FALCON 3.0™

RELEASE NOTES AND COMMUNICATIONS HANDBOOK

Spectrum HoloByte®

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Credits

Handbook Writing:
Robert "Spaceman" Giedt

Handbook Editing:
Robert "Spaceman" Giedt
Marisa "No. 19" Ong

Technical Illustrations:
Chuck "Bunhead" Butler

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Before you begin

This handbook contains important information for loading and running *Falcon 3.0*. You don't need to read the entire handbook before playing, but the following areas are essential to read before inserting any disk into your computer:

- **System requirements.** Before you do anything, be sure that you have the right hardware and software configuration necessary to play *Falcon 3.0*. If you don't, you will need to obtain one or more of the items listed before play.
- **Installation and loading procedures.** Read these right after the system requirements. The installation is fairly straightforward, and will set up some of the game's configuration settings before you even load *Falcon 3.0*.

In addition, you can read the following areas if you want to get flying quickly or are having problems installing or loading *Falcon 3.0*:

- **Five minutes to play.** If you don't want to hassle with any complicated flying instructions, you can read this section to learn how to get in the air quickly.
- **Errata and additions.** Skim this briefly before you run *Falcon 3.0* for the first time to see what we missed or what was changed in the program. Any last-minute changes can be found in the file `readme.txt` on Disk 1. To read this file, type the words `type readme.txt | more`. You may also want to read and print this out using any standard word processor.
- **Troubleshooting.** If you are having problems running *Falcon 3.0* or installing it to your hard drive, look at this section. It also tells you how to contact our Customer Support department.

Parts list

- Either five 1.2MB 5¼" disks or four 1.44MB 3½" disks and one 720K 3½" disk
- Flight Manual
- Release Notes and Communications Handbook
- Two Navigation Maps: Panama/Kuwait and Israel/Nellis AFB
- Quick Reference Card
- Registration Card
- Disk Exchange Coupon

System requirements

Because *Falcon 3.0* is such an innovative and comprehensive program, it takes advantage of the latest hardware and software technology on the market today. Therefore, while some of the requirements may seem strict, they are absolutely necessary to provide you with the outstanding features of the most complete flight simulator ever created.

Falcon 3.0 requires the following:

- 12MHz 80286 IBM (or compatible) computer or IBM PS/2 Model 30-286 or higher
- 1MB RAM
- DOS 5.0, DR-DOS 5.0 or DR-DOS 6.0
- Hard drive with at least 11MB free space
- VGA graphics card and VGA color monitor
- One 1.2MB 5¼" disk drive or one 1.44MB 3½" disk drive

In addition, we highly recommend the following:

- Mouse
- Joystick
- Ad Lib, Sound Blaster, or Roland LAPC-1 or MT-32 sound card
- Expanded memory (EMS) manager such as QEMM or EMM386. This will allow you to hear digitized speech and give you access to the ACMI replay feature. You will also be able to use your local area network (LAN) for Communications mode.
- As much RAM as you can get your hands on. More RAM will give you longer replays and tend to cause fewer memory problems.
- Null-modem serial cable or 2400 baud Hayes-compatible modem for two-player mode; or Novell NetWare-compatible local area network for multi-player mode
- 80x87 math coprocessor (required for the High Fidelity flight model)

Optimal system requirements:

- 25MHz or faster 80386 compatible system
- 4MB RAM with EMS driver installed and all drivers (mouse, network, EMS, etc.) loaded into high memory
- 16-bit VGA card and VGA monitor
- Mouse
- Joystick
- Ad Lib, Sound Blaster or Roland sound card
- 9600 baud modem (for Communications mode)
- 80x87 math coprocessor for the High Fidelity flight model

Detail level and speed considerations

Falcon 3.0 has a number of different options for displaying detail on the ground and in the air. The installation program will detect the speed of your computer and calculate the optimum detail level for your specific system. If you choose to change this detail level on your own, please do so with extreme caution. You will experience speed degradation if you set your detail level and terrain settings above what is recommended for your computer system. The following is a chart that shows which settings you should use for your system configuration (the boxes in white are the settings we recommend you use):

	Low Detail	Medium Detail	High Detail	Max Detail	Terrain On	Horizon On	Clouds On
12MHz 286	✔						
16MHz 286	✔						
16MHz 386	✔						
20MHz 386		✔			✔	✔	
25MHz 386		✔			✔	✔	
33MHz 386			✔		✔	✔	✔
25MHz 486+				✔	✔	✔	✔

Installing and loading *Falcon 3.0*

Before installing *Falcon 3.0* on your hard drive, you should make a backup copy of the *Falcon 3.0* disks by following the instructions in your DOS manual. You should then install *Falcon 3.0* from these backups you have just created.

Due to the size of this simulation, *Falcon 3.0* must be installed to a hard drive. Before installing, be sure that you have **at least 11MB of free disk space** on your hard drive. The Install program will tell you if you don't have enough hard disk space.

To determine how much free hard disk space you have, run the DOS utility CHKDSK. The fifth line down will tell you the amount of hard disk space you have. For example, if the fifth line reads "11264000 bytes available on disk" or more, this means you have at least 11MB available and you can install *Falcon 3.0*. If the number is less than "11264000," you will need to remove some files to increase your free hard disk space before installing.

IMPORTANT NOTE ABOUT INSTALLATION!

You must install Falcon 3.0 *from the Install program on your floppy disks. Do not simply copy all the files from your floppy disks onto your hard drive. The Install program needs to decompress files after it installs them on your hard drive. You will be unable to run* Falcon 3.0 *unless you follow the installation procedure described below.*

Installation procedure

First boot your machine and then follow these directions:

1. Insert *Falcon 3.0* Disk 1 into either drive A or B.
2. Type `a:` or `b:` and then press Enter. This will change the drive to whichever drive (A or B) you inserted your disk into.
3. Type `install` and then press Enter. This will load and run the installation program.

From here, follow the directions onscreen to install *Falcon 3.0*. The Install program will first check your computer to see if you have a sound card in your computer. If it finds a card, it will ask you if you want *Falcon 3.0* to use it. After you type Y or N, you will reach the Install program's main menu.

The Install program will automatically set the default source and destination drive as well as the path to your hard drive. If you want to change any of these parameters, use the up and down arrow keys (↑ and ↓) to highlight the selection of your choice.

To install *Falcon 3.0* to your hard drive, press ↓ until you reach the option BEGIN INSTALLATION, then press Enter to start the installation process.

Install menu options

SOURCE DRIVE: This option cannot be changed. You must load the Install program directly from Disk 1.

DESTINATION DRIVE: This option will check to see if you have a hard drive, and then default to that drive. If you want to select a driver other than the one listed, use the left and right arrow keys (← and →) to select the drive letter.

DESTINATION PATH: This option will allow you to change the location where *Falcon 3.0* will be installed. The default path is \FALCON3. If you want to change the path, press Enter and then type in the path. Example: `\GAMES\FALCON3`.

BEGIN INSTALLATION: This will start the installation procedure with the options you have chosen. Files will be transferred from Disk 1 to your hard drive. You will then be prompted to insert the next disk and then press any key. This procedure will be repeated for each of the five disks. The window at the bottom of the screen will display the files being copied onto your hard drive.

Once the Install program has copied the files from your floppy disks to your hard drive, it will proceed to decompress those files. This procedure can take anywhere from *15 to 30 minutes* depending on your CPU speed and the speed of your hard drive. You don't need to wait around while this decompression is taking place — the computer will take care of the entire procedure.

Finishing the installation

When you are finished with the installation process, remove the last disk from your computer and store your disks in a safe place. You will no longer need these disks to play *Falcon 3.0*.

Memory requirements

600K (614,400 bytes)

Because of the graphics and complexity of *Falcon 3.0,* you must have 1MB of RAM minimum on your computer. In addition, you must have *at least* **600K free RAM (614,400 bytes)** in order to load *Falcon 3.0.* This will require you to load DOS into high memory.

Running the DOS utility CHKDSK will inform you on the last line how much free RAM you have. For example, if the last line reads "614400 bytes free," it means you have 600K free RAM (600 times 1024). If you have less than this amount of free memory, *Falcon 3.0* will not run. The optimum amount of free RAM you should have is 620K (634,880 bytes).

Falcon 3.0 will not run if you have any TSR (Terminate and Stay Resident) programs such as device drivers, RAM disks, DOS shells, print spoolers, etc. running in the background. You will need to turn these off before running *Falcon 3.0,* or load them into high memory using your EMS driver. In addition, *Falcon 3.0* will not operate when Microsoft Windows is running. Many of the TSRs mentioned above can be turned off in your AUTOEXEC.BAT and CONFIG.SYS files.

If you are experiencing other problems trying to free up enough memory to load *Falcon 3.0,* you may wish to consult the **Trouble-shooting** area later in this section.

Conventional, extended & expanded memory

Most IBM and compatible computers come standard with at least 640K RAM. This first 640K RAM is known as **conventional memory**. Physical memory above 1 megabyte (1MB) RAM is known as **extended memory**. *Falcon 3.0* utilizes **expanded memory (EMS)** for some of its features (see below).

Extended memory can be converted to expanded memory through the use of an expanded memory manager (EMM) that complies with the LIM 4.0 specifications (such as QEMM.SYS by Quarterdeck or EMM386.SYS which comes with DOS 5.0 and Microsoft Windows). In order to install your EMM properly, you will need to add a line or two to your CONFIG.SYS file. Consult your EMM manual for instructions on how to adjust your CONFIG.SYS file.

NOTE: Many 80286 memory managers use a great deal of conventional memory for their operations. While the EMM is running, it may be using so much free RAM that you are unable to run Falcon 3.0. *If you're having problems with your EMM driver taking too much RAM, you may wish to consult your computer dealer for a different expanded memory driver.*

Falcon 3.0 stretches memory to its limit; therefore, it requires you to have at least 1MB RAM in order to run the program. It will take advantage of all the EMS you have available by providing longer replays, digitized radio messages and less disk access time.

Loading *Falcon 3.0*

These directions assume that you have already installed *Falcon 3.0* to your hard drive.

1. Turn on your computer (if you haven't already done so).
2. Change to the hard drive that contains *Falcon 3.0.* (If you selected the default drive when installing the program, you can switch to the hard drive by typing `c:` and then pressing Enter.)
3. Change to the FALCON3 directory. (If you selected the default path when installing the program, you can enter the directory by typing `cd falcon3` and then pressing Enter.)
4. Type `falcon3` and then press Enter.

If you get an error message that says you don't have enough free RAM available and you have removed all your TSRs, see the previous section on memory or the **Troubleshooting** area for additional help on loading *Falcon 3.0.*

Five minutes to play

The following is for those of you who don't want to read anything in order to play *Falcon 3.0.* We recommend at least reading **Section II: Instant Action** of the **Flight Manual,** but if you are itching to get up in the air, you can follow these directions:

1. After loading *Falcon 3.0,* you will be in the War Room. (This is a room with a large map on the back wall and a number of monitors in the foreground.)
2. Select the upper right-hand monitor with your mouse or by using the arrow keys and Enter. (This monitor will display the words INSTANT ACTION.)
3. You will now be placed in the cockpit of your F-16. Use the arrow keys (↑, ←, → and ↓) to fly around, the Enter key to switch between air-to-air weapons and the Spacebar key to fire the selected weapon. For other flight controls, see the enclosed **Quick Reference Card.**

Congratulations! You're up in the air. Your objective is to shoot down as many enemies as you can. If you get shot down yourself, you'll be brought to a high score screen where you can enter your name for the records.

Troubleshooting

Due to the complexities and intense realism of this simulation, *Falcon 3.0* requires a vast amount of free memory to operate. *Falcon 3.0* needs **600K (614,400 bytes) of free memory** to run. This will require you to load DOS into high memory. If you are having additional problems freeing up this much RAM, this area will attempt to help you configure your system so that you can get the required 600K.

Basics of finding free memory

- Check your CONFIG.SYS file to be sure that the DOS=HIGH command is included.
- Load Terminate-and-Stay-Resident (TSR) programs (mouse drivers, network drivers, RAM disks, DOS shells) into high memory instead of conventional memory. Consult your DOS manual or expanded memory manager manual to learn how to accomplish this.
- Temporarily modify your CONFIG.SYS and AUTOEXEC.BAT files so they do not load TSRs that may use up too much free RAM for *Falcon 3.0* to run.
- Try using a commercial EMS manager in place of the MS-DOS EMS manager EMM386. Third-party EMS managers can improve your system's performance by using far less conventional memory and providing improved ability to load TSRs into high memory. Also, a commercial memory manager will allow you to use more extended memory without constantly modifying your CONFIG.SYS file.

Creating a boot disk

If you are still having problems finding enough free memory, you may want to create a bootable floppy from which you can play *Falcon 3.0*. The purpose of a boot disk is to temporarily reconfigure your computer so that *Falcon 3.0* can run on it. Most users have their CONFIG.SYS and AUTOEXEC.BAT files on their hard disk arranged so that they have many TSRs loading at once. This will use up so much memory that *Falcon 3.0* will be unable to run. By creating a boot disk with a separate CONFIG.SYS and AUTOEXEC.BAT, you can run *Falcon 3.0* without modifying your system's current setup.

The following procedure assumes you have already installed *Falcon 3.0* onto your hard drive and that you have DOS 5.0 (or a later version) installed on your hard drive at C:\DOS.

Procedure for creating a boot disk

1. Insert a blank, unformatted 1.2MB 5¼" or 1.44MB 3½" disk into drive A and type this command from the DOS prompt:

```
FORMAT A: /S
```

2. When the disk is finished formatting, go to the FALCON3 directory on your hard drive and type the following:

```
DIR *.BAT
```

This will provide you a list of five batch files. These batch files will create a brand-new CONFIG.SYS and AUTOEXEC.BAT file on the floppy disk you just formatted. To activate the batch file, type:

```
BOOT or
BOOTEMM or
BOOTMICE   or
BOOTNET or
BOOTPS2 or
BOOTQEMM
```

BOOT.BAT – This batch file simply configures your system to have the most free memory possible. If your system has only 1MB of RAM, you should run this batch file.

BOOTEMM.BAT – This batch file will activate EMM386.EXE and allocate 1MB of expanded memory to run *Falcon 3.0*. This gives you slightly less free memory to run *Falcon 3.0*. However, *Falcon 3.0* will now take advantage of the extra 1MB of expanded memory. You will need 2MB or more of RAM to use this batch file.

BOOTMICE.BAT–This batch file is similar to BOOTEMM.BAT because it provides 1MB of EMS. The difference is that a mouse driver will be loaded as well. This mouse driver will be loaded into high memory so that it won't interfere with *Falcon 3.0*. You will be asked to copy the mouse driver that is on your hard disk over to the boot disk. Find where your mouse driver is on your hard drive, and then type the following:

```
COPY MOUSE.COM A:
```

MOUSE.COM is the name of most mouse drivers. If your mouse driver is not named MOUSE.COM, then you need to replace these words in your AUTOEXEC.BAT file on your boot disk with the correct words for your mouse driver. If you use MOUSE.SYS instead of MOUSE.COM, you will need to manually edit the CONFIG.SYS file to load the mouse.

BOOTNET.BAT – This batch file will load IPX.COM and NET5.COM into high memory and provide 1MB of expanded memory. This will allow *Falcon 3.0* to work with a Novell NetWare-compatible network in Communications mode. You will be asked to copy both IPX.COM and NET5.COM from your hard drive to the boot disk. Change to the directory where you keep your network drivers and then type:

```
COPY IPX.COM A:
COPY NET5.COM A:
```

If you want to run a mouse driver along with your network driver, you will need to modify the AUTOEXEC.BAT file that was created on your boot disk. First, copy MOUSE.COM to your boot disk as described above. Next, use a text editor and remove the three letters REM from line five of the AUTOEXEC.BAT file on your boot disk. After you reboot, the AUTOEXEC file will attempt to load the two network drivers and the mouse driver into high memory. However, this setup varies from machine to machine and may use too much memory to run *Falcon 3.0*. If this is the case, go back and reinsert the letters REM in front of line five of the AUTOEXEC.BAT file.

BOOTPS2.BAT – This batch file will create a boot disk especially for IBM PS/2 owners. Because the high memory area of PS/2s has a different configuration from other machines, it requires its own boot batch file. You should refer to QEMM's manual for more specifics on IBM PS/2 memory management.

BOOTQEMM.BAT – This batch file is provided for owners of Quarterdeck's QEMM386 memory manager. QEMM does an excellent job of installing itself onto a hard disk, but this batch file is provided for your convenience. BOOTQEMM.BAT requires QEMM to be located on your hard drive at C:\QEMM. To load the mouse and network drivers high, add the appropriate lines to the CONFIG.SYS and AUTOEXEC.BAT files that load the drivers. Now run the OPTIMIZE program which comes with QEMM386. OPTIMIZE will configure your system to load everything it can find into high memory.

Using a boot disk

After the boot disk is created, insert the disk into drive A and restart your computer. Now change to the FALCON3 directory on your hard drive to run *Falcon 3.0*.

Final note on boot disks

If you are using a real-time software compression driver on your hard drive (such as STACKER or DOUBLE DISK), you must make modifications after using these batch files. Edit the CONFIG.SYS on the boot disk to include the device driver and load it high with the DEVICEHIGH command. Consult your STACKER or DOUBLE DISK manual for further instructions on how to load the driver high.

EMS and what it's used for

Falcon 3.0 takes advantage of your EMS if you have at least 1MB of EMS. EMS is used in a number of different ways — mostly to load the altitude information, 3-D object information, run ACMI and to play the digitized radio messages. These three settings can be turned on and off from the System Setup screen in the Configuration area.

To increase the amount of EMS available, you can use a text editor to modify the CONFIG.SYS file on the boot disk or your hard drive. Simply increase the number 1024 in the CONFIG.SYS file to the maximum amount of your computer's total RAM. (For example, if you have 2MB of RAM, you can have 1MB of EMS so the number should be 1024. Keep increasing by 1024 for each additional MB of RAM you have, 3MB RAM=2048, 4MB=3072, etc.)

1MB RAM (no EMS)

If you have 1MB RAM on your machine, we recommend using your EMS driver to load your other device drivers (network, mouse, etc.) into high memory. You will be unable to hear digitized radio messages or use the ACMI replay. You will be able to play in Communications mode, but unless your network drivers are loaded high, you can't play over a Novell NetWare-compatible network.

2MB RAM (1024K EMS)

With 2MB RAM on your machine, you can adjust your CONFIG.SYS file to utilize 1024K of EMS. This will allow you to hear digitized radio messages and place the altitude and object data into EMS. If you don't have enough EMS remaining to create a replay, you may want to turn off some of those three to free up space.

3MB RAM (2048K EMS) or more

With 3MB RAM, you should be able to load all the altitude and object data into EMS as well as hear the digitized radio messages. This will also give you enough EMS space to use your ACMI replay. With more than 3MB RAM, you will get a longer replay. Just be sure you have enough hard disk space for the replay file!

Customer Support

There are a few requirements for *Falcon 3.0* that you must have before you call our Customer Support department: 1) You must have DOS 5.0 loaded into high memory, 2) You must have a VGA card and VGA monitor, 3) You must have a hard drive, and 4) You must have 1MB RAM. If you satisfy all these requirements and are still having problems, read onward. If not, you will need to obtain one or more of those items before you can run *Falcon 3.0*.

If you are still experiencing problems with installation or another facet of the program not described in the manual, you can contact our Customer Support department. Our Customer Support department receives hundreds of calls a day, so if you have the following information written down and handy when you make your call, it will make that call all the more efficient and quick:

1. *The program name and version number.* Our Customer Support department receives calls on a various number of products, so saying "the installation won't work" doesn't help them unless you provide a program name. The version number for *Falcon 3.0* can be found on the credits screen at the beginning of the game (the screen with the names of the development team).

   For example you might say: "I'm having problems getting the sounds for *Falcon 3.0* to work. I'm running version 3.0c."

2. *The type of your computer as well as its speed and memory.* As with the program name, we can't help you with your comments and questions without knowing what kind of computer you own. When talking to the people in Customer Support, let them know that you've got an IBM compatible computer, the brand name, what clock speed you're running at and how much RAM you have. Also let them know if you are running any TSRs or EMS drivers and what those are.

   For example you might say: "I have a Pink Banana Technologies 386 16MHz with 2MB RAM and a MegaCool VGA video card. I've got my mouse driver loaded in high memory using my StickIt EMS driver."

With the preceding information, you will be able to get a better and quicker response from our Customer Support team. If you have a complaint or comment about a non-technical area of *Falcon 3.0,* you should write a letter to our company. This way, it can be forwarded directly to our design and programming team.

Contacting Customer Support

You can contact our Customer Support department in the following ways:

Mail:

Spectrum HoloByte
2061 Challenger Drive
Alameda, CA 94501
ATTN: Customer Support

This is the place to send compliments or other comments about the design and implementation of our products. We read all letters that come in, and will respond to questions asked.

Phone:

(510) 522-1164
9:00 AM to 5:00 PM Pacific Time
Monday through Friday

This is the direct line to our Customer Support department.

Online Services:

America Online: SPHERE
CompuServe: 76004,2144
Internet: 76004.2144@COMPUSERVE.COM
GEnie: HOLOBYTE
Prodigy: TKNJ33A

If you have a question or comment, you may wish to write us on one of the online services rather than sending a letter. We read and store all of your comments for future products and design meetings.

Also, look for our Customer Support boards on America Online, CompuServe and GEnie where you can download the latest program updates and read about important developments in our current products.

What is a campaign?

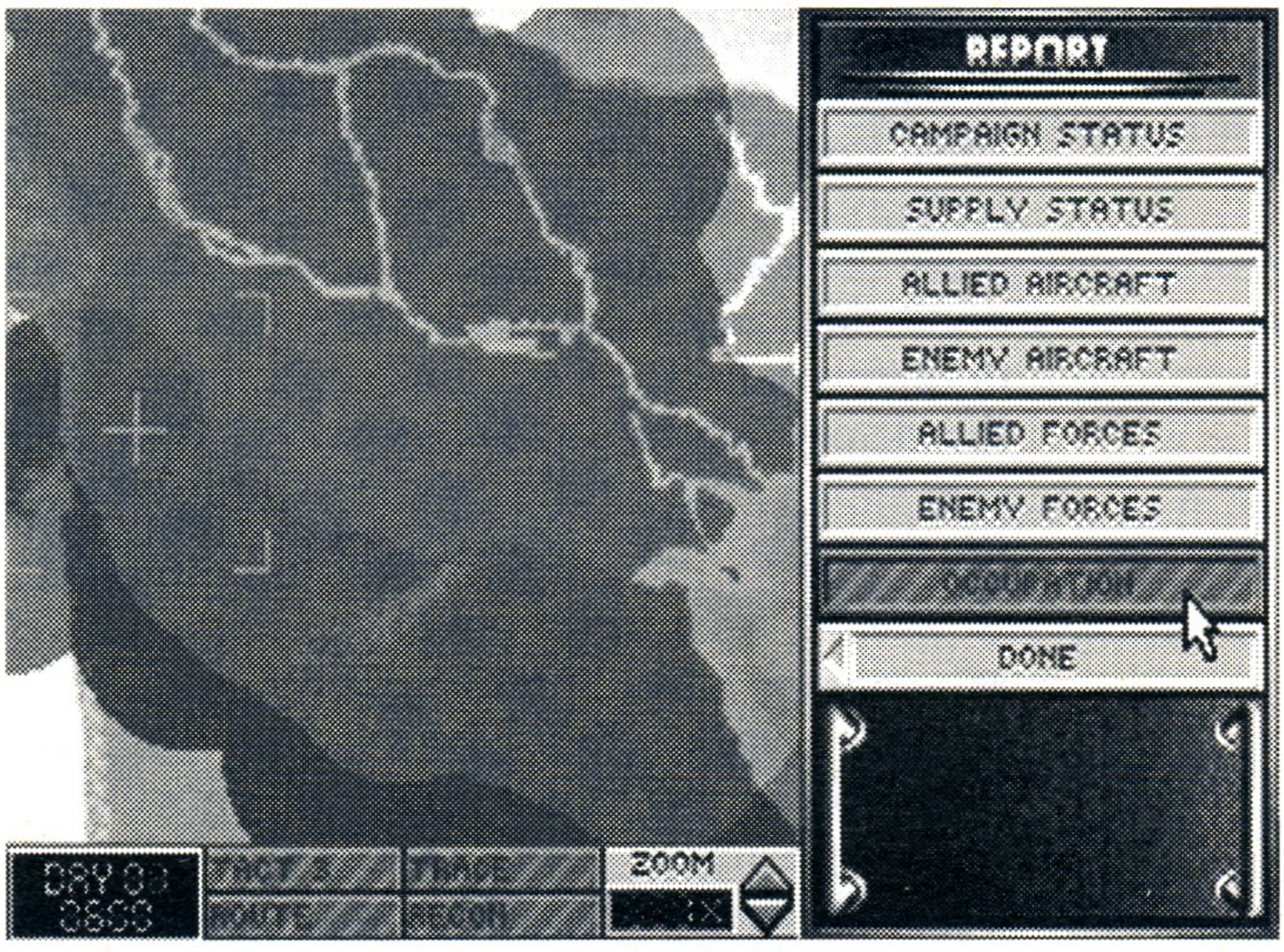
A *Falcon 3.0* campaign is a complicated exercise involving many different air and ground forces working together to obtain a specific objective as stated in the beginning of the campaign. Each side in the conflict has a vast amount of troops, equipment, armament and supplies that it will use to reach its ultimate goal. Your F-16 squadron is but one element — albeit a key one — which could achieve allied success in the war.

Before every mission in the campaign, other squadrons and ground forces from both sides are pounding away at each other on the battlefield. Furious dogfights are being fought over occupied lands and ground troop grunts are slugging it out in massive firefights. Supplies are being shuttled to the front from storage facilities deep within each side's territory. Factories are producing armament, and supply planes are airlifting equipment to each side in a desperate attempt to sway the tide. What you see as Squadron Commander is very limited. Your only concern is for your specific objective at the time. If you complete it, the allies gain another foothold to victory. If you fail, the enemy gets that much stronger and harder to defeat.

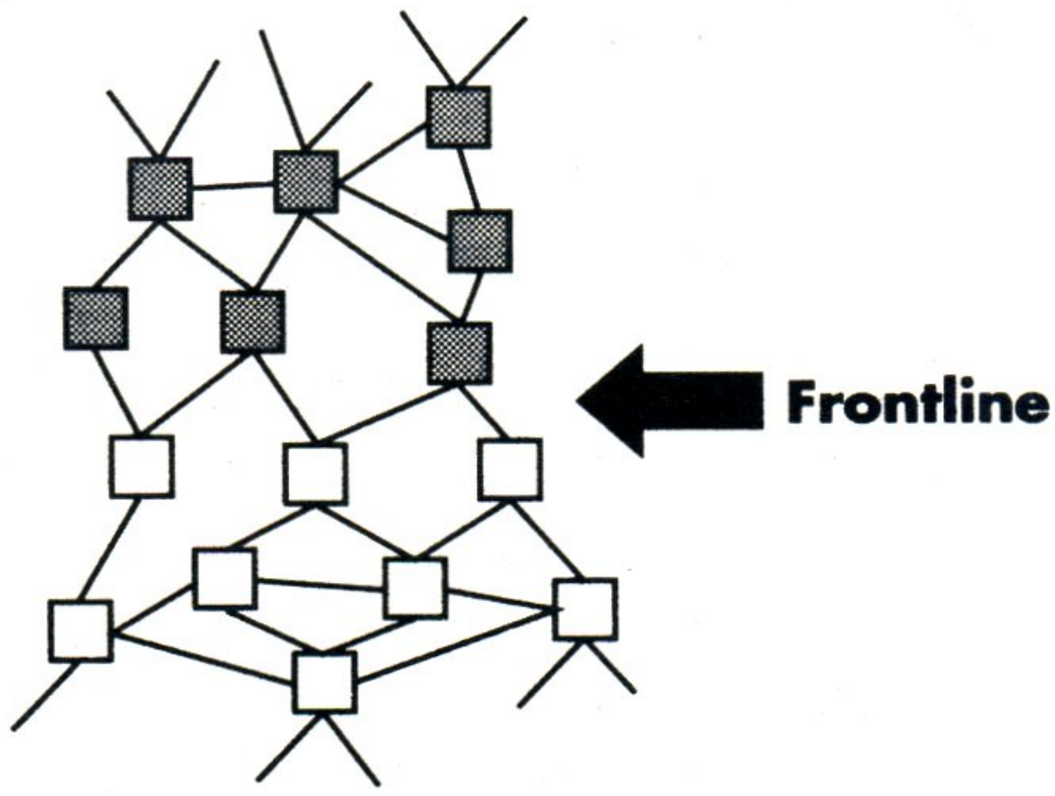
What is most important to remember is that your squadron is the most important element in the entire war. Your pilots are the best trained; the aircraft are the best the Air Force can produce. Your support staff (ordies, ground crew, medics) are the finest in their profession. They may keep your squadron up and running, but it's up to you as Squadron Commander to lead your forces to victory. Central Command, the White House and the rest of the free world are all watching. They're counting on you to do your best and uphold the flag of freedom and democracy. Good luck. Don't disappoint them.

Occupation map and nodes

Each theater has been divided into a number important strategic sites (about 80 or so in each theater) known as "nodes." These nodes include airfields, cities, troop staging areas, bridges and other important positions within the boundaries of the theater's region. (You can see all of the nodes by using the STRAT/TACT button at the bottom of the campaign interface.) Each node is connected to at least one other node. The nodes are color-coded: red for enemy- and blue for ally-controlled territory. The Occupation map (in the Debriefing screen or the Report screen) will show color-coded rings and a percentage based on the amount of territory the two sides control.



At the beginning of a campaign, Central Command determines which important nodes it must control in order to cause a collapse of the enemy's war-making infrastructure. The enemy is also doing the same — assessing your crucial areas for weaknesses and potential crippling blows. Throughout the war, CentCom will occasionally send your squadron to these potential hotspots (because you're the best, of course!). Successfully completing these missions will gain more toeholds towards an allied victory.



The frontline is where blue (friendly) and red (enemy) nodes are adjacent to one another. These are the major areas of dispute and the places where Central Command is most likely to send you on missions. Troops and weapons are sent to these areas from supply lines (connecting the nodes) running deep within each side's territory. All nodes are captured and lost on the frontline. If you meet the daily mission success conditions (see the following under "Victory conditions"), your forces will have a better chance to capture adjacent enemy nodes. If your squadron fails to meet the victory conditions, it is more likely that the enemy will take over your frontline nodes. If your airbase is on the frontline when the enemy takes it over, you will have to "bug out" and relocate to another airbase.

Missions are basically broken down into offensive, defensive and frontline missions. Offensive missions occur when CentCom decides you should attack a crucial site within enemy territory. These missions generally consist of bomb runs and escort missions. Defensive missions occur when the *enemy's* command structure sends aircraft or troops to attack a key site in your territory. These missions are primarily CAP missions, scramble missions and screen missions. Frontline missions are ones on the main battlefield where a vast number of ground troops are in operation. These missions are mainly CAS, ground strike and air superiority missions.

Ground forces color coding

In a campaign, you will need to determine which ground units are friendly and which are enemy. All three theaters use the same color-code system for units: green or gray for allied ground forces and brown for enemy ground forces.

Victory conditions

There are three different types of victory conditions: individual mission completion, daily mission success and campaign victory. These are described following:

Individual mission completion

On the Briefing screen, there will be a mission description for each of the four missions you fly in a day. This will give you specific objectives which you must complete in order for your mission to be counted as a success. Failure in any area of the mission description will be tallied as a "mission failure." Each mission can be defined as one of 10 different types. These mission names can be found on the Report screen or by looking for "key words" in the mission description on the Briefing screen. For simplicity's sake, we will use the Report screen's name for each mission type when talking about mission success and failure. The key words in the briefing will be described in parentheses.

Air Superiority (deny enemy air activity) — This mission, generally known as a fighter sweep, requires your flight to destroy at least three enemy aircraft along your flight route. Failing to do so will constitute an unsuccessful mission.

Bomb (name of target) — Bombing missions require your flight to destroy the target as selected in the TARGET button on the Edit Waypoints screen. If this target is not destroyed, it is considered a failed mission.

Close Air Support (command ALO has requested TAC AIR) — A CAS mission will require that there be more enemy losses (ground units of any sort) in the target area than allied losses. Any other condition constitutes mission failure.

Combat Air Patrol (fly CAP over area) — A CAP mission requires your flight to destroy any incoming aircraft. This will generally be enemy fighter and strike aircraft. If you don't knock down any enemy aircraft, the mission is a failure.

Escort Bombers (escort B-52s) — Your aircraft must reach the B-52's target area. Any other condition will be a failed mission.

Escort Strike Aircraft (escort strike aircraft) — *All* additional strike aircraft must be functional and operational at the end of the mission. If any of the strike aircraft are downed, it will be considered a mission failure.

Escort Transports (milk run) — *Both* transports must be functional and operational at the end of the mission. If any of the C-130 transports are downed, it will be a failed mission.

Ground Strike (name of target or "armed reconnaissance") — Your flight will need to destroy more than seven ground units in the area of conflict. On armed reconnaissance (armed recce) missions, any targets on the way to the conflict area are fair game. If seven ground units are not destroyed, the mission will be a failure.

Scramble (list of incoming aircraft) — There are three conditions for a successful scramble mission: 1) your flight must destroy at least three enemy aircraft, 2) less than seven allied ground units can be destroyed and 3) no enemy bombers can make it through to your home airbase. If any of these three objectives are not achieved, it is a failed mission.

Daily mission success

At the beginning of a campaign, each side has an initial offensive strength. This strength is used to determine how aggressive each side is in waging war on a given day. Each side's offensive strength is checked at the end of each day and will attack according to how high that offensive strength is.

Your squadron has a direct result on your side's offensive strength. Since you are the "elite of the elite" in F-16 squadrons, your success or failure affects the entire campaign strategy. If you successfully complete *more than half* of your missions in any given day (i.e. successfully complete three or four missions), the allies' offensive strength will increase. If you only successfully complete only one or two missions, the allies' strength will decrease.

Depending on each side's relative strength, this may not have any immediate effect, but it will have an underlying effect. For example, if the enemy's strength is very low and the allies' strength is very high, the likelihood of one day's worth of failed missions turning the tide of the war is much lower than if the two sides' strength was even at that time.

Campaign victory

Before the campaign begins, each side assesses the situation and determines a set of victory conditions — conditions that once achieved will win the war for that side. Throughout the campaign, each side is attempting to control these key sites which are known as "victory nodes."

There are three possible allied outcomes for each campaign: victory, defeat and stalemate. To determine the final outcome, each side's victory nodes are tallied up at the end of the war and a percentage is derived. These percentages work as follows:

Victory: If the allies control 70% of their victory nodes, they are considered to have won the war.

Defeat: If the enemy controls 70% of their victory nodes, they are the victors and the allies have lost the war. Additionally, if at any time during a campaign you have no airbases from which you can launch your F-16s, the allies automatically lose the war.

Stalemate: If neither side has control of 70% of its victory nodes, the war is considered a stalemate and both sides head to the bargaining table.

Errata and additions

In compiling the lengthy **Flight Manual**, there were a number of things that were added late in the program or changed at the last minute. These are listed on the next couple of pages.

Errata

The following are changes in the **Flight Manual.** Please refer to these pages when necessary.

Section III: War Room

Page 19: SQUAD (Squadron) monitor — After you have found an insignia you like using the arrows, you need to click on the insignia itself to select it. With the keyboard, you need to move your cursor to the left of the arrows and then press Enter. You will know that you've selected the insignia if the arrows to the right of the monitor disappear.

Page 21: COMMS (Communications) monitor — You can only select this monitor after choosing a squadron when you want to play in Communications mode. It will then bring you to the Pilot Transfer section of the Squadron Ready Room if you haven't already selected a pilot. If you have selected a pilot, it will bring you to the Communications Setup screen. See the Communications section for more details.

Section V: Air Combat School

Page 63: Target Designator Box — If the enemy aircraft you're targeted on is about to break radar lock, the sides of the TD box will change to broken lines. If this happens, don't fire a missile until you get another radar lock on the target.

Page 71: Rippling bombs — You can now ripple 2–24 bombs at a time, not just 2–12.

Section VI: Red Flag

Page 89: Time button — This display reads "DAY 00" because the Red Flag exercises at Nellis AFB are continuously running.

Page 91: Enemy/Allied Aircraft screen — Although you have a maximum of eight allied and eight enemy aircraft to place for each mission, you can only have **six different types** of aircraft other than your own F-16. Thus, you can have three types of enemy aircraft and three types of allied aircraft or any combination for a total of six aircraft types.

Page 94: S AND D — Search and Destroy. This is the best action for SAM suppression (Wild Weasel) missions.

Page 101: F-16 Armament screen — This screen allows you to customize the weapons load of any F-16 in the mission. Initially, each aircraft will not have any weapons loaded on board, so you must load the weapons you wish to carry for the mission.

Page 103: A-G Bombs — The Durandal A-G bomb is also known as the BLU-107/B.

Section VII: Campaign

Page 107: Choosing a squadron — You choose an existing squadron by clicking in the center of the right-most monitor in the War Room. Each time you click on this monitor, you will cycle through the existing squadron insignias.

Page 118: S AND D — Search and Destroy. This is the best action for SAM suppression (Wild Weasel) missions.

Page 123: A-G Bombs — The Durandal A-G bomb is also known as the BLU-107/B.

Page 130: Debriefing (Medals) — After the Mission Summary, you will be informed whether or not any of your pilots received a medal. If none of them warranted a medal, this screen will be empty; otherwise, the pilot's name and the name of the medal will be displayed.

Page 131: Debriefing (Occupation) — After the Medals and Awards section of the Debriefing, you will be shown the campaign map with areas colored in red and blue. This map is identical to the one in the Report screen. Areas in pure red represent enemy occupation, while areas in pure blue show allied occupation. When areas in red and blue overlap, you will see a purplish effect. This

is the battlefront — areas of major conflict and dispute. This screen is shown to give you an overall view of how the war is progressing.

Page 131: Debriefing (Mission Evaluation) — Finally, after the Occupation section of the Debriefing, you will be informed if your mission was a success or failure and how many of each type of enemy aircraft your squadron shot down. These recorded kills will be registered in each pilot's individual record as well as the overall record for the squadron.

Section VIII: Flight

Page 143: Target Designator Box — If the enemy aircraft you're targeted on is about to break radar lock, the sides of the TD box will change to broken lines. If this happens, don't fire a missile until you get another radar lock on the target.

Page 164: Radar/Electro-Optical (REO) Display — The three different radar types (SAD, SAM and HFR) are options chosen in the Configuration area and not by a key or control while you are flying. These are three completely different types of radar with totally different operations.

Section IX: Configuration

Page 195: No sound board — In order to hear digitized radio messages through your computer's internal speaker, the only item you need to select is the PC SPEAKER option from the Radio Messages menu. If you want to hear other sound effects through your internal speaker, choose PC SPEAKER from the Sound and Music menu. Music cannot be played through the internal speaker.

Note: Machines with only 1MB of RAM will be unable to use the Radio Messages feature, so the Radio Messages menu should be set to NONE and the Bkgrd Sound menu should be set to OFF.

Additions

Following are additions to the program that were too late to be included in the manual.

Flight model roll rates

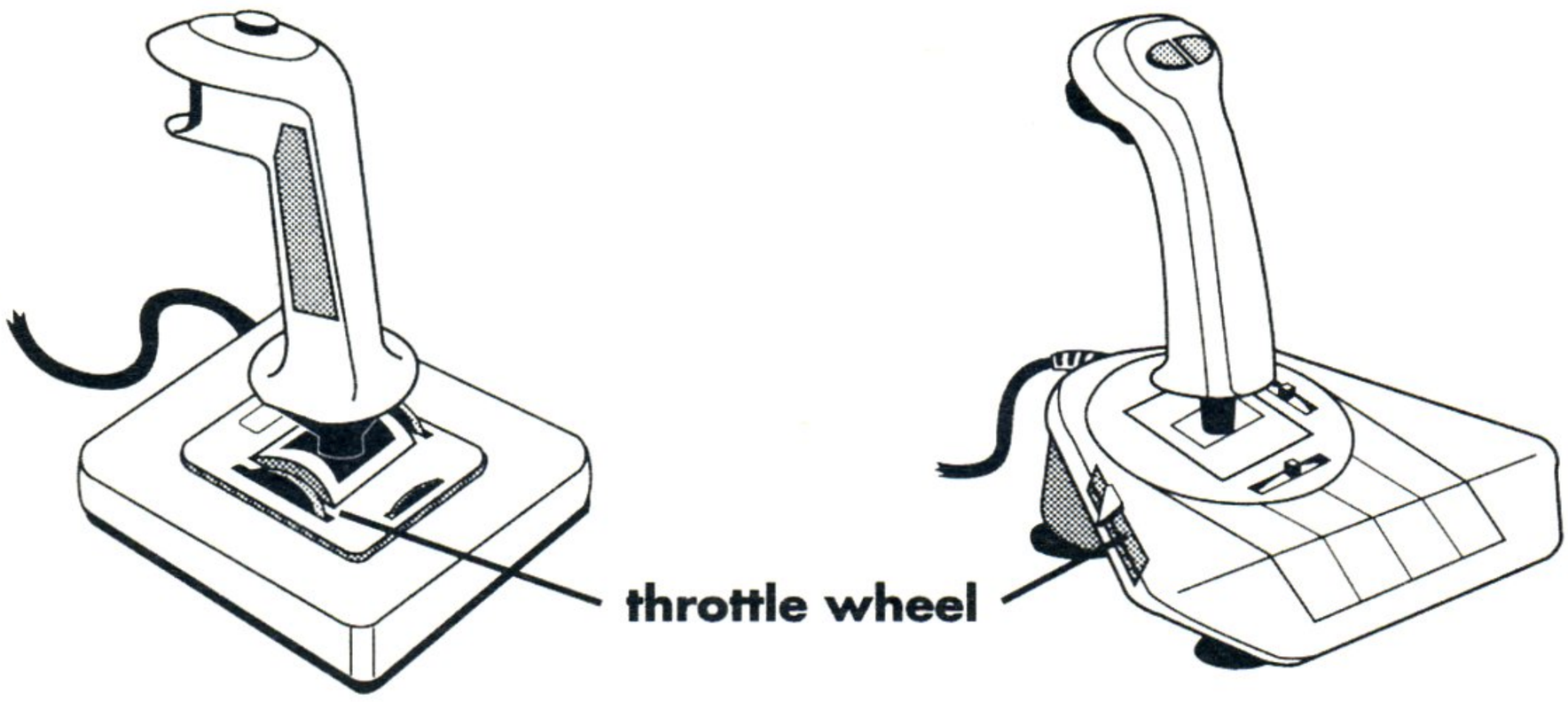
The roll rates on the Simplified and Moderate flight models are significantly slower than on the Complex and High Fidelity flight models. This allows a beginning user more control while learning how to fly.

Length of a campaign

A campaign can last anywhere from 7–14 days, and your squadron will be flying four missions a day.

Throttle wheels & rudder pedals

If you have a joystick with a throttle wheel *(CH FlightStick* and *Kraft Thunderstick)* or rudder pedals *(MAXX Pedals)*, you can calibrate them after the program asks you to calibrate your joystick. The program will automatically detect if you have one of these joysticks and will give you an option whether or not to use them. The location of the throttle wheels on the *CH FlightStick* and *Kraft Thunderstick* are shown below:



CH FlightStick ***Kraft Thunderstick***

Campaign — War Update screen

If you have a sound card and the Music option is turned on (from the Configuration screen), the type of music you hear will indicate how well you are doing in the war.

"Life after death"

One of the new features we added to *Falcon 3.0* is called the "life after death" view. Life after death allows you to view the action in a Red Flag or campaign mission even if the plane you're flying has been destroyed. If your plane crashes into the ground or you are wiped out by a missile, the mission will not immediately end. A dialog box will appear informing you of your death and giving you the opportunity to watch the rest of the mission from your wingmen's point of view (if you have any on the mission).

You can now see the action from any of your wingmen on the flight by pressing the [7] key to change your view from wingman to wingman. If you want to watch a different target from the wingman's view, press the [T] key. If all of your wingmen are destroyed, the mission will end. Otherwise, the only way to end the mission (save for its completion) is to select End Mission from the FILE menu.

Level advancement in Instant Action

After you destroy a certain number of enemy aircraft, you will advance to the next level of Instant Action play. Every enemy pilot in this new wave of aircraft will have a Enemy Logic Level one higher than the one you set in the Configuration screen. (For example, if you had Enemy Logic Level set to Veteran in the Configuration screen, the next wave of aircraft wil have Ace pilots.) After the Ace aircraft wave, all pilots in subsequent waves will have Ace logic level.

Erasing Instant Action top ten scores

To erase the Instant Action high scores list, simply erase the file TOPTEN from the FALCON3 directory by typing `DEL TOPTEN` at the DOS prompt and then pressing Enter.

Heat-seeking missiles and the sun

If you're following an enemy aircraft that heads towards the sun, your heat-seeking missiles (AIM-9P and AIM-9M) may be fooled by the heat source. Your best bet is to keep your position until the enemy is away from the sun before your fire your missiles.

CCIP bombing method changes

Normally when you are using the CCIP method for dropping iron bombs, a small horizontal bar appears above the bombsight. If this bar is twice as thick as normal, your fire control computer is telling you that it isn't a good time to drop the bombs because of your aircraft's awkward position to the target.

In addition, you will be unable to drop any iron bombs from an inverted position.

ILS HUD mode change — Heading to runway

In the lower right-hand corner of the HUD, just above the Distance to Waypoint Indicator, you will find the Runway Heading Indicator. This will tell you the proper angle of approach for the runway. This way, you can line up your actual heading with the runway approach angle.

In addition, after engaging the ILS HUD mode, you will notice that your viewing angle has dropped by approximately 10°. This is to make it easier to view the runway as you approach for landing.

Wingman messages — AWACS plane

"Waypoint x at xxx - Angels xx - xxx miles" – This message from your AWACS plane describes the direction to your next waypoint: the number of the waypoint, the compass direction you should

take, the altitude you should be at (Angels), and how many miles away the waypoint is. This is a generic instruction message from your AWACS plane and is supposed to sound like garbled radio static.

Communications mode

When you think you've mastered the solo game, there's another challenge waiting for you in *Falcon 3.0:* Communications.

With *Falcon 3.0's* Communications mode, you can challenge your friends to a head-to-head duel or combine forces to take on the enemy in either a single mission or as part of an entire campaign. With a Novell NetWare-compatible local area network (LAN), you can have multiple people to dogfight or go on missions with.

Important note about LANs: Your Novell NetWare-compatible LAN must be Novell IPX protocol compatible. Falcon 3.0 *is not NetBIOS compatible. You also must have your network drivers loaded into high memory.*

Hardware and software requirements

To play in Communications mode through direct-connection or modem, you need the following:

- Either a null-modem serial cable (hooked up between the serial ports on the two computers) or two Hayes-compatible modems (with a baud rate of at least 2400 baud each).
- A registered copy of *Falcon 3.0* installed on each computer.

To play in Communications mode through a Novell local area network, you need the following:

- An expanded memory manager (EMM) capable of loading your networking software into high memory.
- A Novell NetWare-compatible LAN with network nodes and networking software (loaded into high memory) on each of the computers that will participate in the multi-player *Falcon 3.0* game.
- A registered copy of *Falcon 3.0* on each computer involved.

Types of communications play

There are four types of communications play in *Falcon 3.0.*

Two player allied

In this mode, two players will connect with each other (through modem, direct-connect or network) and play a campaign. Both players will be flying for the same side.

Two player duel

This mode allows two players to connect (through modem, direct-connect or network) and battle each other until one or the other is destroyed. The only aircraft in the air will be you and your opponent.

Multi-player allied

With this mode, from two to six players (over a network only) can combine forces to play a campaign.

Multi-player duel

The last mode allows from two to six players (over a network only) to shoot it out until only one aircraft is left "standing." You and your friends will be the only aircraft in the skies, so anything is fair game.

Setting up for communications play

There are a number of things each player needs to do before they can access Communications mode.

Modem

If you are using a modem, have it plugged into your COM port and turned on.

Direct-connect

If you are connecting two computers, you need to hook a null-modem serial cable to the serial ports on the two computers.

Network

If you are connecting through a Novell network, each player must have the appropriate network hardware and software drivers installed on their computer. When connecting through a network, each player must have their network drivers loaded into high memory before running *Falcon 3.0*. Also, *Falcon 3.0* must be run from the local computers, not from the network server.

Finally, each player needs to load *Falcon 3.0*.

Preparing for communications play

Before play begins, the players involved must choose which player will be the "caller." In the two player modes, one player will be "caller" and one will be "answerer." In the multi-player (network) modes, one player will be the "caller" and everyone else will be the "answerer." The caller will be the person who makes the decisions in a campaign mission (more on this later).

The following directions should be followed by each player in the communications game:

1. Select a squadron using the procedure described in **Section III: War Room** of the **Flight Manual.**
2. Select the COMMS monitor in the War Room. This will bring you to the Pilot Transfer screen. (You can also get to the Pilot Transfer screen from the Squadron Ready Room.)
3. Choose the pilot you wish to fly from the monitor in the upper right-hand corner of this screen.
4. Select the Comms button just below the monitor. This will bring you to the Communication Setup screen.

Caller's responsibilities and actions

The player chosen to be the caller has the additional responsibility of choosing the theater he and the other players will be participating in. The **squadron** the caller chooses from the War Room will retain all the campaign information.

In addition, when flying around in the campaign, all the caller's settings on the Difficulty Levels section of the Configuration screen will be transferred to the answerers' machines.

Communication Setup screen

The Communication Setup screen is where you will be making your choices for Communications mode. You can move around this menu by using the mouse or the Tab key and the arrow keys (↑, ←, → and ↓). The Enter key or the mouse button selects an option.

Mode

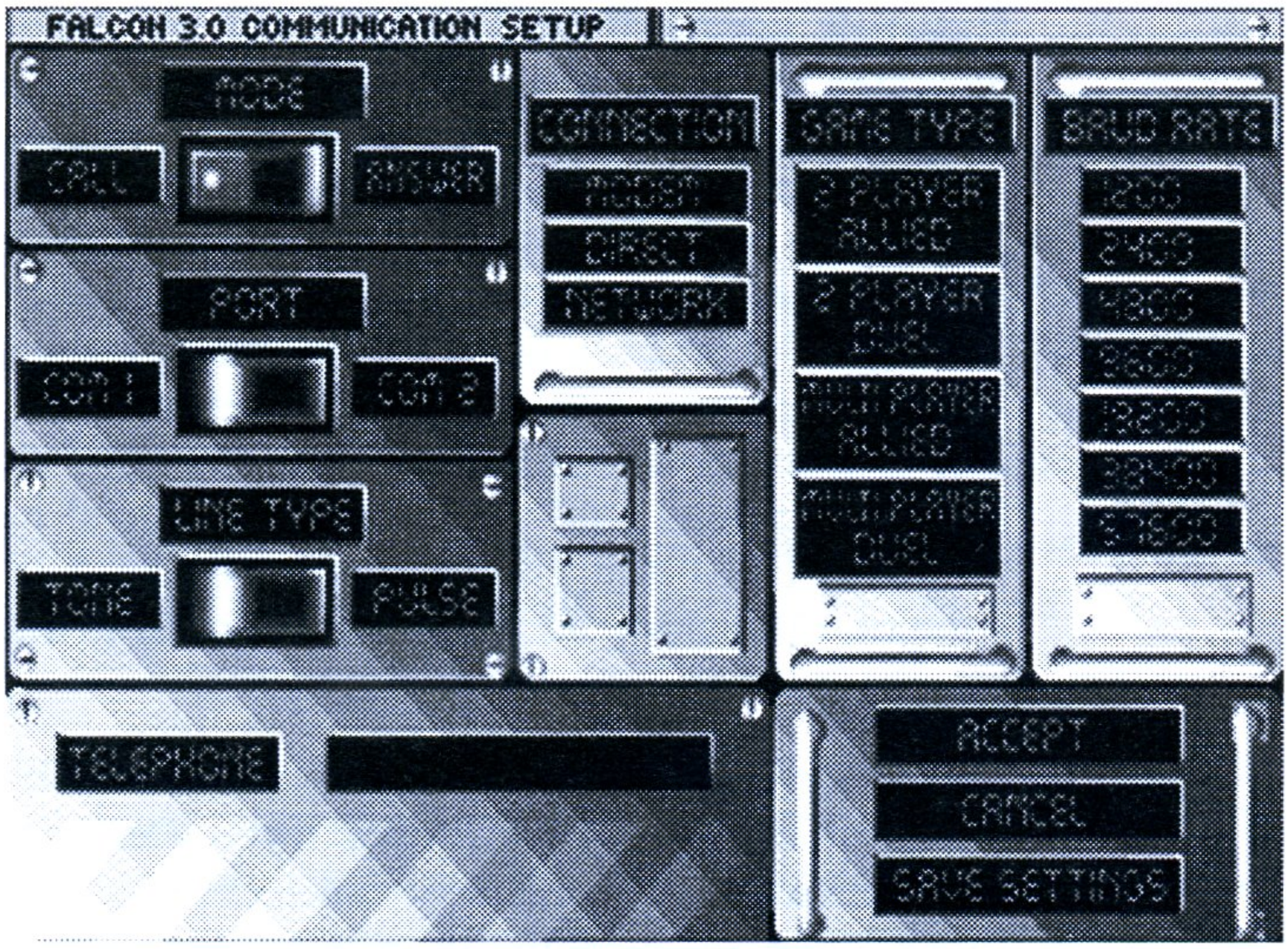
The player who was chosen as the "caller" should select CALL, while any other players should select ANSWER.

Port

Choose COM 1 or COM 2 depending on where your modem or null-modem serial cable is. If you are connecting through a network, this option is not used. *Falcon 3.0* does not support COM 3 or COM 4.

Line Type

This option is only used when you are using modem connections. Select TONE if you have a touch-tone phone and PULSE if you have a pulse-dialing (rotary) phone.



Telephone

The person who is the "caller" should type in the telephone number of the other player here (don't put any hyphens in the number). This option is used only for modem connection.

Connection

Choose the appropriate selection for your communications game, either MODEM, DIRECT or NETWORK.

Game Type

Select the appropriate game type from this menu. You have the choice of one of the four listed previously: 2 PLAYER ALLIED, 2 PLAYER DUEL, MULTI PLAYER ALLIED or MULTI PLAYER DUEL. All players must select the same game type.

Baud Rate

Select the baud rate applicable for your connection:

Modem connection: You need to choose the lowest common baud rate for the two modems (i.e. if one modem is 9600 baud and the other is 2400 baud, both players must select 2400 baud).

NOTE: You can play Falcon 3.0 *with two 1200 baud modems, but this is strongly discouraged. You will experience extreme speed degradation if you attempt to do this.*

Direct connection: We recommend using a speed of 19200 baud for direct connection.

Network connection: The baud rate in a network connection indicates the *amount* of data being transmitted rather than the *speed* of the data being sent across. We recommend using a baud rate of 19200. If the game runs too slowly, use a lower baud rate; conversely, if other aircraft are not moving smoothly enough, use a higher baud rate.

Accept

This will accept all entries you have made and start you going in Communications mode. If the other player(s) have not pressed the ACCEPT button, you will get a message telling you that the computer is waiting for the other player(s) to finish.

Cancel

This will cancel any changes you have made to this screen and bring you back to the War Room. If you want to re-enter Communications mode, you will need to select the COMMS monitor and repeat the pilot selection procedure.

Save Settings

If you plan to use the settings on the Communications Setup menu more than once, you may want to save the settings for later use. After selecting the SAVE SETTINGS button, you will initiate the connection process.

Connecting in Communications mode

When using a **modem** for play, the connection process will begin when both players hit the ACCEPT button. The caller will then receive a dialog box asking to "USE MODEM DEFAULTS" or not. If you need to input some special Hayes AT commands (or your telephone credit card number), you can input them after you type [N]. Otherwise, simply press [Y] and continue with your connection. Your modem will then begin to dial and establish a communications link to start your communications session.

When using **direct-connect** for play, the connection process will begin when both players hit the ACCEPT button. The two computers will then begin to transmit data through the serial ports and your communications session will be established.

When using a **network** for play, after each player hits the ACCEPT button, the answerers must wait until the caller chooses them from a list on his computer. (The caller must use the arrow keys and [Enter] to select an answerer's *log-on name* from the list. A player's log-on name is the name he uses when logging on the network.) If the answerer agrees to play, a star will appear in front

of his name on the caller's list. Once the caller has chosen the players he wants to play with, he should select the word EXIT at the top of the player list. This will begin the comms session.

During the connection process, the two computers will transmit data back and forth. This is indicated by a series of red dots above the words "RECEIVING SATELLITE DOWNLINK." As long as the dots continue to appear, the computers will be transmitting data. The entire procedure should take several minutes.

Before entering the simulation, each player using a joystick will be asked to calibrate it. When this is done, the game will begin.

Duel game

In the two player and multi-player duel modes, the objective is to shoot down all of your opponents. (This is similar to the single player Instant Action mode.) When there is only one player remaining, the game will end and all players will be brought to the high scores screen. After they press a key to exit the top ten screen, each player will be asked if they wish to play again. At this time, they will either begin another communications game or exit to the War Room. If there is only one player who wants to play a duel game, the communications session will be terminated.

Allied game

Allied games allow the players involved to participate in a campaign of the caller's choice. Once all players have been selected by the caller, they will be brought to the War Update screen, just as in a single player campaign. From here until the time each player enters their plane, the caller will make *all* the mission decisions. The answerers can see what is taking place, but they will have no control whatsoever about waypoints, flights or even the weapon load of their aircraft. The caller is the Squadron Commander, while the answerers take the part of other pilots in the squadron.

You will be unable to set an altitude or speed for waypoints in Communications mode. This is because all the other players control their own actions. Any computer-controlled planes will follow the leader of their flight.

On the Assign Pilots screen, all the players will be automatically assigned to aircraft with the caller leading the flight.

After the caller has selected the Takeoff button from the Load Armament screen, the mission will begin. All the answerers will start off *in the air,* so they need to wait for the caller to take off. Once the caller is in the air, the mission is truly underway.

Ending a mission

The caller is the only player who can end the mission. Other players can abort from the current mission, but this is highly discouraged. It will leave their plane flying as if the pilot has blacked out, so the aircraft will eventually crash. When the caller ends the mission, the mission will end as described on page 127 of the **Flight Manual.**

Since the menu bar is deactivated during Communications mode, the way to End Mission is Alt Q while the way to Abort Mission is Alt A. If a caller or answerer chooses to exit to DOS by pressing Alt X, it will act as if they aborted the mission.

Other Communications notes

The following items are specific to *Falcon 3.0's* Communications mode:

Accelerated mode

Accelerated mode is disabled in Communications mode.

ACMI

ACMI is disabled in Communications mode.

Pause key

Only the caller can pause the game while everyone is flying around. Answerers will be unable to pause the game.

Chat feature

If you want to send over a radio message to the other player(s) in your flight, you can do so by pressing the ` key. This will allow you to send over a message of approximately 60 characters in length. You can use the Backspace key to correct mistakes and the Enter key will send the message to all other pilots on your flight. However, the game will continue to play while you're typing your message, so be careful. Don't be sending over any long messages when you've got some MiGs on your six!

Menu bar

As mentioned previously, the menu bar is disabled in Communications mode. The caller can end a mission by pressing Alt Q. No answerers can end a mission. A caller or answerer can abort a mission (and return to the War Room) by pressing Alt A. Hitting Alt X (to exit to DOS) will act as if you aborted a mission.

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