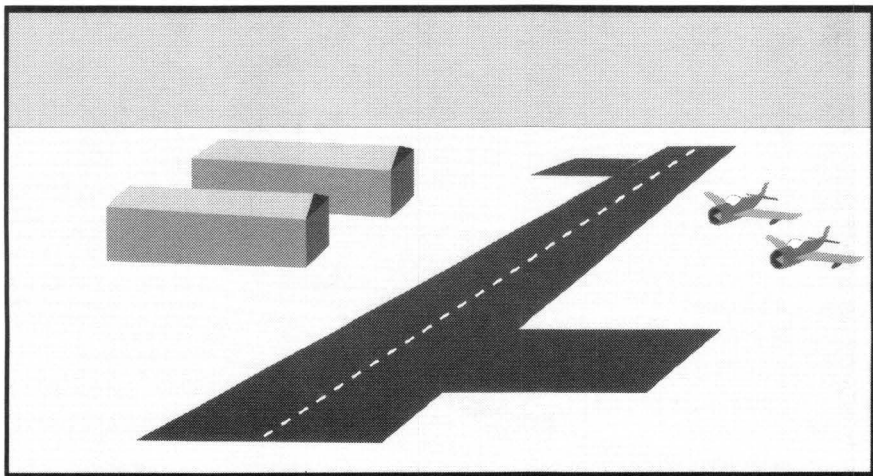
Description: Bombing mission.

Objective: Destroy the Phuc Nhac airfield in preparation for the July 4th celebrations (see below). Predicted bad weather should make a lone attack by a single A-6 feasible.

Special Instructions: No MiG CAP is provided. Ripple Mk82s along the length of the runway. No second chances — you don't want MiGs chasing you.

INTRUDER MISSION: LONE RANGER

No MiG CAP or SAM or flak suppression. The poor visibility makes conditions ideal for an attack by a single Intruder.



Operation: JULY 4TH DAY

Description: Bombing mission.

Objective: Destroy the ammunition dumps reported in the town of Thanh Hoa. The main warehouse is reported to be empty. Most stores are in buildings around the hospital.

Special Instructions: Do not hit the hospital. It is recognizable by a red cross on its roof.

MiGCAP is provided to the northwest.

PHANTOM MISSION: MiGCAP

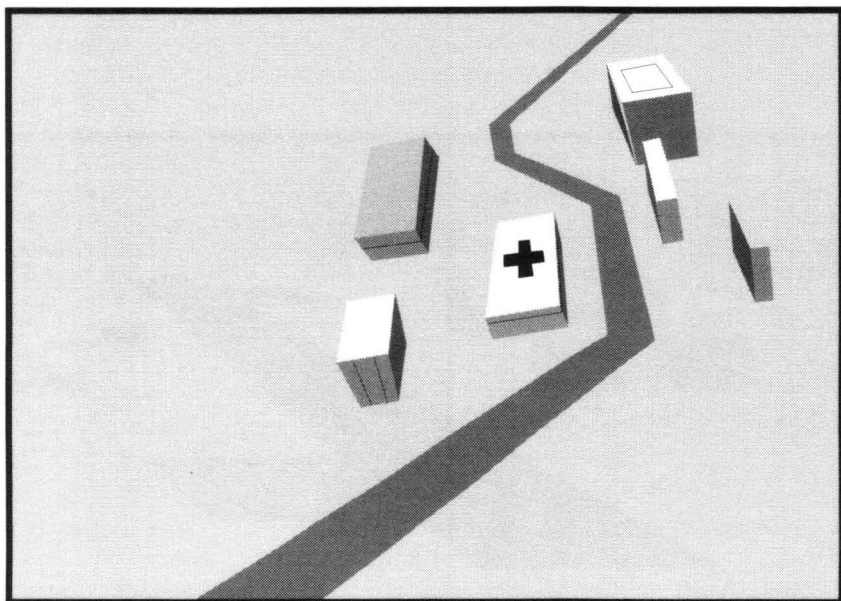
Provide MiGCAP for the Intruders coming in from the northeast. Take a look at the AAA batteries to the southwest of the town.

PHANTOM MISSION: TARCAP

Provide CAP for the Intruders coming in from the southwest.

INTRUDER MISSION: FIREWORKS

The safest approach seems to be from the southwest. This also puts the targets in transit. Phantoms will provide TARCAP.



Operation: JULY 4TH REFROG

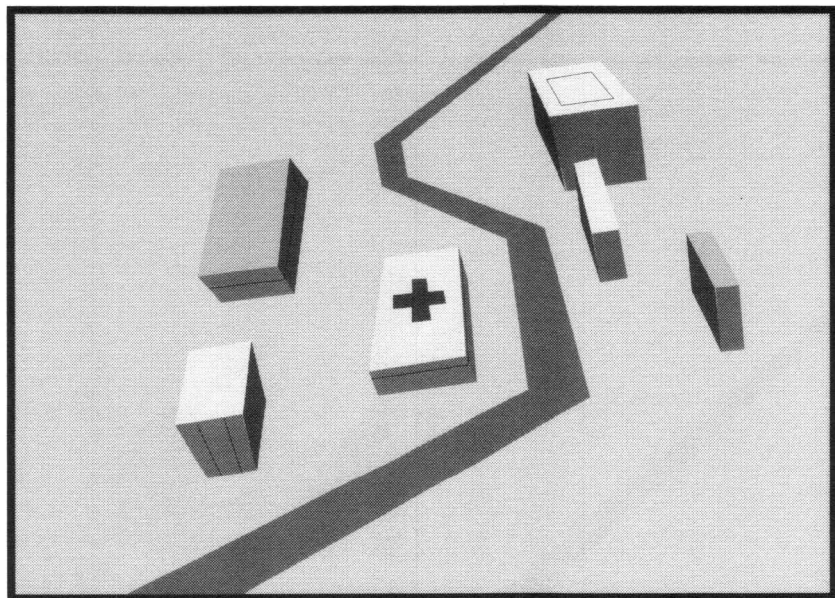
Description: Bombing Mission.

Objective: Destroy the ammunition dumps reported in Thanh Hoa. The main warehouse is reported to be empty. Most stores are in buildings around the hospital.

Special Instructions: Do not hit the hospital. It is recognizable by a red cross on the roof.

INTRUDER MISSION: FIREWORKS

No MiGCAP or SAM or flak suppression. The poor visibility makes conditions ideal for an attack by a single flight of Intruders.



Operation: LIGHTS OUT

Description: Double strike bomb mission with MiGCAP and Wild Weasel escort.

Objective: Destroy the thermal power plant at Hanoi.

PHANTOM MISSION: MiGCAP

The main duty is to provide MiGCAP for the Intruders. They will be coming in two waves. Make sure you have enough fuel to stay around until everyone is on the way home. Expect company from the north.

PHANTOM MISSION: WILD WEASEL

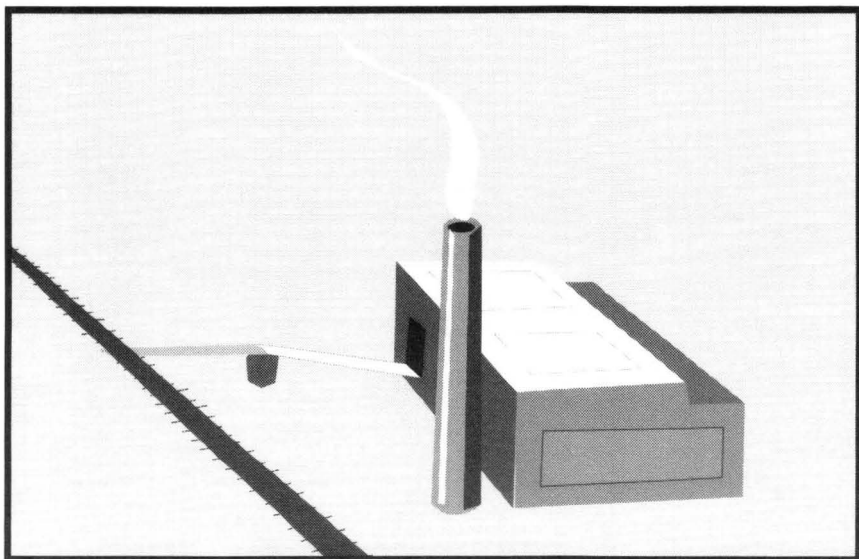
SAM suppression is the main duty. However, the area is also defended by AAA.

INTRUDER MISSION: BOMB RUN ONE

Your objective is the main compressor house. It is the main building in the complex. The power station is in a residential area, so use guided weapons.

INTRUDER MISSION: BOMB RUN TWO

Go for the main compressor house if it is still standing. Otherwise go for the chimney or conveyor.



Operation: IRON RAIN I

Description: A massive attack on Hanoi. This will take place in two operations: Iron Rain I and Iron Rain II. (See Operation: Iron Rain II)

Objective: Knock out Phuc Yen Airfield, suppress flak, and destroy SAM radar guidance equipment.

PHANTOM MISSION: TARCAP

First in and last out. Engage any interceptors that are airborne.

PHANTOM MISSION: ESCORT

Provide air cover for Intruders on low level attack on Phuc Yen airfield and downtown Hanoi. Seek targets of opportunity.

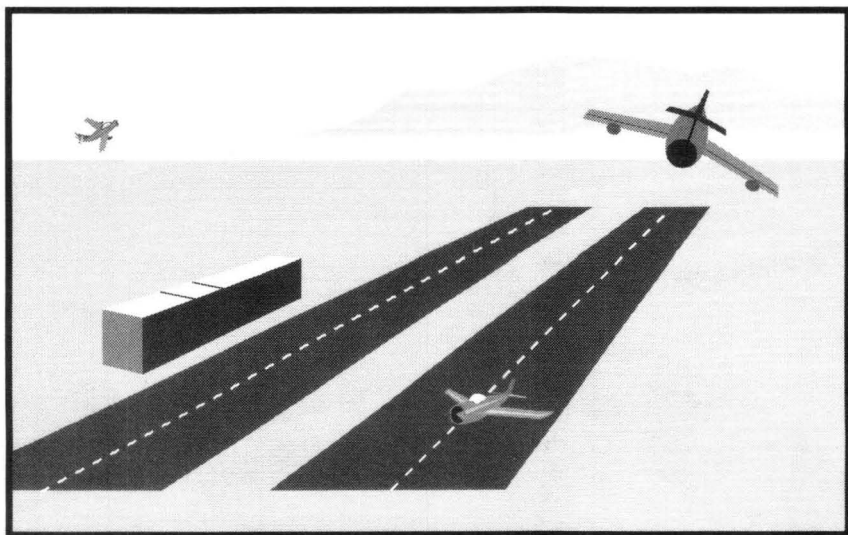
INTRUDER MISSION: WILD WEASEL

Seek and destroy the area's radar guidance units. Keep the enemy radar stations off the air.

INTRUDER MISSION: STRIKE

The objective of this low level ripple bombing run is to close down the Phuc Yen airfield. The runway is the prime target; you may also attack grounded MiGs.

Clear up anything that the Alpha strike missed.



Operation: IRON RAIN II

Description: A massive attack on Hanoi (continued). This will take place in two sections: Iron Rain I and Iron Rain II. (See Operation: Iron Rain I)

Objective: Bomb the Paul Doumer bridge.

Special Instructions: Iron Rain I should have weakened the defenses; however, MiGCAP and Wild Weasel escorts are provided for incursion into this heavily defended area.

PHANTOM MISSION: MiGCAP

MiGCAP to the north of the target is required to intercept bandits.

PHANTOM MISSION: ESCORT:

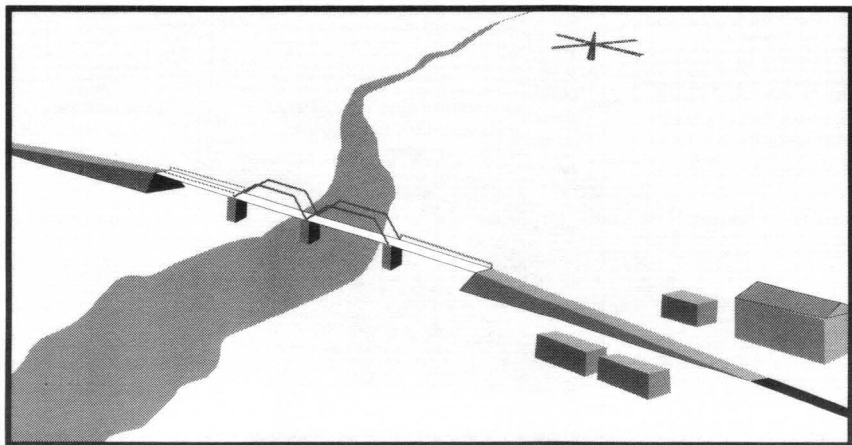
Pick up your charges before going feet dry and provide CAP over the target.

PHANTOM MISSION: WILD WEASEL

There are over 84 SAM sites, mostly to the south of the city, to keep you busy.

INTRUDER MISSION: KNOCKOUT

This is an interdiction strike on the Paul Doumer bridge. A low level run from the north east is advised. Direct hits on the spans are required.



Operation: ALPHA STRIKE

Description: A bombing run using all the available aircraft on a hitherto untouchable objective.

Objective: The objective of this Alpha Strike is to inflict damage on the Haiphong docks and shipping facilities.

Special Instructions: Do not attack the neutral shipping in the harbor, even if they shoot at you.

PHANTOM MISSION: MIGCAP

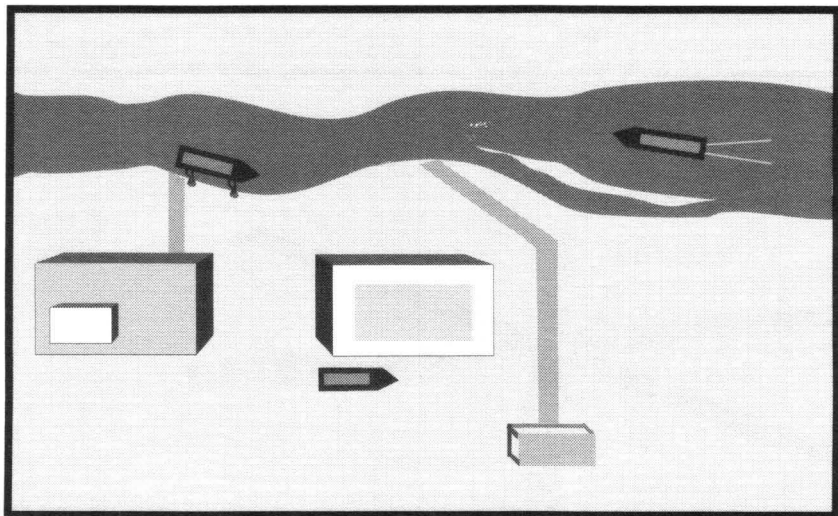
Two sections of F-4s have been allocated to provide combat air patrol to the south of Haiphong. MiG-21s have been reported in the area.

INTRUDER MISSION: BALLGAME

The two big dockside warehouses are the main targets this morning. Also target any shipping in the bay.

INTRUDER MISSION: WILD WEASEL

SAM suppression is the main duty on this early morning mission. You will be protecting an A-6 flight which will target the dockside warehouses. Be prepared for targets of opportunity in the dock.



Operation: HUNTER KILLER

Description: An all-out attack on a pesky SAM site.

Objective: The six-launcher SAM site south of Hanoi is the target. Shrikes only hit the radar van, and the site is active again quickly. The bigger punch of Hunter Killer tactics are needed.

Special Instructions: Take out the GCI first to increase your chances. Don't make more than one run on the target, and use the biggest bomb load possible to do the most destruction. Rules of Engagement apply.

PHANTOM MISSION: ESCORT

Two sections of F-4s are tasked to escort the A-6s. If possible, silence the light AAA to the south.

INTRUDER MISSION: STRIKE

The objective is to destroy the site. Target the launchers. The Wild Weasels will get the radar.

INTRUDER MISSION: WILD WEASEL

Destroy the GCI and then keep the site busy so that the bombers can attack with impunity.

