Air Warrior® for Windows®

Operations Manual

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INTRODUCTION

Air Warrior is the ultimate challenge for lovers of air combat simulations. First and foremost, *Air Warrior* features the most informed, detailed, and advanced flight models available on a home computer. Each aircraft's behavior is based on extensive flight test data and, as in real life, each plane's performance and handling characteristics are unique and authentic. In the course of playing the game, you will learn the historic strengths and weaknesses of many legendary warbirds, and how to employ these distinctive traits to your advantage.

Of course, you need more than excellent flight modeling to make a great air combat simulator — you need other pilots. *Air Warrior* features the smoothest modem play available. However, its ultimate online challenge lies in large and extensive computer networks, where the finest simulator pilots from around the world fly in the same arena at the same time.

Online *Air Warrior* features open arena play, with up to 100 other live pilots, from across North America, England, Australia, and Japan, at one time, in several active theaters. If your tastes run toward turn-and-burn dogfighting, there is a half-time, relaxed realism area. If you want to experience scrupulously accurate flight modeling, you can choose a real-time, full realism area.

Online players may participate as individuals, or as part of a squadron made up of other online pilots. In addition to flying as fighter pilots, players may also serve as a bomber pilot, bombardier, or bomber gunner, or as a crew member on a ground-based tank or flak gun.

Air transports are available for delivering cargos of fuel and ammunition, and paratroops may be dropped to help capture enemy airfields. For the individualist, *Air Warrior* offers a dueling mode, which enables players to challenge other individuals or groups to airborne duels, which occur apart from normal arena play. In short, no air combat simulation offers you more possibilities than *Air Warrior*.

ABOUT THIS MANUAL

Air Warrior documentation is contained in two separate manuals: the *Operations Manual*, and the *Flight Instruction Manual*. This *Operations Manual* contains complete information on how to play the game, including control and operation of all program features, and is provided to the player along with the front end software, while the *Flight Instruction Manual* is available optionally from Kesmai Corp. (see page ix).

AIR WARRIOR FEATURES

Air Warrior is the most advanced, realistic air combat simulator available for the personal computer. Its features include:

Multiple Resolution: 1024 x 768, 800 x 600 and 640 x 480 resolutions are supported, in 256 colors.

High performance: *Air Warrior* delivers, through its use of 32 bit programming, astonishing frame rates. *Air Warrior* employs the full capabilities of your computer in ways few computer games can.

Real-time multipilot network play: You can play *Air Warrior* with up to 100 people from all over North America, Great Britain, Japan, and Australia at the same time.

Choice: Fly 21 different World War II era fighters and bombers from five nations.
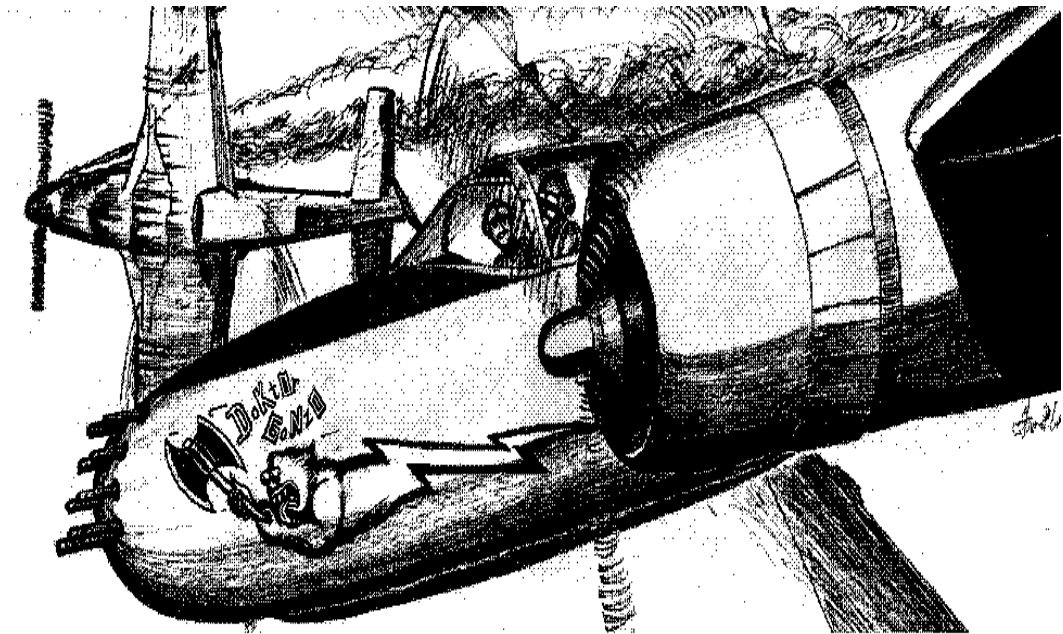
Player rendering of Air Warrior Action

Advanced, adjustable levels of realism: *Air Warrior's* dynamic flight model offers realism never before available on a personal computer, including accelerated stalls, G effects, red-outs, blackouts, and uncontrolled spins.

High resolution cockpit artwork: You'll find cockpit art with up to 16 separate cockpit views for every aircraft and armored vehicle.

The most comprehensive viewing system of any air combat simulator: *Air Warrior* does not send you hunting for your function keys just to have a look around your airplane. There are no frame rate devouring gimmick view schemes. In *Air Warrior*, you have access to 15 cockpit views right from your keypad or keyboard, or nine views directly from the *ThrustMaster FCS* Castle switch.

Multichannel, digital sound from authentic sound samples: *Air Warrior* employs sound samples from actual World War II aircraft and weapons.

Support for a wide variety of flight controls: *Air Warrior* fully supports the *ThrustMaster, CH, SunCom, Gravis, and Microsoft* suite of flight controls.

TERMS USED IN THIS MANUAL

Air Warrior emphasizes multiplayer air combat rather than the standard, you-against-the-computer play featured in most computer games. Thus many of the fundamental terms used in this manual may seem unfamiliar to you.

Online - In *Air Warrior*, online means connected, via your modem and telephone lines, to the *Air Warrior* host computer.

Log On - Your computer, via a modem, establishes a link with a remote computer. When you end this link, you've logged off.

Off-line - In *Air Warrior*, off-line play means it's just you and your computer — you are not linked to any other computer (also called stand-alone play.)

Host - Like a telephone call, every connection between computers begins with one party initiating the connection and the other party receiving it. The computer on the receiving end is the host.

With *Air Warrior* online play, however, the host concept goes a step further. A single, powerful *Air Warrior* host receives dozens of player connections and handles the multiplayer environment.

Front End (FE) - Many hardware and software elements go into multiplayer gaming on a network. The software on your computer that allows you to interact with the network gaming environment is called your front end, or FE.

Node - Nodes handle local access to a larger computer network. A node is a battery of modems, each connected to the network. When you log onto your local node, you are connected to one of these modems and, thus, to the network.

View of the Main Airfield in Air Warrior

OFF-LINE USAGE

Starting *Air Warrior* from the *Windows Program Manager*, *File Manager* or by any other *Windows* method will place *Air Warrior* in the off-line mode. In off-line (or stand-alone) mode, you will be able to use several important *Air Warrior* features, each graphically represented as an aircraft hangar

:

> **Setup:** Allows you to verify default settings, or enter your own settings, for aircraft flight controls, sound, and user preferences.

> **Solo:** Allows you to fly an aircraft of your choice in a solo environment, at the airfield of your choice.

> **Film:** Allows you to view films of actual in-flight *Air Warrior* activity.

You will not, however, be able to initiate online activity from the off-line mode.

ONLINE PLAY

To initiate online play, you must access *Air Warrior* through your online service provider. In the *Air Warrior* area on the service, click on appropriate icon (usually labeled *Fly*) to begin full online interaction. The front end software in your PC will integrate automatically with the online *Air Warrior* host, and you will be able to use most off-line *Air Warrior* features, plus exciting, multiplayer interactive play in any of Air Warrior's available arenas.

The first time you access *Air Warrior* online, you will be greeted with a dialogue box displaying important information, and then move through the opening sequence. For both online or off-line players, *Air Warrior* opens with two screens displaying artwork and credits, each appearing in succession for a few seconds.

The last opening screen dissolves to the Main Menu game screen. This is a ground-perspective view of *Air Warrior's* Main Airfield, with aircraft, two hangars, a control tower and offices. You may jump through the opening screens by hitting the <ENTER> or <Spacebar> key, or bypass them entirely with the <ESC> key.

Typical location screen — Ready Room with Tooltips shown

NAVIGATING THE AIR WARRIOR ENVIRONMENT

The front end software of *Air Warrior* operates in a *Windows*-based environment, so much of the "administrative" or non-game interaction between *Air Warrior* and the player takes place using standardized *Windows* dialogue boxes, displays and buttons.

The game itself is played in its own unique environment, which features high-quality graphic representations of *Air Warrior* locales, such as Headquarters, Officers Clubs, Ready Rooms, and so on. Many *Air Warrior* functions are presented to the player through an easy-to-use graphical interface incorporated into this theme-related artwork.

TOOLTIPS

For example, various functions are accessed by pointing at and clicking on a graphic element with a mouse. These areas of *Air Warrior* artwork, known as hotspots, take the player directly to another area of *Air Warrior*, e.g., left-clicking on an aircraft hangar labelled "SETUP" takes the player directly to the Setup Screen. When your cursor is over a hotspot, it changes from a pointer to an air-

plane. A Tooltip balloon appears each time the cursor remains over a hotspot for more than one second; the Tooltip gives a brief description of the functions provided (Tooltips can be disabled with the User Preference Setup). This is the simplest way to select functions in *Air Warrior*. Just point at the item you want, and click the left mouse button to select it. To see all the Tooltips on any screen, just hit the <ALT> key.

THE GUIDE

Informative text boxes, called The Guide, appear each time you enter a new *Air Warrior* environment, describing the locale and the actions you can perform there. The Guide display can be disabled in the User Preference Setup, or in the guide dialog itself.

```
                Solo  ◄──►   Main     ◄──►  Setup
                             Menu

                Film  ◄──►    Off-line
          ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─
                             Online
                               ▲
                               ▼
                           OnLine
                        Multi-Player
                        (Arena Select)
                               ▲
                               ▼
                        Officers  ◄──►  Officers  ┄┄  Other
                        Club #1         Club #2   ┊   Officers
                               ▲                  ┊   Clubs
   Simplified                  ▼
   Air Warrior             Head-
   Environment            quarters
                           Room
                               ▲
                               ▼
           Radio      ◄──►   Ready
           Room               Room
                               ▲
                               ▼
                           Airfield

                          (Plane or
                           vehicle)
```
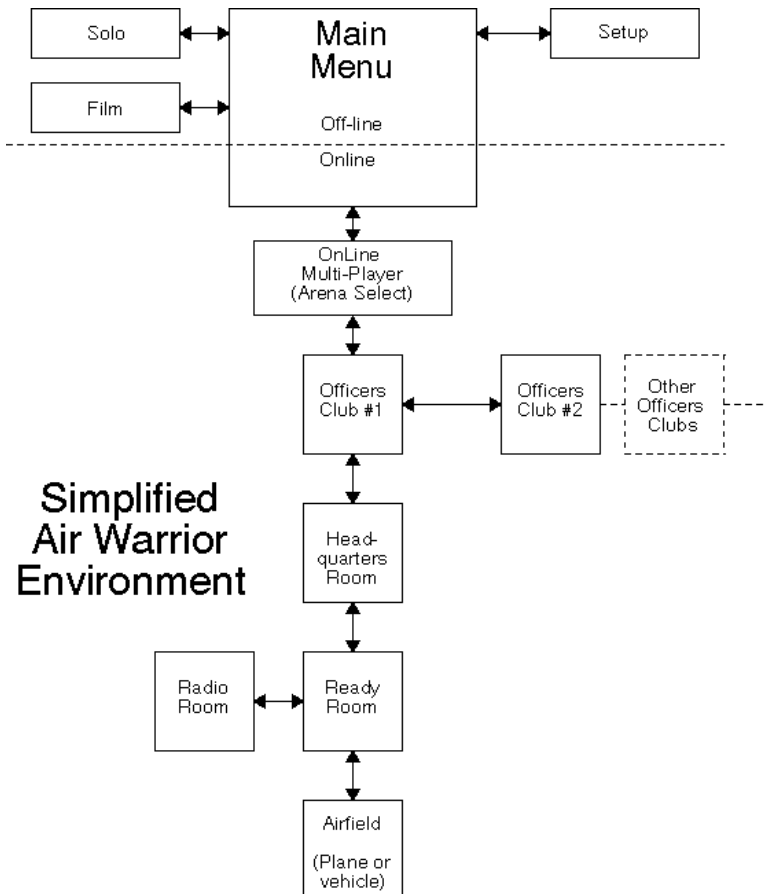
POP-UP MENUS

For general functions, all location screens offer a pop-up
menu that appears when the right mouse button is pressed.
Select the desired function from the pop-up box and click
the left mouse button to activate it. Online help is available
in all areas, and can be accessed either by selecting HELP
from a pop-up dialogue box with the mouse, or by pressing
the F1 key.

Display Airfield List...
Toggle Full Screen Mode
Setup...   ▶
Show Guides
Help
About Air Warrior
Exit Arena
Exit Air Warrior

*Pop-up menu for
Situation Map*

MINIMUM REQUIREMENTS

■ IBM compatible 486DX computer operating at 66 mHz or faster, with
local bus video (P5/75mHz recommended)

■ Eight megabytes of RAM (16 MB recommended)

■ Windows 3.1 or later

■ A hard disk drive with at least 30 megabytes free

■ 14.4K bps modem

■ A video card and monitor capable of 640 x 480 resolution and 256
colors with 512K of video memory on the card

■ A mouse and joystick (though a plane can be flown with just a mouse)

Recommended Optional Equipment:

■ *SoundBlaster* compatible Sound Card

■ Dedicated game port

■ Throttle and rudder controls

■ Multi-function joystick, such as *ThrustMaster FCS*, *CH Pro*, etc.

ABOUT *AIR WARRIOR* DOCUMENTATION

Air Warrior documentation is contained in two separate manuals: the *Operations Manual*, and the *Flight Instruction Manual*.

The *Operations Manual* contains complete information on how to setup and play the game, including control and operation of all program features. The *Flight Instruction Manual* contains advanced information on some of the finer points of flying combat missions in *Air Warrior*, along with extensive commentary and tips from veteran Air Warriors. The *Flight Instruction Manual* contains over 120 pages of flight-related information, with sections on:

■ Power and Fuel Considerations

■ Air Combat Maneuvers

■ Gunnery

■ Capturing Airfields

■ Bombing

■ Combat Tactics

■ Fighter Reference Information

■ Bomber and Vehicle Reference Information

■ Aircraft Performance Comparisons

■ Air Warrior Glossary of Terms

MANUAL CONVENTIONS

The following conventions are observed in this manual:

Keyboard and Keypad Commands:

Keyboard and keypad commands are executed as soon as the appropriate keys are pressed. When encountered in descriptive text, keyboard keys are shown by < >; for example: <F9> or <n>. Note that *Air Warrior* considers keyboard and keypad keys to be different; for example, the <+> key on the keyboard is not the same as the <+> key on the keypad.

Keystroke combinations are indicated by a plus sign, such as <CTRL+ALT+F10> (this is a text convention only; <u>do not</u> press the <+> key). In this case, all indicated keys must be held down simultaneously to execute the command. Keystroke combinations are enclosed with < >. All keyboard control keys are lower case, except where noted, e.g., <SHIFT + c>. In text areas where keyboard and keypad commands are defined, the < > marks are omitted for brevity. For example:

8   Start/stop engine

9   Turn gun camera on/off

Escape Key Commands

Escape key commands involve pressing the <ESC> key plus a secondary key; they are shown as <ESC + [key]>. All secondary keys are lower case.

Keystroke combinations are enclosed with < >. Keystroke combinations are indicated by a plus sign, such as <ESC + p> (this is a text convention only; <u>do not</u> press the <+> key). Indicated keys do not have to be held down simultaneously to execute the command. In some cases, a third key may be added; the third key should be pressed immediately after the second key, e.g., <ESC + jg>.

<u>The <ENTER> key must be pressed after completing each Escape key command to execute the command.</u>

In text areas where Escape key commands are defined, the < > marks are omitted for brevity. For example.:

ESC + a   Arm bombs

ESC + e   Exit the plane or vehicle

b   drop a bomb or bombs, if bombs are armed

Command Lines

Command Lines are typed into the Outgoing Message Area of the *Air Warrior* screen, followed by <ENTER> to execute the command. All Command Lines begin with a slash mark (/) or an apostrophe ('), and are indicated in this way in the manual text. See Appendix B for a complete listing of functional Command Lines.

Window Buttons and Menu Entries

During Setup procedures, you will be asked to make choices by clicking on various buttons contained in the various windows. In addition, many functions are chosen from pop-up menus. In the manual text, both of these items are indicated by capital (upper case) letters. For example: CLOSE.

Player Entered Variables

In some instances (particularly with Command Lines), the player must enter variable information, such as the Player ID number of another player. These variables are indicated by brackets symbols ([ ]). For example: /accept [ID#].

Shortcut Keys

While *Air Warrior* is fully responsive to standard mouse point-and-click operation, keystroke shortcuts are also supported. All *Air Warrior* button labels contain and underlined "key letter," such as "Delete". This indicates that the button function can be executed by pressing the

Find User

Player ID to Search For:

[   ]

[Find]

[Cancel]

[Help]

Highlight Button
(press <Enter>

Shortcut Key
(ALT+h)

<ALT> key plus the underlined letter, in this case, <ALT+d>. Some menus offer this feature also.

Highlighted Buttons

On on many *Air Warrior* screens and pop-up windows, one button is highlighted by a black border line on the outside and sometimes with a dotted box inside. In this case, the function of the highlighted button can be executed by pressing the <ENTER> key.

Standard Text Editing

Text entries in *Air Warrior* may be edited using standard text editing conventions, e.g., hold down the left mouse button and drag the mouse over text to highlight it. The text cursor can be placed anywhere in a text entry, and both the <backspace> and <Delete> buttons are active.

INSTALLING *AIR WARRIOR*

The installation of *Air Warrior* is fairly straightforward, but it does require a reasonable amount of time. This is not a five minute "load and run" process, so be sure to set aside an adequate time period where you can give your full attention to proper execution of the process. In the installation process, you will:

> 1. Load the *Air Warrior* program into your computer.
>
> 2. Verify or load the proper joystick driver.
>
> 3. Set up and configure your joystick driver
>
> 4. Load any software required by third party control devices (throttle, etc.)
>
> 5. Run any calibration procedures required by the third party software.

And, while not part of the installation procedure *per se*, you will also need to set up and calibrate your control devices using the *Air Warrior* Control Setup function described in Section 2 of this manual.

Air Warrior programs consist of front end (FE) software, which is loaded and run on the player's IBM-compatible PC; and the online host program, which supports and manages *Air Warrior* online play by interacting with each player's front end software. The following section explains how to install the front end software on your PC.

Before installing *Air Warrior*, be sure to establish that your PC meets the minimum requirements specified in the Introduction, and that enough free space is available on your hard drive to accommodate the program files. You may check available free space from *Windows File Manager*; click on the target drive, and the amount of free space available will be displayed at the bottom of the screen.

A minimum install will load only those program files absolutely needed for program operation. This does not include cockpit artwork and sound files, which are not critical to game operation. The full install, which requires the maximum amount of storage space, loads all files needed for full operation, including cockpit artwork and sound files. Custom installation, also available, allows you to select which optional files are to be installed.

Minimum and maximum storage requirements are:

> Minimum Install: 20 Megabytes
>
> Full Install: 80 Megabytes

INSTALLING *AIR WARRIOR* FROM A DOWNLOADED FILE

If you are running *Windows 3.1* (or *3.11*), you will need to install both *WinG* and *Win32s* to run *Air Warrior.* If you're running *Windows 95* you need only install *WinG.* These files can be downloaded from your online service's Kesmai page (installation instructions are included).

1. The *Air Warrior* front end program can be downloaded from the Kesmai page of your online service as the self-extracting executable file AWMINxxx.EXE, where xxx indicates the version number. Identify and download the file onto your computer's hard disk; it is approximately 8 MB in size.

2. Using *Windows File Manager*, create a new directory on your hard disk named INSTALL. Move the downloaded file into this directory; do not put any other files into the directory at this time.

3. In *Windows File Manager*, double click on the downloaded file to begin the self-extraction process, or use the *Run . . .* command from the *File Manager* menu bar *File* drop-down menu. Self-extraction will expand the file to about 16 MB.

4. When the self extraction process is complete, double left click on the file SETUP.EXE which now resides in the INSTALL directory (or execute this file by "RUNning" it from the FILE menu).

5. During the SETUP program, you may accept the default installation directory or specify a different directory for *Air Warrior* installation.

6. Choose either a Full or Custom install. If you choose Custom, you will need to check the options you want installed.

7. When the installation is complete, be sure to read Joystick Driver Installation below, and install a joystick driver as recommended.

8. Some external control devices (throttles, joysticks, rudder pedals) require installation of software provided by the device manufacturer. Install any such software, and refer to Section 2, Setup, and Appendix A, Control Setup Notes.

The installation program will create a program item and icon for *Air Warrior* in the program group of your choice. After installation is complete, you may start the "off-line" version of *Air Warrior* by double clicking on its icon. We recommend you go directly to the Setup Hangar to configure your controls, as described in Section 2 of this manual, and then choose the off-line SOLO function to get a feel for the *Air Warrior* flight environment.

If you are interested in immediately entering the "online" *Air Warrior* game and interacting with other players, you must first return to *Windows* and access the *Air Warrior* host through your online service provider (see below).

CONNECTING TO THE *AIR WARRIOR* HOST

Air Warrior can be launched online if the *Air Warrior* FE software has been installed correctly on your computer, and your online service provider offers the game. All you need to do is to go to the *Air Warrior* site on your service and click the appropriate icon or hotspot.

The first time you launch *Air Warrior* it may ask you if you wish to configure a viewer. Choose YES, select BROWSE, and find and select the program file LAUNCHER.EXE in your *Air Warrior* program's main directory. Click OK and *Air Warrior* will load on your computer.

Once you are connected to the host computer, the initial startup screens are displayed, you will be arrive at the Main Menu (or Main Airfield) screen.

QUICK START

On the Main Menu, move your mouse cursor around slowly; you will see Tooltips which indicate the hotspots you may left click to perform the described function. Hitting the <ALT> key will show you all the Tooltips on any screen.

If you want to fly immediately, you can do so with your mouse and keyboard. Otherwise, you should first configure your controls. This is done by clicking on the SETUP hangar and then clicking on the Mechanic's Clipboard. To check to see that your sound card is working with the program, click on the Loudspeaker on the upper right-hand side of the Setup Hangar. Here you can set the volume and test it. See Section 2 of this manual for detailed setup information.

After configuring your controls, you may either fly "Solo" or "Multiplayer". At the Main Airfield screen, the three planes at the top represent Multiplayer mode. The SOLO hangar represents solo mode. Note that if you are connected to the *Air Warrior* host computer via you online service provider, you will not be allowed to use Solo (off-line) mode. If you have launched the *Air Warrior* program from your PC, and are not connected to the *Air Warrior* host computer, then you can fly in Solo (off-line) mode only.

If you are online and choose Multiplayer mode, you will next be asked to choose an arena. This will take you to the Officers Club (OC) for that arena. If this is your first time online, you will be prompted to enter your Player Information: Custom Player ID (CPID) and handle (see Section 2 and Section 13 for details on entering Player Information). The OC is the arena's main conference room, and you can talk to other players.

To fly, you have to select an airfield. You can do this by clicking on the Spitfire outside the OC, or by left clicking on the HQ door in the OC, which takes you the your country's headquarters. There, left click on the map on the table in HQ. In either case, you'll arrive at the Situation Map, centered in your country. Select an airfield by double clicking on it.

This will only work with airfields your country owns. Avoid airfields in yellow, as they are damaged. Selecting an airfield takes you to its Ready Room. Here you can click on the aircraft ID silhouette on the wall to select a plane. Set your fuel load and, to fly the selected aircraft, click on the AIRFIELD door.

Once in the cockpit, press the <8> key to start your engines, <SHIFT +C> to throttle up, and off you go! To raise your landing gear, hit the semicolon <;> key. To engage war emergency power, hit the <7> key. To return to full military power, hit the <7> key again. To throttle back, hit the <v> key, and to apply wheel brakes hit your <Spacebar>. To fire your guns, use either the <f> key, or button 1 on your joystick.

JOYSTICK DRIVER INSTALLATION

Although aircraft and vehicles in *Air Warrior* may be operated with a mouse, a joystick is recommended. *Air Warrior* running under *Windows 3.X* requires the joystick driver IBMJOY; check the Kesmai page of your online service provider for availability information on this driver. Installation instructions are provided here. Windows 95 users will need the VJOYD driver, which is distributed with Windows 95.

<u>After completing the following steps, you should refer to Appendix B for additional important joystick installation information.</u> The procedure for installation and setup of IBMJOY is as follows:

1. Unzip IBMJOY.ZIP into a directory.

2. Double left click on your *Windows Control Panel* icon, and then double left click on the Drivers icon.

3. In the Drivers dialogue box, click the ADD button.

4. In the Add Driver dialogue, select UNLISTED OR UPDATED DRIVER, and click OK.

5. In the OEM Driver dialogue, enter the driver directory path and click OK.

6. In the list of OEM drivers dialogue, select DRIVER FOR JOYSTICK, and click OK.

7. In the Game Adapter Setup dialogue, select ONE OR TWO 2-DIMENSIONAL JOYSTICKS, and click OK.

8. Exit *Windows* and reboot

To install the VJOYD driver for *Windows 95*, please consult Appendix B, or your *Windows 95* manual.

INSTALLING FROM CD-ROM

Air Warrior FE software is also provided on a single CD-ROM disk. If you are running Windows 3.1 (or 3.11), you will need to install both *WinG* and *Win32s* to run *Air Warrior*. If you're running *Windows 95* you need only install *WinG*. These can be installed from the master Kesmai Install program. The software is loaded from *Windows*:

> 1. Start *Windows*.
>
> 2. Insert the CD-ROM in the appropriate drive.
>
> 3. From the FILE drop down menu, choose RUN . . .
>
> 4. Type in the drive designator for your CD-ROM drive, followed by "install". Example: e:\install
>
> 5. Click OK.

The *Air Warrior* installation process will begin. You will be prompted for entries whenever installation decisions are required.

When the installation is complete, be sure to read Joystick Driver Installation above, and install a joystick driver as recommended. Some external control devices (throttles, joysticks, rudder pedals) require installation of software pro-

vided by the device manufacturer. If you are using such a device, refer to Section 2, Setup, and Appendix A, Control Setup Notes.

You may start the "off-line" version of *Air Warrior* at the end of the installation program. We recommend you go directly to the Setup Hangar to configure your controls, as described in Section 2 of this manual.

If you are interested in immediately entering the "online" *Air Warrior* game and interacting with other players, you must first return to Windows and access the *Air Warrior* host through your online service provider (see Connecting to the *Air Warrior* Host, above).

If you do not wish to run *Air Warrior* at this time, you will be given the opportunity to return to *Windows*. If you return to *Windows*, you will be able to start the offline version of *Air Warrior* by double clicking on the *Air Warrior* icon.

INSTALLATION PROBLEMS

Should you encounter problems during either installation process which you are unable to resolve on your own, you may request assistance from Technical Support by e-mail at moggy@kesmai.com.

PRE-FLIGHT SETUP

Prior to flying any aircraft in *Air Warrior*, you must first set up and calibrate the controls you will be using to fly your aircraft. In addition, you may specify the level of difficulty for your solo flights, and tailor certain aspects of *Air Warrior* to your personal preferences.

In this section, you'll receive instruction on the following setup procedures:

Aircraft Controls:	Mouse, joystick, rudder pedals, throttle
Cockpit Display:	Detail, airspeed indicator, tracers, gunsight, artificial horizon, tracking
Realism/Difficulty:	Novice, veteran or ace (applies to solo flights only)
Sound:	Sound effects on/off and volume
User Preferences:	File locations, view resolution, Tooltips and Guide enable
User Information:	Player ID and handle

All of these settings may be made while online with *Air Warrior*, but you will probably find it more economical to complete your pre-flight setup while off-line. These instructions are written for off-line use. Note: User Information may be entered or changed only when online, but you may prepare the required information off-line to save time.

STARTING *AIR WARRIOR* FOR OFF-LINE SETUP

Before beginning off-line setup, you must start *Air Warrior* from *Windows* by double clicking on the *Air Warrior* icon. *Air Warrior* will display two opening screens, each appearing for a few seconds. You may bypass the opening with the <ESC> key.

After the last opening screen is displayed, the screen will dissolve to the opening "Main Screen" of the game. This is a ground-perspective view of an airfield, picturing aircraft, two hangars, a control tower and various offices. Like all of *Air Warrior's* locale screens, the Main Airfield features Tooltips, special areas that will initiate a new action when clicked on with the left mouse button. You may view

all of the available Tooltips on any screen by pressing the <ALT> button. A Guide text box will also appear with information on the screen you have just entered. You can disable Tooltips, or change the amount of time required to reveal them, and disable The Guide, in the User Preferences settings (see below).

The Main Airfield

If, for some reason, you need to exit the program without beginning the setup procedure, you may left click on the jeep in the lower left corner of the Main Screen. Alternatively, click your right mouse button; a pop-up menu will appear, from which you can choose EXIT AIR WARRIOR.

Right Click Pop-Up Menu

To begin setup, place your mouse pointer over the Setup Hangar. After one second, a Tooltip balloon will appear explaining the hangar's function. Tooltips

Setup Hangar Screen

are provided for all important functions in *Air Warrior*, enabling you to execute nearly all non-flight game actions with your mouse. Note that your mouse cursor will change from an arrow to an airplane shape when positioned over a Tooltip area.

With your mouse cursor over the Setup Hanger, click the left mouse button and go directly to the next screen, which is a view of the interior of the Setup Hangar, complete with flight mechanic to help you set up your aircraft. If you'd like to see all the Tooltips available on this screen, press the <ALT> key.

Note that the flight mechanic is holding a clipboard, and that the Loudspeaker in the upper right corner is labelled SOUND SETUP. Additionally, file cabinets are provided for setting User Preferences, and you may exit by clicking on the door at the rear of the hangar. As on all other screens, additional actions are available by right clicking on any area of the screen to reveal a pop-up menu.

Let's set up the aircraft controls first. It's important to remember that the settings you choose here will be applied to any and all aircraft you fly, although you can
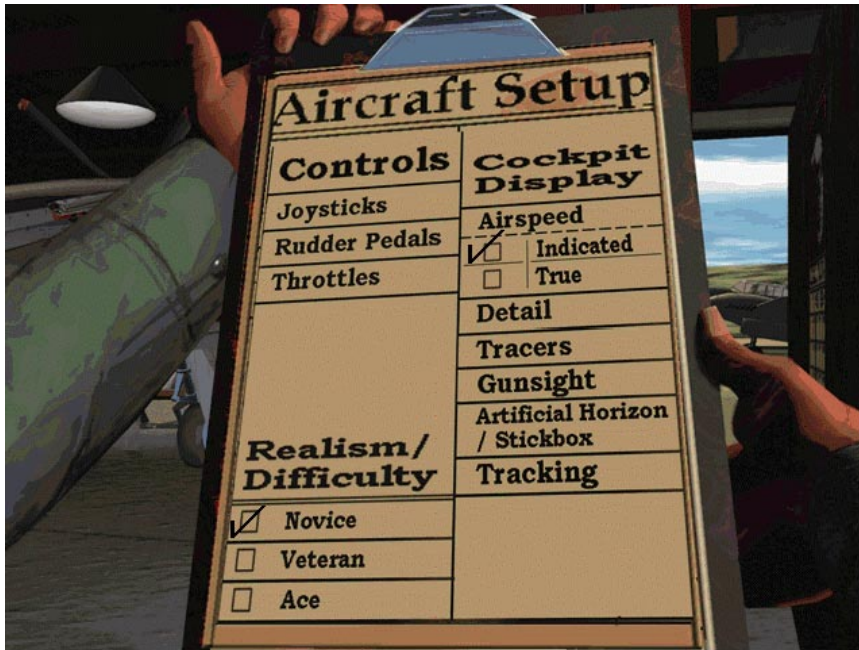
Clipboard Selection Screen

come back and revise these settings at any time.

You may access control setup in one of two ways; in either case, you will arrive at the same setup windows. You can left click on the mechanic's clipboard, or select CONTROLS . . . from the right mouse button pop-up menu, as shown on page 2.2. For now, we'll use the clipboard method.

CONTROLS

Place the mouse cursor over the CONTROLS area of the clipboard and left click once to display the Aircraft Controls Window, which allows you to choose and calibrate your joystick, throttle and rudder equipment, if you have such devices. If not, you can specify your mouse as your "stick," and your keyboard as the throttle and rudder control device.

As on all screens, you can right click on any screen area and select the HELP command from the pop-up menu for more information, at any time.
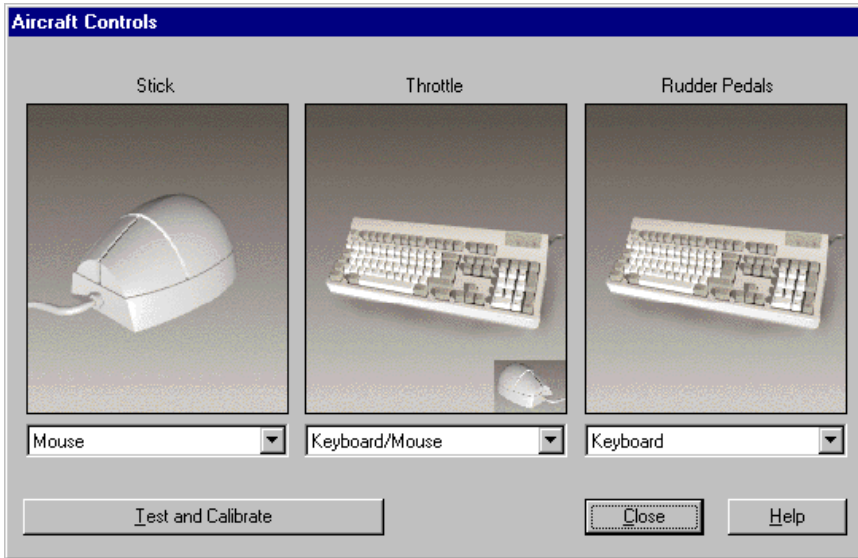
Aircraft Controls Window

IMPORTANT: you must specify all three pieces of equipment before proceeding to calibration; otherwise, improper calibration may result. Be sure to review your joystick, rudder and throttle manuals before proceeding with Air Warrior *setup; some control devices require you to load software and complete preliminary setup procedures recommended by the manufacturer. See Appendix A, Control Setup Notes, for a list of supported equipment, and Setup notes for popular units.*

Joystick Selection

Left click on the choice box below the joystick window; a drop-down list of supported joysticks will be displayed (a standard generic joystick is the default). If your joystick is listed, select it by clicking on it once. If your joystick is not listed, try GENERIC 2-BUTTON JOYSTICK. If this doesn't work, or you do not have a joystick, select MOUSE.

Throttle Selection

Left click on the choice box below the throttle window; a drop-down list of supported throttles will be displayed (KEYBOARD/MOUSE is the default). If your throttle unit is listed, select it by clicking on it once. If your throttle device is not listed, try the GENERIC THROTTLE CONTROL setting. If this doesn't work, leave the default setting in place; you will not be able to use your throttle device, and will have to make throttle adjustments using the keyboard controls.

Rudder Pedal Selection

Click on the choice box below the rudder pedal window; a drop-down list of supported rudder pedal units will be displayed (KEYBOARD is the default). If your rudder pedal unit is listed, select it by clicking on it once. If your rudder pedal device is not listed, try the GENERIC RUDDER CONTROL setting. If this doesn't work, select KEYBOARD. You will not be able to use your rudder device with *Air Warrior*, and will have to control the rudder with the keyboard controls.
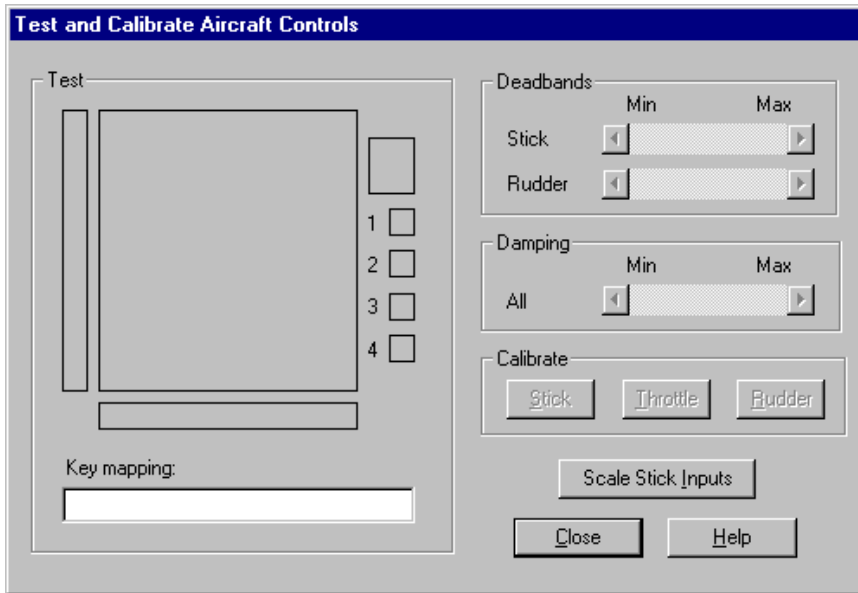
Test and Calibrate Aircraft Controls Window

Control Calibration

If you are operating with a mouse and keyboard, no further control setup is required; click on the CLOSE button to return to the Clipboard Selection Screen. If you've selected other flight control equipment, left click on the TEST AND CALIBRATE button at the bottom of the Aircraft Controls Setup Window. The Test and Calibrate Aircraft Controls Window will appear.

Note: if the software driver for your joystick is not present, you will receive a message to this effect. Exit the game and load the software before proceeding.

Calibrate Stick

Click on the CALIBRATE STICK button. This begins an automatic calibration sequence that prompts you through the calibration process. This choice is disabled

if MOUSE is specified as the joystick selection. Depending on the type of joystick selected, you may be asked to press certain buttons on your joystick as part of the calibration process. When complete, you should see a green cross in the middle of the black test screen.

Calibrate Throttle

Click on the CALIBRATE THROTTLE button. This will begin an automatic calibration sequence that will prompt you through the calibration process. This choice is disabled if the keyboard is specified as the throttle control, or if separate calibration software is provided by the maker of the throttle. *Thrustmaster WCS* units must be calibrated using *Thrustmaster* software shipped with the device.

Calibrate Rudder Pedals

Click on the CALIBRATE RUDDER PEDALS button. This will begin an automatic calibration sequence that will prompt you through the calibration process. This choice is disabled if the keyboard is specified as the rudder control. When complete, you should see a green line in the middle of the black test screen.

Deadbands

The Deadband scale governs how far you have to move a control device (joystick, rudder) before its movements begin to have their intended effect. There are separate Deadband sliders for joystick and rudder pedals. Deadband compensation allows you to make adjustments for the particular response characteristics of your control equipment, and enables *Air Warrior* to work smoothly with several different brands of controls.

Moving the deadband slider to the left reduces the deadband to a minimum of zero, and moving to the right increases it to a maximum value of 20%. Increasing Deadband is useful if you have problems with controls drifting.

If the stick's green cross or the rudder's green line moves when you're applying no control input to your stick or rudder, move the deadband slider for the appropriate device to the right. Increase deadband until the green cross or line is still.

If you have a stick with a hat switch, locate the small black box with the green square in the center, to the upper right of the joystick test box in the Test and Calibrate Controls Window. Move the hat around. The green square should turn into a line, pointed in the direction you've moved the hat. Also, check the green line for the rudder when you move the hat. If it moves, then increase rudder deadband still further.

Damping

The Damping Slider helps smooth out jerky or erratic control behavior of external control devices. These devices may provide less-than-ideal control inputs to the computer due to static, signal drop-out, etc. Begin with the default setting, but if you experience jittery controls, increase damping as required. This setting affects all control devices equally.
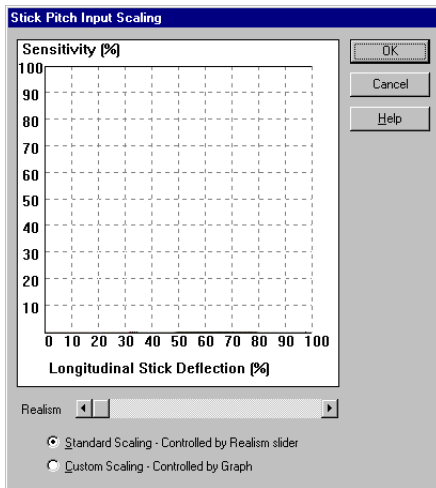
Stick Pitch Input Scaling Window

Scale Stick Inputs

Click on the SCALE STICK INPUTS button. This displays the Stick Pitch Input Scaling Window. Here, you can make adjustments to the way that *Air Warrior* handles the information it receives from your joystick.

You can change sensitivity on the pitch axis of your joystick. Roll axis is lateral movement of the stick; the pitch axis is forward/backward stick movement. Players want roll response to be as crisp as possible, so there is no sensitivity option on this stick axis. Reducing pitch sensitivity, however, helps many pilots control the G forces created during high speed maneuvers. If you don't intend to fly under full realism, you'll probably want to use the default sensitivity settings.

Stick sensitivity can be governed by either of two methods, the results of which are displayed graphically.

Standard Setting - Controlled by Realism slider

The Realism Slider determines how your joystick will respond in *Air Warrior's* real-time, full realism theaters. With the slider at the extreme right, the best control characteristics will be obtained (especially for blackouts and spins). At the extreme left, response is less suited for full realism. If you don't intend to fly in real-time theaters, you may want to Custom Scale your stick sensitivity.

Custom Scaling

This selection allows you to create a personal stick sensitivity curve by manipulating the displayed graph. The graph displays the sensitivity curve for the stick pitch input. The horizontal axis represents stick movement from center (0) to full forward or aft (100). The vertical axis represents control sensitivity, from no input (0) to input equals deflection (100).

To customize stick sensitivity, click on the upper line corresponding to the portion of the stick's range you want to change. The line is divided into ten segments, each representing 10% of the stick's total range of movement. Thus, the portion of the line in the bottom left corner represents the first 10% (from center) of your joystick's movement. By holding down the left mouse button and dragging the line down, you reduce the stick's sensitivity over that portion of the stick's range of travel.

If you don't select a joystick or *ThrustMaster* flight control stick, your mouse will serve as your flight controller. The mouse works best, however, if you reduce the sensitivity setting to 50% or less (33% is default).

To change sensitivity using your keyboard arrow keys, use the left/right arrows to select range segments, and use your up/down arrow keys to move them.

Click the CANCEL button if you want to leave this window without recording any changes, and return to the Test and Calibrate Aircraft Controls Window. Click the CLOSE button to record your changes and return to the previous window.

Key Mapping

This box (see page 2.6) is primarily a diagnostic tool, and displays keyboard key assignments for functions that are "key mapped" from control devices that work with *Air Warrior*. For example, when you press Button 1 on the *Thrustmaster WCS MkII* (start engine) the keymapped key for that function (8) will be displayed. You will find additional information on *Thrustmaster* and *CH* button assignments in Appendix A. A complete listing of keyboard key functions is contained in Section 3. The Key Mapping Window allows you to verify that a particular control is functioning properly.

When you have completed test and calibration, click on the CLOSE button to return to the Aircraft Controls Window. From there, click CLOSE to return to the Aircraft Setup (Clipboard) Screen.

REALISM/DIFFICULTY

At the bottom left of the clipboard you may choose the level of Realism/Difficulty to be applied to your off-line *Air Warrior* solo flights (online realism/difficulty settings are made automatically at the time of play). Place your mouse pointer over the selected setting and click with the left mouse button to activate it. Only one setting may be chosen, but the setting may be changed at any time in the future. Selections are:

Novice:	This is a very forgiving setting, with realism/difficulty factors set to a minimum.
Veteran:	A moderate amount of realism/difficulty is introduced at this setting (including blackouts and red-outs).
Ace:	Full application of *Air Warrior* realism/difficulty factors.

Air Warrior is a sophisticated program which takes into account many realistic aspects of actual flight. According to the setting chosen above, more or less of these aspects are applied to the player's flight. These factors include:

Buffeting

In actual flight, control surfaces work against the atmosphere, creating turbulence. When buffeting realism is applied, your screen display will shake due to maneuver-induced turbulence, indicating your angle of attack is too high for your airspeed.

Stalls

This flight aspect enables accelerated stalls. Unlike low speed stalls, where air-speed is too low for flight-sustaining airflow over the wings, an accelerated stall happens if the wing's angle of attack is severe enough to disrupt airflow.
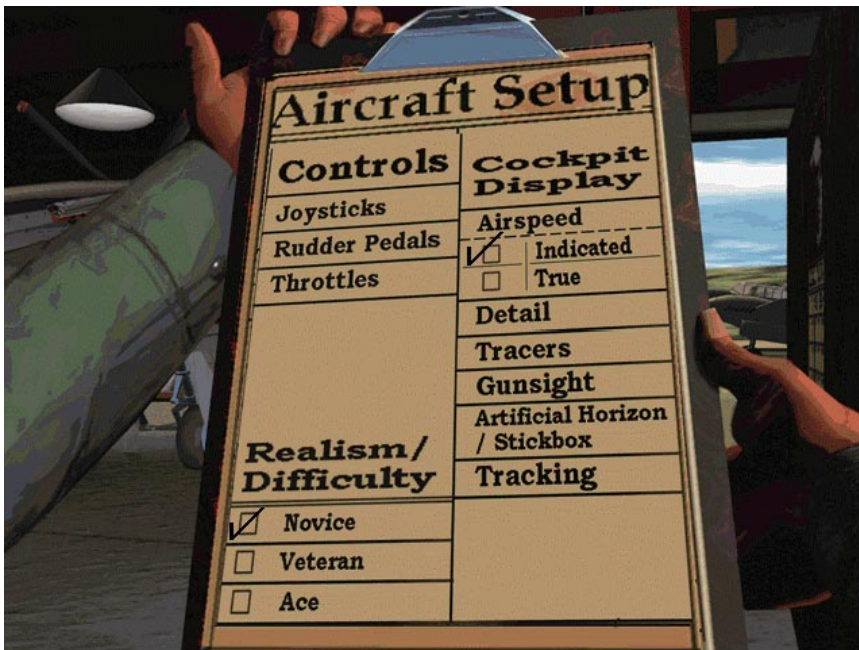
Clipboard Selection Screen

Spins

In a low speed stall, if the plane is maneuvering, one wing may stall before the other and the aircraft will spin. Application of this factor enables spins during low speed stalls.

Lethality

When selected, this feature gives your plane a realistic lethality; your gunfire will be realistically potent, but you will have a smaller, realistic ammo load (the actual ammo load the aircraft carried). When this feature is not selected, overall lethality is reduced and ammunition loads are tripled from what they'd be on the actual aircraft. Gunnery and lethality are explained in greater detail later in this manual.

G Effects

The human body is accustomed to one G, the normal force of the earth's gravity. Dramatic maneuvers fight inertia and create G forces that can be many times the force of gravity. If you pull more than five positive G's, you draw blood away from your brain and this can lead to a blackout. Negative G's do the opposite, forcing blood into your head; hence, the term "red-out" if the negative G force is severe. Selecting this option enables a realistic accumulation of these effects.

While G effects and buffeting work the same on all planes, accelerated stalls, spins, and lethality are individualized, based on the actual characteristics of a given aircraft. Some aircraft carry more lethal armament than others, and each type of fighter behaves differently as it is pushed to its limits.

COCKPIT DISPLAY

The right-hand side of the clipboard lists the various choices available for configuring cockpit display devices and tracer enablement.

Airspeed Indicator

To set the airspeed indicator type, place the mouse pointer over the INDICATED or TRUE listing, and click the left mouse button to select the desired choice. True airspeed displays the aircraft's speed in knots with respect to the ground. While this may be helpful for calculating time and distance on long flights, it is not always useful in combat maneuvering, where the apparent speed of the aircraft is much more critical.

Indicated airspeed measures the speed of air moving past the aircraft, giving you a much more accurate picture of potential flight performance. Air becomes thinner with increased altitude, and the maneuvers you could perform easily at 200 knots at 1000 feet might become impossible at 10,000 feet.

Indicated airspeed adjusts for altitude and reports speed based on the airflow over the wings. Most pilots prefer to use indicated airspeed and this is the default setting. Further information on the airspeed indicator is contained in the Section 4: Aircraft Instrumentation.

The remainder of the settings on the cockpit are set by placing the mouse pointer over the rectangular area of the clipboard from Detail to Tracking, and clicking the left mouse button. The Cockpit Display Window appears, and contains the following areas:
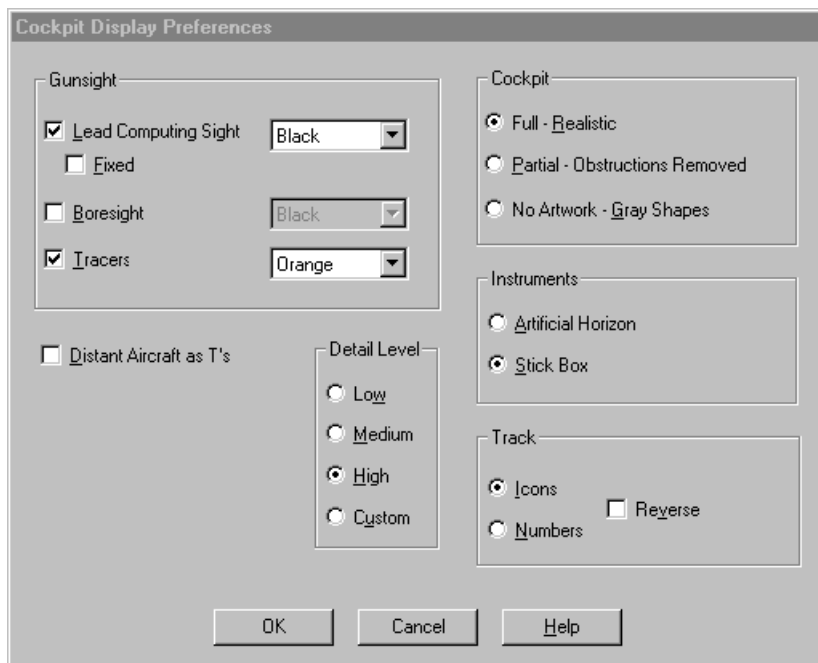
Cockpit Display Window

Detail Level

These selections enables you to select a low, medium, high or custom amount of detail in the graphic renderings of the *Air Warrior* environ- ment. The amount of detail available is directly related to the processing speed of your computer: the greater the processing speed, the more detail that can be supported. Begin with the default MEDIUM setting; if you experience erratic screen displays, switch to LOW detail. If MEDIUM works well, switch to HIGH detail and see how your computer performs there. The CUSTOM setting allows you to create your own customized selection of detail display from a menu of all available parameters.

Cockpit

This option allows you to select full, realistic cockpit views; partial cockpit views, with obstructions removed; or no cockpit art (gray shapes only). The default is FULL.

Gunsight

Lead Computing

Selecting the Lead Computing option enables your Lead Computing Sight (LCS). The LCS features a pipper, or floating diamond, which indicates where your bullets will go at any given time (see the Gunnery section for more information). The color you select for your LCS, whether you use the sight or not, will also be the color of your CCIP dive bombing sight (see the Dive Bombing section of the *Air Warrior Flight Instruction Manual* for more information). The LCS is the default selection, with a color of black. The FIXED setting will display the LCS pipper locked into a single position, with no lead computing capability, providing, in effect, just another type of boresight.

Boresight

The Boresight is a fixed centerpoint in your gunsight, indicating where your tracer stream would go if you were pulling no G's and performing no maneuvers. Pilots using the Boresight learn to direct fire "by the seat of

their pants," using the Boresight as a point of reference. You may also select a color for your Boresight. See the Gunnery section of the *Air Warrior Flight Instruction Manual* for more information.

Tracers

This feature provides visible tracers when you fire your guns, an extremely useful aid in achieving accurate gunnery. You may also select the color of your tracers, which can be helpful in distinguishing your fire in a multi-plane situation.

Tracer rounds are used intermittently in ammo belts; regular rounds are fired between the tracer rounds, resulting in a higher rate of fire than indicated by the tracer rounds themselves. Tracers are enabled by default, with a color of orange.

Artificial Horizon/Stickbox

Use these options to select an artificial horizon indicator, or a stick box indicator. An artificial horizon shows your orientation in relation to the ground. If this option is chosen, the artificial horizon will replace the stick box in your instrument display. The stick box indicates how much stick control is being applied at any given moment. This is the default selection, and especially useful for less experienced pilots; it is absolutely essential if you are flying with a mouse. See the Section 4 of this manual for drawings of the two instruments.

Tracking

These options govern how your tracking icons are rendered on your radar screen and tactical display. When an aircraft is within 5000 yards of you, an icon representing it will appear on the radar screen to show its relative position, and a matching icon will appear on the tactical display at one side of your radar screen with a readout of the plane's distance from you.

You may choose whether aircraft are rendered as icons (graphic symbols) or as numbers, or in normal or reverse video. Default selections are icons in normal video.

Distant Aircraft as T's

Air Warrior normally renders distant airplanes as dots (default setting). Some pilots find that a shaped icon is easier to discern, and so enable this option, which will cause distant aircraft to be rendered as T-shaped icons.

RETURNING TO THE MECHANIC'S CLIPBOARD

When you are finished with the Cockpit Display Preferences Window, left click on the OK button to save your changes and return to the Mechanic's Clipboard. If you wish to discard any changes, left click on CANCEL to return to the Mechanic's Clipboard.

RETURNING TO SETUP HANGAR

To return to the Setup Hangar, left click on any area of the screen to the right or to the left of the clipboard.

SOUND SETUP

Click on the Loudspeaker in the upper right-hand corner of the Setup Hangar Screen to display the Sound Setup Window.

In the Sound Setup Window, click on the appropriate setting to turn on or turn off all of *Air Warrior's* sound effects (gunfire, engines, explosions, etc.). You may also use the volume level slider to set a desired volume.
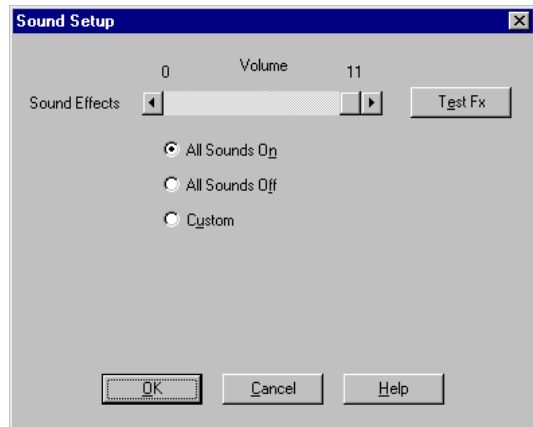
*Sound Setup Window*

Test the volume by clicking on the TEST FX button. This will provide a few seconds of engine sound at the indicated volume level. Adjust the volume level slider again if necessary.

Note that if you have a stereo sound board, appropriate sound effects will be rendered in stereo for spatial effect. Mono sound boards will play back all sound effects, but without the spatial effect.

When all sound setup is complete, left click on the OK button to return to the Setup Hangar. If you wish to discard your changes, left click on CANCEL to return to the Setup Hangar. The Sound Setup Window can also be accessed from the right mouse button pop-up menu, by selecting SETUP from the initial menu, and SOUND from the secondary menu.
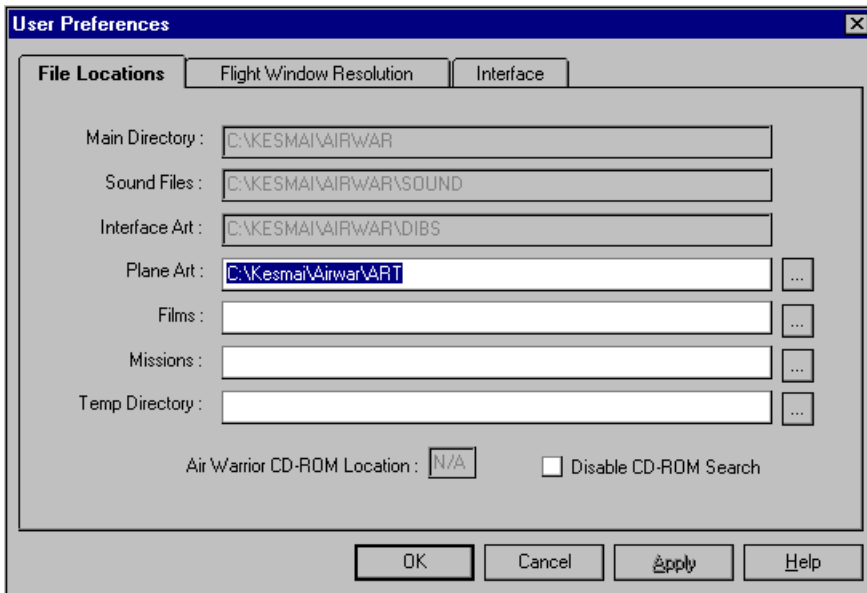
User Preferences/File Location Window

USER PREFERENCES

Click on the File Cabinets in the lower left-hand corner of the Setup Hangar Screen to display the User Preferences Window. Alternatively, you can right click on any portion of the screen to access the pop-up window displayed on page 2.2. Select SETUP from the pop-up menu, and then USER PREFERENCES from the sub-menu.

File Locations

When *Air Warrior* is installed, it automatically creates a directory structure for executing *Air Warrior* from both the PC's hard drive and CD-ROM drive (if a CD-ROM was used in installation). This window displays the directory locations for various *Air Warrior* data files, such as gun camera films and cockpit art files.

Fixed locations are assigned for all of these at installation, and there is very little likelihood that you will need to change either of the user-settable directories (AIRWAR and TEMP). Directories will be shown as existing on your hard disk (e.g., "C:\") or on your CD-ROM drive (e.g.,"E:\"). If you loaded the entire game onto your hard disk at installation, no CD-ROM directories will be shown.

These directory names instruct *Air Warrior* where to access and store required files; if the listed directories are not there, the program will not run properly. Note that if you change the location (directory path) of either of these directories outside of *Air Warrior* (e.g., with *Windows File Manager*), you MUST reflect that change on this window.

It is possible that you may already have another program that utilizes a TEMP directory on your hard disk; in this case, use *Windows File Manager* to create a new directory for *Air Warrior*, such as C:\AWTEMP, and enter the new directory name in the Temp Directory field.

You may also rename/relocate the *Air Warrior* directory, if necessary. You may wish to do so to conform with the way you have your directories laid out in your computer. For example, you may want to place all of your game software in a single directory named GAMES. In this case, use the *Windows File Manager* to create a new directory, such as C:\GAMES; move the AIRWAR directory to reside there as C:\GAMES\AIRWAR, and enter this new directory path in the Air Warrior Directory field. Refer to your *Windows* documentation if you are not familiar with this process.

During installation you had the option of not loading some of the *Air Warrior* directories onto your hard disk; these directories would then be accessed as needed from the CD-ROM during play. In this case, the location of your CD-ROM drive is specified in the CD-ROM Drive field.

Air Warrior will use this location to access the necessary files from the CD-ROM in the drive whenever you play. If you loaded the entire game on your hard drive, the CD-ROM drive field will be disabled. If, in the future, you change your equipment configuration so that your CD-ROM drive has a new letter designation, you must enter the change in this field.

In some instances, you might choose to load only certain parts of *Air Warrior* from the CD-ROM and run the game entirely from your hard drive with fewer features. For example, hard disk storage restraints may dictate that you not load the plane artwork; the game will run fine, but you will see only generic cockpit artwork and gray shapes for the airplane exterior.

As described above, *Air Warrior* will search for a CD-ROM drive whenever it finds portions of the entire game are not present. However, if you want to run the game "as is" from your hard disk, with no CD-ROM support, left click on the DISABLE CD-ROM SEARCH option. This will instruct *Air Warrior* to forget about looking for a CD-ROM. Be sure to re-enable this option if you want to go back to CD-ROM support.
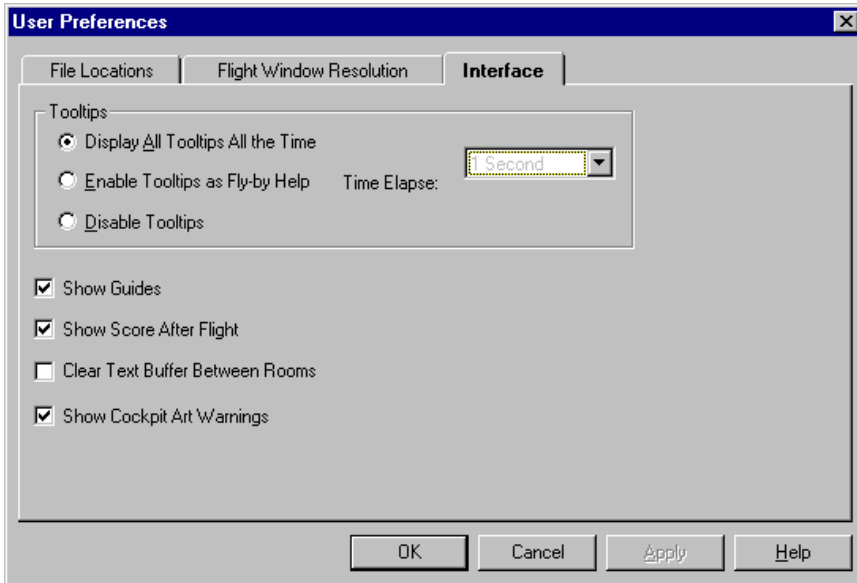
User Preferences/Interface Window

Interface

At this window, you can enable or disable the display of several helpful text prompts built into *Air Warrior*, as well as set the "clear" status for the Text Buffer. The settings chosen in this window apply to all screens in *Air Warrior*. Most new users leave these help features enabled until they master the game.

Tooltips

Described in the introduction to this manual, Tooltips are descriptive text balloons which are viewed by placing the mouse cursor over an active object in the screen display. The default setting is DISPLAY ALL TOOLTIPS ALL THE TIME. If you choose ENABLE TOOLTIPS AS FLYBY HELP, Tooltips will be visible only when the mouse cursor is located over an active object; you may use the TIME ELAPSE field to

Situation Map with Tooltips displayed

vary the period between the time when a mouse pointer is placed over an object and when the Tooltip first appears. The Time Elapse field is disabled when Tooltips are disabled.

After you've become familiar with playing *Air Warrior*, you may wish to disable the display of Tooltips entirely. Note: All Tooltips in any screen may be viewed simultaneously by pressing the <ALT> key on your keyboard.

The Guide

The Guide is a helpful text display that appears when you switch to a new screen. When you change to a new screen, The Guide automatically pops up with a short description of
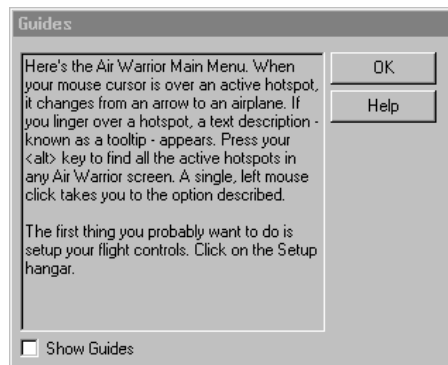
Typical Guide display

the new environment, and suggestions on what actions you might want to execute there.

You can disable The Guide by left clicking on the SHOW GUIDES option, which will remove the check mark in that box. To re-enable The Guide, left click on the SHOW GUIDES option again, which will restore the check mark. Note: The Guide can be disabled in a similar manner with the SHOW GUIDES option that appears on each individual Guide display; however, The Guide can be re-enabled only through the User Preferences/Interface Window.

Show Scores After Flight

Whenever you complete a flight online in any fashion (land, crash, bail out, etc.), the Player Score Window will automatically appear when you return to the Ready Room or Headquarters. Left click on this option to remove the check mark and disable display of the Player Score Window.

Clear Text Buffer Between Rooms

When this option is selected, your Text Buffer will be cleared each time you move to a new room. In the default setting, the Text Buffer retains all text until you quit the game.
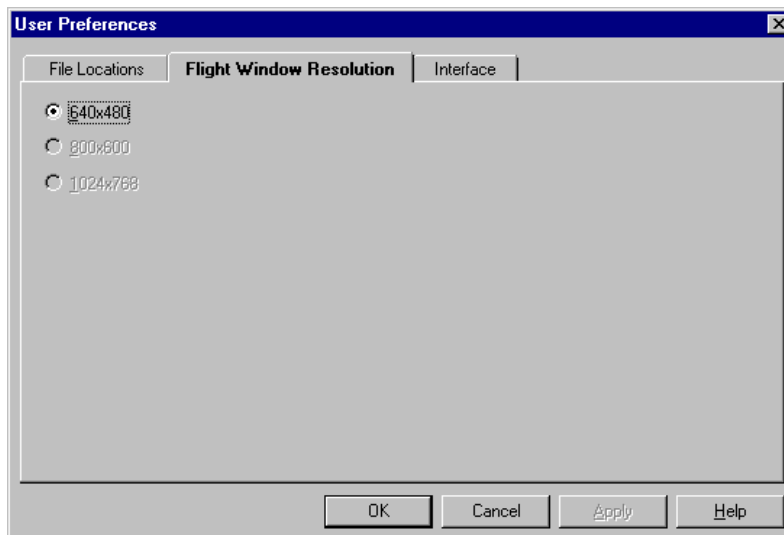
User Preferences/Flight Window Resolution

Flight Window Resolution

The Flight Resolution Window enables you to select one of three screen sizes. *Air Warrior* is always rendered as full screen; however, for performance or hardware reasons, the Flight Window resolution may be set to a smaller size than full screen.

The default setting is 640 x 480. If your display equipment supports larger displays (800 x 600 or 1024 x 768), you may select the desired setting. Any setting that exceeds your current screen resolution will be disabled.

USER INFORMATION

Before you can play *Air Warrior* online, you must sign in and enter some information about yourself, referred to as "User Information." User information may be entered or changed only when you are online, but you can prepare the required information off-line to save time.

You are required to enter User Information the first time you enter *Air Warrior* online; once entered, the information stays on record for all your subsequent visits to the game. You may change the information at any time.

The Set User Information Window is accessed in the Officers Club, by left clicking on the flight jacket laying on the table in the lower right-hand corner of the screen. The process for entering this information is covered in more detail in Section 13.

You are advised to prepare your User Information before entering the online game to save time. You will be required to enter a unique five character alpha-numeric player ID, a "handle" or pseudonym for game play, and an e-mail address. If you do not care to choose a Player ID or handle at this time, the computer will generate a random Player ID for you under the handle "New User."

Your Player ID may contain any combination of letters or numbers. Remember that this Player ID will be displayed as your "call sign" or identifier during radio and intercom conversations; for ease of recognition, you may wish to relate it to your handle.

It may be possible that the Player ID you choose is already in use, so be sure to have some alternates ready. The system can assign you a random player ID if you desire, which is functional but less than romantic (e.g., Q7XL4).

Your "handle," or game playing pseudonym, may be up to 32 characters long, and may be a combination of letters and numbers. There is no checking for uniqueness

among handles, so it is possible to meet another player using the same handle as yours. You may change your handle at any time, although you must be online to do so.

Try to think of a unique handle for yourself. The online world makes a distinction between a person and a persona. The former is who you are personally - the individual you see in the mirror each morning.

The latter is who you are in the game - a person no one sees, a character developed completely out of your conduct in the game and on the bulletin boards. For many people, the two are pretty much the same, yet for reasons surpassing the scope of a gaming manual, you need a handle to enter the world of *Air Warrior*.

At first, many Air Warriors took the names of famous World War II aces, such as Galland and Bader, but that practice soon disappeared as the game developed its own subculture apart from history.

Nowadays, a handle can be practically anything. Some are macho (Nick Bigrod), some are self-effacing (Dead Duck), some involve references to literature (Dr. Pangloss), some are bluntly crude (Vomit) and some make little sense whatsoever (Just a Rubberhead). In other words, almost anything will do, so long as it's not obscene.

As you meet other players, you will notice that some are members of a squadron, with a squadron designator at the end of their handle; for example, "Marauder/ 8BALL." Some squadrons develop and include rank insignia or other personnel designations using keyboard symbols. This is part of the fun of belonging to a squadron, since up to 32 character spaces are available.

Keep in mind that your handle will be abbreviated for you by other Air Warrior pilots. This is both a sign of familiarity, and it saves keystrokes in-flight. Normally, this isn't a matter of great concern, but some pilots, such as Assassin, discover to their occasional dismay that some handles don't abbreviate very well.

Your online service e-mail address is also displayed, enabling other players to send you e-mail. This is handy if another player has something to tell you or wishes to contact you when you are not logged on to the game.

KEYBOARD AND KEYPAD CONTROLS

A number of functions in *Air Warrior* may be controlled from the keyboard or keypad. Many of these are assigned to buttons and switches carried by *Air Warrior*-compatible control devices (see Appendix A). If these devices are not available, *Air Warrior* functions may be entered directly from the keyboard. For example, you may start your engines using the <8> key, or use the <f> key to fire your guns.

Keyboard and keypad functions will execute as soon as the key (or sequence of keys) is pressed. Escape key commands (<ESC + [key]>) are executed by pressing the <ENTER> key after pressing the appropriate keys. See the Introduction of this manual for more information on keyboard, keypad and <ESC> key functions. Many of these key function definitions can be viewed on-screen during game play by pressing the <F1> help button. Press <F1> a second time to dismiss the help display.

KEYBOARD CONTROLS

These controls work strictly from the keyboard, not the keypad:

8	Start/stop engine
7	War Emergency Power (WEP)
Semicolon (;)	Raise/lower landing gear (raise/lower dive brakes on the F4U Corsair - see spacebar for P-38 and jets)
Right bracket (])	Decrease LCOS range 100 yards
	Increase the level bombing bombsight magnification
Left bracket ([)	Increase LCOS range 100 yards
	Decrease the level bombing bombsight magnification
c	Increase throttle by 7%
SHIFT + c	Full throttle
v	Decrease throttle by 7%
SHIFT + v	Minimum throttle
9	Turn gun camera on/off
f	Fire guns
b	Bomb release
Spacebar	Wheel brakes (dive brakes on the P-38 and jets)
1	Full view range (all objects visible)

2   Medium view range (default view - all but the most distant
                     objects visible)
3   Short view range (only objects within a few miles can be seen)
4   Combat range (only immediate objects will appear,
                     and horizon shading disabled)
5   Abridged range (no terrain detail whatsoever)

KEYPAD - FLAPS AND RUDDER

*   Center the rudder
7 (home)   One notch of left rudder
9 (pg up)   One notch of right rudder
1 (end)   Raise flaps one position
3 (pg dn)   Lower flaps one position

KEYBOARD - FLAPS AND RUDDER

s   Center the rudder
a   One notch of left rudder
d   One notch of right rudder
<   Raise flaps one position
>   Lower flaps one position

FUNCTION KEYS - IN-FLIGHT

F1   Help display on/off
F2   Replace view with Text Buffer
F10   Turn radar screen/map view on/off

RADAR MAP DISPLAY

These keys apply only when viewing the radar map display:

Right bracket ( ])   Zoom out
Left bracket ([ )   Zoom in

CTRL+F2   Toggle map centering on/off. When on, the map is
                    centered on your location. When off, you can use the
                    arrow keys to scroll the map.

ESCAPE KEY COMMANDS

For these commands, press the following keys, followed by <ENTER>:

ESC + a   Arm bombs

ESC + e   Exit the plane (when online, you must be on the ground
                    and stopped for this to work).

ESC + p   Parachute from your airplane. You must hit <ESC + p>
                    a second time to pull the ripcord.

ESC + sd   Switch on the CCIP dive bombing sight

ESC + sg   Switch to gunsight

ESC + z   Switch to level bombing sight (medium and heavy
                    bombers only)

ESC + oj   Toggle flight control between joystick and mouse

ESC + t[channel]   Tune your radio to the specified channel (online play
                    only - see the Radio Procedures section)

ESC + j[position]   Move to new position on bombers (see Section 9: Bomber
                    Operations and Section 10: Vehicle Operations for a list of
                    positions)

VIEWS

Many keyboard controls can be used right from the keypad.

Keypad - Views

8 (up arrow) - Look forward

4 (left arrow) - Look left   5 - Straight up view   6 (right arrow) - Look
right

2 (down arrow) - Rear (mirror) view

0 (ins key) - Look down, but only into the cockpit

Combination Views - Keypad

You can combine two or more keys to acquire various angle views. For example:

8+5	Forward/up view
0+6+2	Down/right/back
4+0	Down/left

Dozens of combinations are possible. Experiment while flying to find your favorites. Note: Some of the more esoteric view combinations are not supported by plane artwork, and will show your plane as a gray outline.

Keyboard View Keys

	G - Look forward	
H - Look left	K - Straight up view	L - Look right
	J - Look down	
	M - Rear (mirror) view	

The two and three key combinations (as on the keypad) are available here too.

Keyboard Controls for Making and Viewing Films:

These keys may be used for making and viewing films (see Section 8):

9	Turn gun camera on/off (used in-flight only)
p	Pause film
n	External view mode
F1	Help
F3	Rewind to the last break
F4	Fast-forward to the next film break
F5	Decrease film speed
F6	Increase film speed
F7	Target selector
F8	Enter the film
F9	Show position of the original camera plane
F10	Radar/Map display
ESC	Pause film and select a different point in time on the film

Below is a small sample of some combination views from a Focke Wulf.
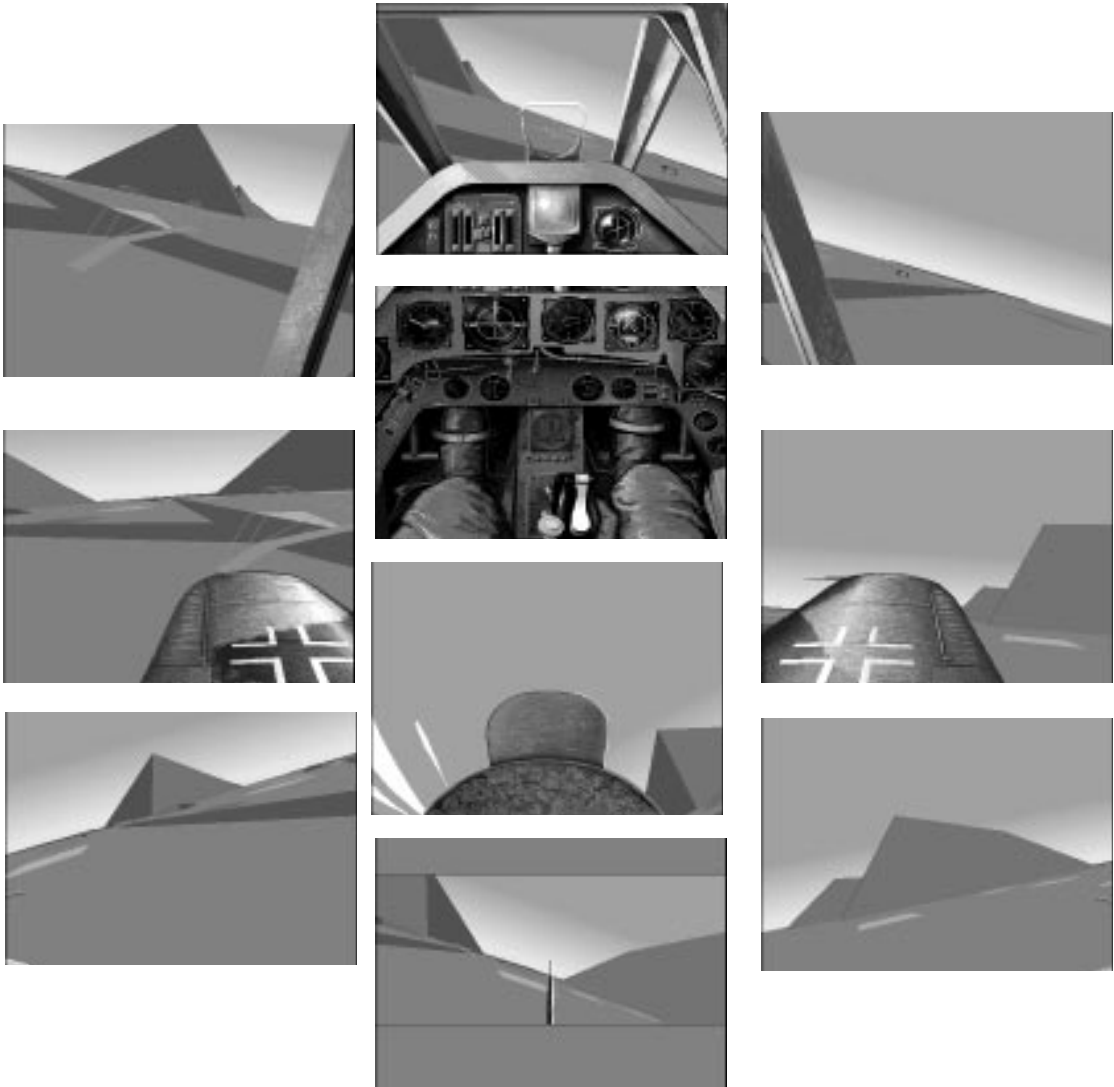
MACROS

Air Warrior supports recorded keystroke combinations (macros) while in-flight or during film playback. Macros come in two forms: Timed and Fast Playback. The first executes at the rate it was recorded; the second executes as fast as possible.

To record a macro, you <u>must</u> be in-flight, either online or off-line.

a) For a Timed macro, press <CTRL+ALT+F10>. For a Fast macro, press <CTRL+ALT+F9>, then release the keys. Follow the instructions displayed in the message window.

b) You first have to select the key or key combination that will trigger the macro. You may use any combination of keys including <CONTROL>, <ALT>, or <SHIFT>. The only combinations not allowed are <CTRL+ALT+F9> or <CTRL+ALT+F10>.

The macro program is ready to record as soon as you release all the keys. If you are recording a Timed macro, the timer will not start until you press the first key.

c) Press <CTRL+ALT+F9> or <CTRL+ALT+F10> to end recording.

If the key combination is already attached to an existing macro, the new sequence will replace the old one. If the new macro contains no key presses, then the old macro (if any) is erased.

d) If you run into major problems, delete the macro file (AIRWAR.MAC) and start again. If you can reproduce a bug, please send it to us!

CAVEATS

Pressing any key that initiates a macro while another macro is playing will terminate the running macro. You must hit the macro key a second time to start the new macro. Pressing keys while a macro is running can produce unusual results. This is due to interaction between the keys being "pressed" by the macro program, and those pressed by the user.

Be careful when assigning macro trigger keys. If possible, choose key positions that are not near an existing command key; for example, assigning a macro to the keyboard <9> key, which is adjacent the "start/stop engines" key <8>. Hitting the wrong key could have unpleasant results!

AIRCRAFT INSTRUMENTATION

This is the main cockpit instrument panel for World War II fighters and bombers. For those of you familiar with aircraft cockpits, most of these gauges and controls will require little explanation. However, as with all simulations, some of these instruments are unique to *Air Warrior* or may be employed in a manner unfamiliar to you.
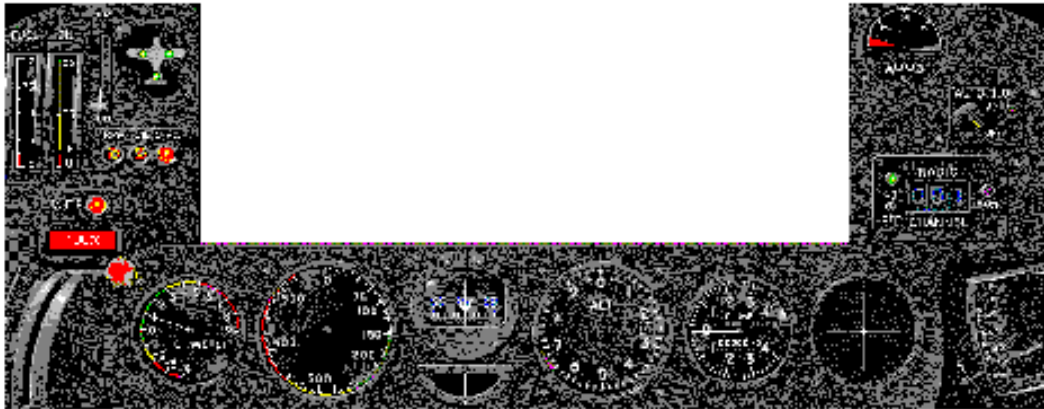
The instrument panel for a WWII aircraft.

Instrument panels for World War I aircraft are naturally simpler, and minus some of the more modern amenities such as flaps and retractable landing gear. Jet aircraft are fitted with appropriate instruments as well. The basic instrument panel illustrated above is broken down and explained in the following pages.

When looking out of your cockpit, you will see authentically styled graphics for the particular aircraft you have chosen. For example, if you are flying a twin-boom P-38, you will see an engine nacelle on each side of your cockpit. This assumes you have loaded the entire *Air Warrior* library of plane art; if you didn't (perhaps to save space on your hard drive), you will be viewing generic plane artwork instead. Your plane will fly just the same in either case.

You have some control over selecting the instruments on your panel. In Section 2 of this manual, you will find instructions on how to substitute an Artificial Horizon for the Stick Box, and how to set the Air Speed Indicator to show indicated airspeed (speed of air past your plane) or true airspeed (in respect to the ground).

ALTIMETER

The altimeter indicates how far above the ground you're flying. The "second," "minute," and "hour" hands show tens, hundreds, and thousands of feet, respectively.

AIRSPEED INDICATOR

This is your airspeed indicator. It gives readings in knots (1 knot = 1.14 miles per hour). You may select indicated airspeed (speed of air past your plane), or true airspeed (with respect to the ground). Jets have a digital display Mach meter in their airspeed indicators as well.
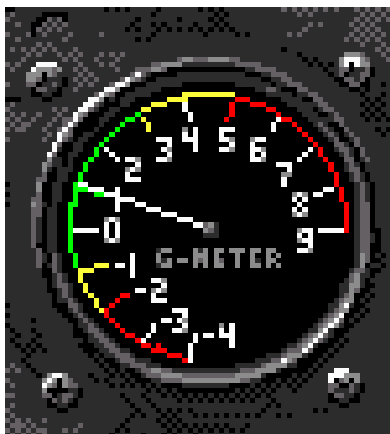
STICK BOX

The stick box reflects how much stick control you are applying. It's particularly useful in gauging pilot control movements when you're watching films. Note that this can be replaced by the artificial horizon, described on page 4.5.

RATE OF CLIMB INDICATOR

This gauge shows your climb or dive rate in thousands of feet per minute.

ACCELEROMETER

Your accelerometer indicates how many positive or negative G's you are pulling. In normal flight it will read 1 G.

COMPASS

Your compass shows the direction you're flying.
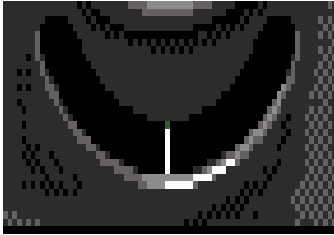
RUDDER CONTROL

This indicates how much rudder control you are applying. Neutral rudder is shown here.

WARNING LIGHTS

Here are your warning lights for stall, loss of oil pressure, or excessive engine rpm.
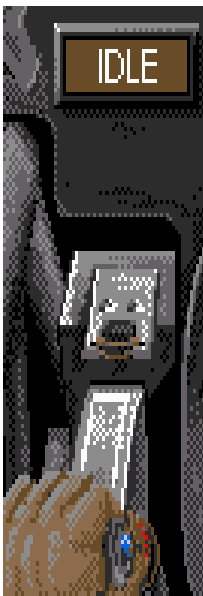
THROTTLE LEVER

The throttle lever. The indicator box above it shows what percentage of full throttle you are applying.

ARTIFICIAL HORIZON

When you enable the artificial horizon, it replaces
the stick box.

Flaps 50º   *Flaps 40º*   *Flaps 30º*   *Flaps 20º*   *Flaps 10º*

FLAPS INDICATOR

The Flaps indicator shows to what, if any, extent you have your flaps deployed.
Flaps settings vary by plane type. Some, such as the P-51 Mustang, have four
position flaps whereas others, such as the Spitfire, have only two settings - fully up
or down. Also, some planes allow you to deploy flaps at almost any speed. Most
aircraft, however, will not allow you to use flaps at speeds above 160 knots.

AIR WARRIOR GEOGRAPHY

The terrain of *Air Warrior* is simplified to enhance frame rate and game play. It was designed to offer opportunities for a variety of air combat sorties while providing ready action and geographical balance among competing countries online. For a quick tour of the various *Air Warrior* terrains, you can fly from the main airfield of each country in the Solo mode (from the Main Menu).

Neutral field 16

Neutral field 16   on a Sunday night online

THEATERS

Air Warrior has several theaters: Europe and Pacific in half-time and real-time, and expanded scenario theaters for special events, also in Pacific and European milieus. None is a rendering of an actual region of the world. Rather, they are meant to suggest the geography of Europe and the Pacific, balanced for game play.

European theaters are lands of mountains, lakes and rivers, whereas the Pacific venues are all islands and ocean. Europe consists of many, widely dispersed airfields and facilities; the Pacific, on the other hand, features a centralized Atoll that's always up for grabs, surrounded by island complexes. The scenario terrains are sprawling affairs, several times the size of the regular Europe or Pacific theaters. Each theater lends itself to a particular type of action. Online, Europe tends to foster organized, coordinated missions, while Pacific action tends to be fast and loose. The scenario terrains, on the other hand, were created to provide scenario designers with the raw material they need to devise a host of different, challenging special events.

COUNTRIES

There are three countries: A, B, and C. In the theaters, each country has equal airfields and facilities, roughly equal territory, and access to the same airplane types. No country represents a nation that fought in the Second World War; *Air Warrior* is a game that employs World War II era aircraft — it is not, in the main, a simulation of World War

*Main airfield in the real-time European theater*
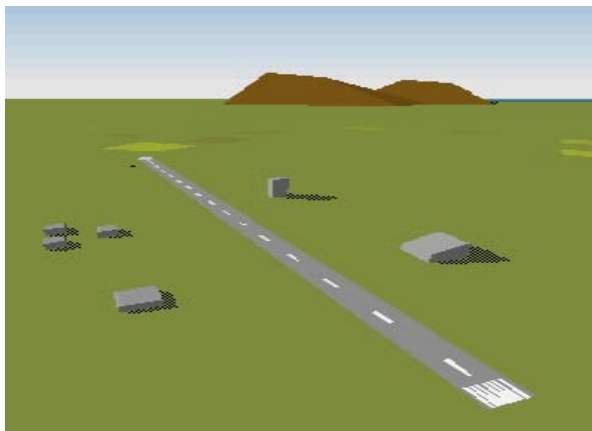
A typical secondary field

II. Players are assigned a random country affiliation the first time they play. You must wait 24 hours before you can change affiliation.

AIRFIELDS

Air Warrior airfields are identified by country and number. In the regular terrains, each country has a main airfield, and two or more secondary fields. Most terrains have vehicle garages. Neutral airfields can be captured in online play, as well as capturable vehicle garages. Pacific terrains also have aircraft carriers.
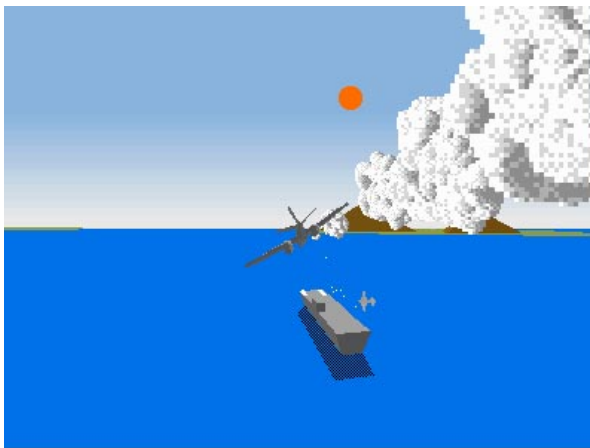
An aircraft carrier under attack

AIRCRAFT RADIO PROCEDURES - NETWORK PLAY

"Radio" communications are an important aspect of play in *Air Warrior.* Actual voice communications are not supported, but full communications capability is provided via your keyboard. You may radio from ground to air, air to ground, or from plane to plane. In addition, bombers and other crew-served vehicles may communicate in a similar manner over a non-broadcast intercom.

Using the radio may seem confusing at first because there are several ways to broadcast. Three sets of radio channels are defined in *Air Warrior*, enabling players to communicate with (1) everyone in their online environment, (2) with everyone aligned with their country (A, B or C), or (3) with selected countrymen on semi-private channels. These are defined as follows:

CHANNEL 1

This is the one open channel all countries can hear. Your radio is automatically tuned to Channel 1 when you begin your mission. Although Channel 1 is an open channel, you can only pick it up if your radio is tuned to it.

CHANNEL 2

This is the open channel for a country. Each country has its own separate Channel 2; members of a country will always receive radio traffic on this channel regardless of what other channel they may be tuned to.

CHANNELS 3-999

Each country has these channels available and, like Channel 2, radio traffic on these channels can only be exchanged by members of a country. Unlike Channel 2, you have to be tuned to one of these channels to receive it. For instance, if a C-land pilot is broadcasting on Channel 175,

Country		
A	B	C
Channel 1 - Open on all radios		
Channel 2: Open on all A radios	Channel 2: Open on all B radios	Channel 2: Open on all C radios
Channel 3 - 999: Open only on tuned A radios	Channel 3 - 999: Open only on tuned B radios	Channel 3 - 999: Open only on tuned C radios

Radio Channel Chart (by country)

only C-land pilots tuned to Channel 175 can hear him. If he broadcasts a message on Channel 2, every fighter pilot in C-land will hear his message no matter what channel their radios are tuned to. If he broadcasts a message on Channel 1, it will be broadcast to all players in the arena whose radios are tuned to Channel 1.

The purpose of Channels 3 - 999 is to allow groups within a country, such as a squadron on a coordinated mission, to communicate privately.

Prior to flight departure, pilots should coordinate frequency assignments with both ground and flight personnel. Should a pilot take off without coordinating specific frequencies, contact can be made by calling the pilot on Channel 2.

As mentioned above, this call will be received by *all* of your country's Channel 2 radios in the arena. Receiving a "Blue Goose, please phone home" message could be a distraction to pilots involved in combat, so be sure to coordinate communications beforehand.

BROADCASTING ON THE RADIO

I don't know about everybody else, but I find it pretty hard to use the radio when I'm doing realtime. Stuff just happens too fast. If I do try to send a lot of messages, I usually end up daid because I'm spending too much time typing and not enough time watching for boogers.

Broken Arrow

The human brain still works faster than you can type (with a few exceptions I could name, of course). If'n ya know what ya should do, ain't much reason to type.

DoKtOr GoNzO

Fighter Pilots

In-flight, you tune your radio by entering the following keyboard command:

 <ESC> + t + [channel #]   (followed by <ENTER>)

There will be a brief delay while the channel changes. To broadcast a message on the channel your radio is tuned to, begin the message with a slash (/). In fighters, you can broadcast on Channel 2, no matter what channel your radio is tuned to, by beginning your message with an apostrophe ('). After typing any radio message, you send it by pressing the <ENTER> key.

Bombers and Vehicles

Bombers and vehicles operate a bit differently. In a bomber or vehicle, the apostrophe is reserved for the intercom, which only broadcasts to crew members inside the plane or vehicle. If a member of the crew wants to communicate on Channel 2, he has to tune his radio to Channel 2, and begin his message with a slash.

Radio Rooms

From Ready Rooms at the airfields, you can go into the Radio Room and communicate with pilots in the air. You may tune the Radio Room radio by clicking on the radio set and entering the desired channel in the Change Radio Channel Window, or by typing "/tune [channel #]"; press <ENTER> to

Change Radio Channel Window

tune to your desired channel. Then type a slash (/) followed by your message to broadcast; send it by pressing the <ENTER> key.

IDENTIFYING RADIO TRANSMISSIONS

In-flight radio communication is formatted, to a limited extent, to let you know its origin. Channel 2 communication is preceded by an asterisk (*) and the sender's Custom Player ID (CPID) number; intercom messages from crew members are formatted with parentheses surrounding the player's CPID number, and messages from players on the ground show their full handle prior to the message.

Formatting, however, fails to differentiate between the open Channel 1, and country specific traffic on Channels 3-999. Both contain the sender's plane number, followed by his message, with no added identifying cues. Still, this is not as confusing as you may think.

You cannot hear messages on Channels 3-999 unless you're tuned to one of those channels, and if you're tuned to a channel other than 1, you cannot hear Channel 1. Thus, if you're tuned to your country's Channel 69, you know that all radio messages you see beginning with just the CPID were also broadcast on Channel 69.

For example, a message from a friendly pilot on Channel 2 would look like this:

> *MUSKE: Is that you in the 109, Bluie?

If he were broadcasting over the intercom on a bomber, it would look like this.

> (MUSKE): How did I get here?

If he were broadcasting on a country's channel other than 2, it would appear:

> MUSKE: What are you doing back in A-land?

Over Channel 1, it would look the same as if he were broadcasting on any other tuned channel other than 2:

> MUSKE: FEED ME!

And if he were broadcasting from a Radio Room, here's what his message would look like (if his "handle" was Stiletto):

> -)-STILETTO—: Goodnight all!

Because people cannot identify what channel a Radio Room message is broadcast on, it's a good idea to provide that information when radioing from the ground.

> -)-STILETTO—: (on 2) Poof!

COLORED RADIO MESSAGES

Often you'll see radio messages that appear in the country color of the player sending them. This means that the player is within the maximum radar range of your position. This does not mean that the player will also appear on radar. Rather, if max radar range is set, for example, to 17,000 yards, then all the colored radio messages you receive have been broadcast within a radius of 17,000 yards of your position.

SUMMARY OF IMPORTANT RADIO AND INTERCOM COMMANDS

Type these commands in your outgoing message area, and press <ENTER> to execute:

/tune [channel #]	Tune to a radio channel from a conference or briefing room.
ESC + t + [channel #]	Tune to a radio channel in-flight.
/ [radio message]	Broadcast on the radio channel you're tuned to.
' [radio message]	Broadcast on your country's main radio channel (fighters), or over the intercom (bombers or vehicles).

AIR WARRIOR RADAR

Air Warrior does not have radar resembling the equipment World War II era pilots had in their aircraft. During most of the Second World War, pilots received radar information over the radio from fixed radar stations on the ground.

In the interest of game play, however, each plane in *Air Warrior* carries a combination map/radar display. This display shows a dynamic map of the terrain being flown over, overlaid with radar information received by the pilot's home country's ground-based radar. Understanding how radar works in the game is essential.

THE RANGE OF RADAR

In the half-time, relaxed realism arenas, radar is based at the control tower of a country's main airfield (A:1, B:1 or C:1). In this case, each main airfield tower radar covers roughly one third of the map of the European theater. In the real-time arenas, radar is based at each individual airfield's radar tower and covers whatever range the arena is set to — usually around 17,000 yards. Planes flying below 200 feet cannot be detected by radar at ranges over 5,000 yards.

RADAR MAP AND GRID

When you bring up the radar/map display you see a map on a grid representing sectors 12.5 miles wide. These sectors are charted and fixed. As you fly and move across sectors, the grid moves; it's not a static overlay.

Airfields are marked on this map, and the cross in the center is your plane. No matter which direction you fly in, the top of the screen is always north. The cross representing your plane is centered in the screen by default.

RADAR COUNTERS

When you're flying *Air Warrior* online, you will see colored boxes in the upper left hand portions of sectors that have air traffic. These are your plane counters and they tell you how many enemy and friendly aircraft are in a sector. This screen shot on the following page shows a good deal of air traffic. To get an idea of how counters are arranged, look at the central sector where the + that represents your plane is located. The counters there reveal 12 bandits and 6 friendlies. Plane counters operate even if your country's radar has been knocked out by bombing or you are flying beyond radar range.
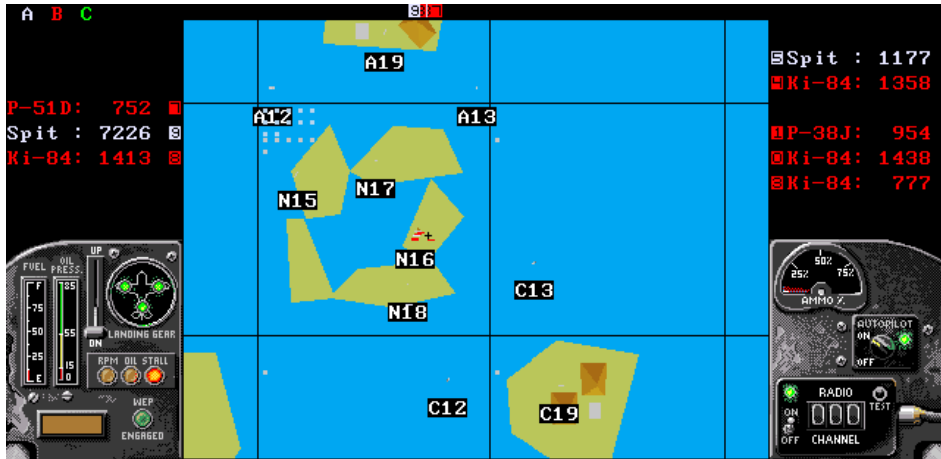
Radar Screen — Pacific theater

TRACKING ICONS

If an aircraft is within range of your country's radar and is also within 17,000 yards of your plane, it will appear as a tracking icon (in Real-Time play, radar range may be shortened somewhat). The tracking icon will appear on both the tactical display surrounding your radar screen, and on the screen itself as a short line, colored to reflect its nationality.

The former reports its existence and distance from you, and the latter reports its position. If your country's radar has been destroyed or you are flying out of radar range, tracking icons will not appear. Planes can be shown as icons or as numbers, in normal or reverse video, depending on the selections made in Pre-Flight Setup. See Section 2 of this manual.

RADAR VIEW RANGE

In a target rich environment, plane counters become less important than simply being able to follow the flow of the action nearby. Shortening the radar's view range helps you cut down the clutter. By hitting the bracket keys (<[> and <]>) you can zoom in and out — very useful in putting hostile skies choked with airplanes into a manageable focus.

BIASED VIEW MODES

You can track a maximum of 12 airplanes on radar. Biased view modes allow you to choose which sorts of aircraft you want among those 12.

Radar Screen — zoomed in

The default "unbiased mode" will show you the 12 aircraft closest to you, no matter if they're friendly or enemy planes. Normally, this setting will work fine.

If you select "enemy biased mode", and there are more than 12 nearby planes, enemy planes will receive first priority for display. Likewise, if you choose "friendly biased mode," the display priority shifts toward showing you nearby aircraft from your country. "Bomber biased mode" will give display priority to bombers (both friendly and enemy).

For example, let's say there are 16 planes within range of your radar: eight enemy and eight from your country. In unbiased view mode, the nearest 12 aircraft will show up on your radar, regardless of nationality.

If you set your radar to enemy biased mode, your radar will track all eight enemies, plus the nearest four friendlies. On friendly biased mode, all eight friendly planes will appear on your radar screen, along with the nearest four enemy aircraft.

Bomber biased mode is useful when flying cover for a bombing raid, or when intercepting incoming enemy bombers. In bomber biased mode, if 16 planes are in radar range, and eight of them are bombers (either friendly or enemy), the radar display will show all of the bombers, plus the four nearest non-bomber aircraft, regardless of nationality.

SETTING RADAR BIAS MODES

Setting biased view modes is much like sending a radio message. You type a slash (/) followed by an asterisk (*) and the mode: ru (radar unbiased), re (radar enemy), rb (bomber biased), or rf (radar friendly).

If you find this confusing, keep in mind that most Air Warrior pilots never change their radar from the unbiased default mode.

IMPORTANT RADAR COMMANDS

Keyboard commands:

F10	Turn radar screen on/off
[	Zoom in
]	Zoom out
CTRL+F2	Release the map and scroll it around with the arrow keys
CTRL+F2	Center the map on your position

Command Lines (follow with <ENTER>):

/*ru	Unbiased radar/icon mode (default)
/*re	Enemy biased mode
/*rf	Friendly biased mode
/*rb	Bomber biased mode

GUN CAMERA FILMS

As in real combat, you can activate in-flight gun cameras to make a film for review later. A gun camera film is reviewed by clicking on the FILM sign on the Main Menu. Several sample gun camera films are provided with *Air Warrior* for your review. Note: For reasons of economy, reviewing gun camera films is usually done off-line, although you may do so while online as well.

MAKING FILMS

To activate the gun camera during flight, press the <9> key on the keyboard; press the <9> key again to stop your gun camera. You can run the camera for the whole flight, or start and stop the camera several times in a mission if you only want to capture the choice moments. Filming your missions and replaying them is a great way to learn what you're doing right or wrong in combat.

SAVING FILMS

When you complete a flight in which you've made a gun film, *Air Warrior* prompts you to enter a name for the film. If no name is entered, a default name is assigned, beginning with FILM0000.CAM, and subsequent films in a game session receive sequential numbers (FILM0001.CAM, FILM0002.CAM, etc.). In this case, once you exit the program, the next time you run *Air Warrior* and start the gun camera,
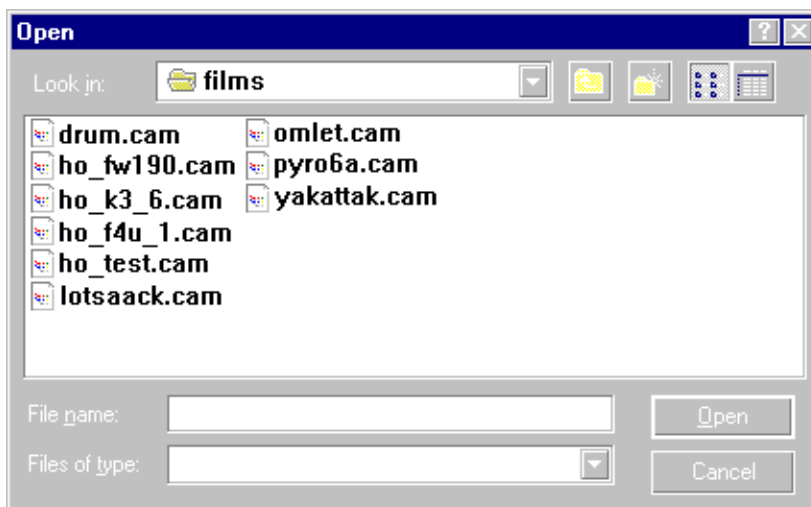
Open Film File Window

the first film will be recorded as FILM0000.CAM again, overwriting any previous film by that name. Thus, after you exit *Air Warrior,* you should rename any of these default film files that you want to save; this will prevent them from being destroyed the next time you play. Note: Films will take up space on your hard disk; be sure to delete old films when you are through with them.

FILM VIEWING

Playback and review of gun camera films is usually done off-line. From the Main Menu, click on the FILM sign just beneath the Control Tower. This will bring up the Open Film File Window. To view a film, double left click on the file name, or left click on it once to highlight it, and left click on the OPEN button. Once the film is running, you may enter any of the following keyboard commands:

Commands During Viewing:

p	Pause film
n	External view mode
F1	Help
F3	Rewind to the last break
F4	Fast-forward to the next film break
F5	Decrease film speed
F6	Increase film speed
F7	Target Selector
F8	Enter the film
F9	Show position of the original camera plane
F10	Radar/Map display
ESC	Pause film and select a different point in time on the film
[and]	Zoom in/zoom out

EXTERNAL VIEW MODE

Pressing the <n> key during a film allows you to view the action from outside your plane. You can use the normal in-flight view keys or your joystick or mouse to examine the action from various angles, and the bracket keys ([and]) to zoom in or out.

TARGET SELECTOR

One problem most new players have is keeping track of an intended victim in a target-rich environment. The film Target Selector allows you to highlight a plane so that you can more easily follow its movements during a fight.

Hitting the <F7> key during playback activates the Target Selector. The first visible target is surrounded by a red box and its tracking information is displayed in reverse video. Pressing <F7> again selects the next visible target, and hitting <F7> twice in quick succession turns the Target Selector off.

ENTERING FILMS

You can enter the film and gain control of your plane by hitting the <F8> key. You will be able to shoot at aircraft in the film, but the recorded participants will follow their destined flight paths and the film will end when it did originally. Also, if there are breaks in the film — moments when you stopped and restarted the film while you recorded it — you will be returned to conventional playback. Press <F8> again if you wish to resume flying within the film.

If you enter a film but want to keep track of your original flight path when you recorded it, press <F9>. This will create a camera plane that follows your original route and maneuvers. It will have an icon labeled CAM.

SELECTING PORTIONS OF A FILM TO VIEW

Fast-forward/Rewind

Hitting the <ESC> key during film playback brings up the Film Seek Window. In it, you can enter a moment in the film and have the film player fast-forward or rewind to that point.

If you want to jump to the next break in the film, press <F4>; to rewind to the last film break, press <F3>.

Adjusting the Speed of Film Playback

The *Air Warrior* film viewer can accelerate playback by up to ten times, or slow down playback to as little as one-tenth original speed. The <F6> key speeds up playback; <F5> slows it down. The degree of acceleration or slow motion de-pends on how many times you press the <F5> or <F6> keys.

BOMBER OPERATIONS

CREWING A BOMBER

To crew a bomber, the pilot has to choose the plane he wants to fly, the gunners have to ask to come aboard, and the pilot has to accept them. This all has to happen from an airfield Ready Room prior to flight.

Broadcasting a Request for a Crew

When you select a bomber as your aircraft, you are offered the option of broadcasting a crew request to everyone in the Ready Room or everyone in your country who is not in-flight. Your name on the Ready Room Player List will have a control yoke icon next to it, indicating tthat you're the pilot of the bomber. NOTE: You can move to another Ready Room/Airfield after you've signed on crew members. However, only those crew members who are in the new Ready Room with you when you decide to enter flight will be loaded into your bomber.

Signing On

Players who wish to sign aboard your bomber can ask to join up as crew members by clicking on your name in the Ready Room Player List and using their right mouse button pop-up menu. They will then see a list of available positions and can click on the one they want. This sends a request to you which you can choose to accept or decline. When accepted, a gunsight icon will appear next to a player's name. As the positions are filled, you will see a list of who occupies which position. Click on the BEGIN MISSION button, or click on the AIRFIELD door, and you and your crew will load into your chosen bomber, ready to take off.

MOVING AROUND A BOMBER

With the exception of the pilot, who may jump to the bombardier position only, crew members can jump to other positions on the bomber, so long as someone does not already occupy that spot. This can be useful if you've run out of ammunition at a gunner position. Use these command keys (followed by <ENTER>):

ESC + j[position]	Jump to another position on the bomber (the pilot can move to the bombardier slot only).
ESC + z	Move from the pilot's seat to the bombardier position, and vice-versa.

Bomber Crew Positions

B-17 Flying Fortress

Position	Command	Action
Tail Gunner	ESC + jt	Jump to tail gunner position
Upper Turret	ESC + ju	Jump to upper turret position
Navigator	ESC + jn	Jump to navigator position (not often used)
Left Waist Gunner	ESC + jlw	Jump to left waist gunner position
Right Waist Gunner	ESC + jrw	Jump to right waist gunner position
Ball Turret	ESC + jb	Jump to ball turret position
Chin	ESC + jch	Jump to chin position

B-25 Mitchell

Position	Command	Action
Tail Gunner	ESC + jt	Jump to tail gunner position
Upper Turret	ESC + ju	Jump to upper turret position
Co-pilot	ESC + jco	Jump to co-pilot position (rarely used)
Left Waist Gunner	ESC + jlw	Jump to left waist gunner position
Right Waist Gunner	ESC + jrw	Jump to right waist gunner position
Nose Gunner	ESC + jn	Jump to nose gunner position

A-26 Invader

Position	Command	Action
Upper Turret	ESC + ju	Jump to upper turret position
Lower Gunner	ESC + jlo	Jump to lower gunner position

Junkers Ju-88

Position	Command	Action
Upper Turret	ESC + ju	Jump to upper turret position
Nose Gunner	ESC + jn	Jump to nose gunner position
Lower Gunner	ESC + jlo	Jump to lower gunner position

G4M Betty

Position	Command	Action
Tail Gunner	ESC + jt	Jump to tail gunner position
Upper Turret	ESC + ju	Jump to upper turret position.
Navigator	ESC + jn	Jump to navigator position (rarely used)
Left Waist Gunner	ESC + jlw	Jump to left waist gunner position
Right Waist Gunner	ESC + jrw	Jump to right waist gunner position
Chin	ESC + jc	Jump to chin position

USING THE INTERCOM AND RADIO

Your radio works a bit differently when you fly as a gunner or a bomber pilot. Preceding a radio message with an apostrophe <'> broadcasts it only to other people on the bomber; it functions as an intercom, not as your country's Channel 2 the way the apostrophe works on a fighter. If you want to broadcast on Channel 2, you'll have to tune your radio to 2 (<ESC + t + 2>) and begin your radio message with a slash (/).

TURRET AND GUN CONTROLS

Turrets with auto-turret movement are controlled by your mouse or joystick. Manual turrets are controlled by keys on your keyboard, though you still use your joystick or mouse for fine aiming control. Most players find that the mouse works best for gunning (right button fires gun). You can toggle between your mouse and joystick in-flight (ESC + oj + ENTER). The following keyboard command keys are used to operate manual turrets:

a	Rotate turret left
d	Rotate turret right
e	Move guns up
c	Move guns down
ESC + oj	Toggle between joystick and mouse (follow with <ENTER>)

OTHER IN-FLIGHT COMMANDS

ESC + a	Open/close bomb bay doors (follow with <ENTER>)
b	Drop half your bomb load

From the bombardier position:

x   Switch autopilot off/on

]   Increase bombsight magnification

[Decrease bombsight magnification

USING THE BOMBSIGHT - MEDIUM AND HEAVY BOMBERS ONLY

Air Warrior's level bombsight is patterned after the famous Norden Bombsight from World War II. It allows the bombardier to control the plane during a bomb run and it computes the likely place your bombs will land, given your altitude and velocity. Just drop your bombs when the crosshairs are on the target.
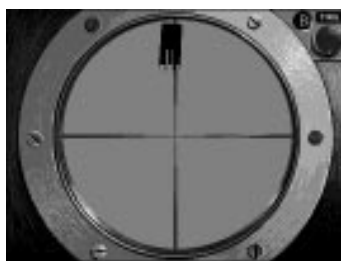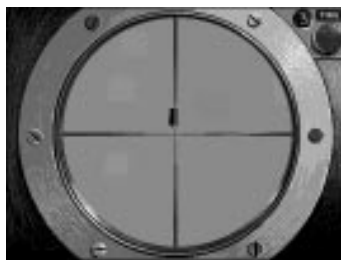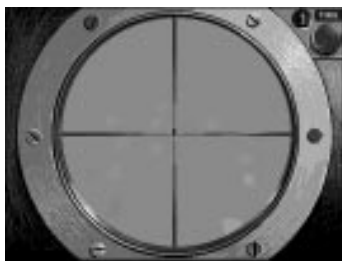
A factory seen from 10,000 ft. using low, medium, and maximum magnification

Moving from the pilot's cockpit to the bombardier's position switches on the autopilot. You can switch it off if you choose, by hitting the <x> key, but generally you only want to make slight adjustments to your course when you're on a bomb run. If you've chosen a good bomb run angle before switching to the bombsight, you should only need to apply rudder controls to line up your target.

When bombing from medium to high altitudes, use magnification to help you see your target and line it up. You also might want to slow down to near stall speed when you drop on a target from high altitude and thus reduce bomb spread.

Be sure to open the bomb bay doors (using the command <ESC + a + ENTER>) before attempting to drop your bombs, and remember to close them afterward; open bomb bay doors create considerable drag.

DIVE BOMBING COMMANDS

All fighters can carry at least one bomb; the Mustang, Lightning, Thunderbolt, Hellcat, and Corsair can carry two. Fighters must be configured as dive bombers from the Ready Room — bombs must be loaded before you enter the aircraft. You can load bombs on your plane with the Plane Setup Window, or you can type "/bomb" from the Ready Room before you take off. You cannot load bombs once you are in the airplane.

The plane you choose as a fighter bomber is generally a matter of experience and personal preference. Keep in mind that you'll probably be flying it as a fighter at some point in the mission and, even if you don't, dive bombing usually pushes an aircraft to its performance and maneuverability limits. Therefore, avoid choosing a plane you've never flown before simply because it carries two bombs. Bomb weight and drag will also impair a plane's climb rate, speed and manueverability.

Preflight Command (follow with <ENTER>):

/bomb   load bombs on your airplane

In-flight Escape key commands (follow with <ENTER>):

ESC + sd   Enable dive bomb sight
ESC + a   Arm bombs
ESC + sg   Enable fighter gun sight

In-flight command key:

b   Drop a bomb if bombs are armed — takes about 1 second after
                        key is pushed before actual release

See Section 2, Pre-flight Setup, for information on selecting a gunsight, and for specifying the color of the dive bombsight and gunsight.
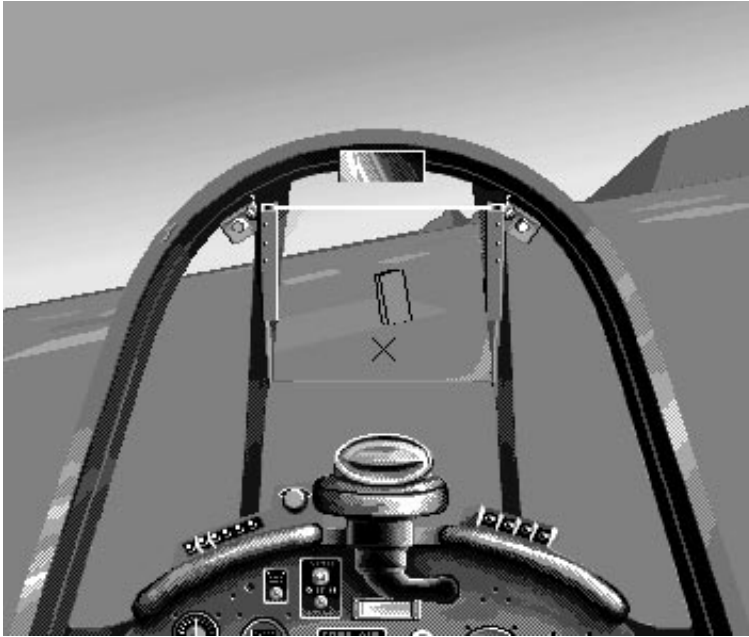
View of CCIP dive bombing sight in action

DIVE BOMBSIGHT

Air Warrior employs a bit of post World War II technology for dive bombing: the Continually Computing Impact Point (CCIP). This sight appears as an illuminated X where your pilot's gunsight would normally be, and it's the same color as the one you chose for your LCS gunsight.

Like any bombsight, it shows you where your bombs would land if released. However, if you enable the CCIP you will rarely see the magic X. Why? Because in most flight situations if you drop a bomb, its impact point will be below you. Thus, to use the CCIP you have to be flying at an angle or at a speed that will place your bomb's impact point in front of you.

ARMING BOMBS

You have to arm your bombs (<ESC + a + ENTER>) before you can drop them.

DIVE BRAKES

In Air Warrior, four fighters are equipped with dive brakes: F4U Corsair, P-38 Lightning, F-86, and MiG-15. On all, except the F4U Corsair, you deploy them by holding down the <Spacebar>. The dive brakes stay deployed until you release the <Spacebar>. The 38's dive brakes are actually a specialized flap designed to modify the airflow over the wings and restore pilot control at speeds above 375 knots.

Corsairs used their landing gear doors as dive brakes. Hitting the semicolon key <;> opens them and hitting it again retracts them.

Keyboard dive brake controls:

Semicolon (;)   Raise/lower dive brakes on F4U Corsair

Spacebar   Raise/lower dive brakes on P-38 and jets

VEHICLE OPERATIONS

In addition to aircraft, *Air Warrior* contains the following vehicles, which may be used by any player:

> T-34 Tank
>
> Flakpanzer IV Whirlwind Anti-Aircraft Weapon
>
> Willys Jeep
>
> Supply Truck

All are equipped with various armaments, except the supply truck. Players will find that many of the command keys are similar to those in aircraft, such as using the <8> key to start/stop the engine.

CREWING A VEHICLE

The T-34, Flakpanzer and Jeep all accommodate multiplayer crews, consisting of a driver and gunners for any available weapons. It is possible for one player to operate a crewed vehicle, but you will have to leave the vehicle in a stationary position when firing a weapon, as you can't drive and fire at the same time. Vehicle crews are assembled in the Ready Room of an airfield, and loading of fuel, ammo and supplies is accomplished at the same time, using the Vehicle Selection Folder.

Broadcasting a Request for a Crew

When you select a vehicle, you are offered the option of broadcasting a crew request to everyone in the Ready Room or everyone in your country who is not in-flight. Your name on the Ready Room Player List will then have a steering wheel icon next to it, indicating that you're the crew leader. NOTE: You can move to another Ready Room/ Airfield after you've signed on crew members. However, only those crew members who are in the new Ready Room with you when you decide to enter a vehicle will be loaded into your vehicle.

Signing On

Players who wish to serve on your vehicle can ask to join up as crew members by clicking on your name in the Ready Room Player List and using their right mouse button pop-up menu. They will then see a list of available positions and can click on the one they want. This sends a request to you which you can choose to accept or decline.

When accepted, a gunsight icon will appear next to a player's name. As the positions are filled, you will see a list of who occupies which position. Click on the BEGIN MISSION button, or click on the AIRFIELD door, and you and your crew will be loaded into your chosen vehicle, ready for combat.

MOVING AROUND A VEHICLE

Crew members can jump to other positions on the vehicle, so long as someone does not already occupy that spot. This is useful if you've run out of ammunition at a gunner position. Use the following command keys (followed by <ENTER>):

Vehicle Crew Positions

T-34 Tank

Position	Command	Action
Gun Position	ESC + jg	Jump to main gun position
Upper Machine Gun	ESC + ju	Jump to upper machine gunner position
Hull Machine Gun	ESC + jh	Jump to hull machine gunner position
Driver	ESC + jd	Jump to driver position

Flakpanzer IV

Position	Command	Action
Gun Position	ESC + jg	Jump to anti-aircraft gun position
Upper Machine Gun	ESC + ju	Jump to upper machine gunner position
Driver	ESC + jd	Jump to driver position

Jeep

Position	Command	Action
Machine Gun	ESC + jg	Jump to machine gun position
Driver	ESC + jd	Return to driver position

DRIVING A VEHICLE

Vehicles are driven with key commands, and the joystick or mouse. In most instances, the mouse will provide better control. You must be in the vehicle's driver position to steer, shift gears, etc.

Steering

A small steering wheel is indicated on the control surface, and it will rotate when steering with the mouse or joystick. A compass is available for specific directional information. Switch between mouse and joystick control with the command keys:

ESC + oj   Toggle between joystick and mouse (followed by <ENTER>)

Shifting

Air Warrior vehicles feature three-speed transmissions with a reverse gear. The engine and transmission behave as in real life — to move a vehicle, you will have to achieve the correct engine RPM when shifting, or the engine will stall. No clutch action is needed. Shift gears in a vehicle with the following command keys:

Keypad:

9   Upshift one gear

7   Downshift one gear

*   Shift to neutral from forward or reverse gear; shift to reverse from neutral

Keyboard:

d   Upshift one gear

a   Downshift one gear

s   Shift to neutral from forward or reverse gear; shift to reverse from neutral

Throttle

Throttle use is the same as on *Air Warrior* aircraft. Avoid extended periods of operation with the RPM indicator in the red zone.

c   Increase throttle by 7%
SHIFT + c   Full throttle
v   Decrease throttle by 7%
SHIFT + v   Minimum throttle

USING THE INTERCOM AND RADIO

Your vehicle radio works a bit differently than those in aircraft. Preceding a radio message with a reverse apostrophe (`) broadcasts it only to other people in the vehicle;

it functions as an intercom.

Summary of vehicle communications commands (follow with the <ENTER> key):

ESC + t + [channel #]   Tune to a radio channel in-flight.

/ [radio message]   Broadcast on the radio channel you're tuned to.

' [radio message]   Broadcast on channel 2.

` [radio message]   Broadcast over the intercom to other crew members.

VEHICLE GUN SIGHTING

Vehicles equipped with guns and/or cannon feature gunner positions, from which a player can track and fire the weapon. Ammo load is specified prior to departure in the Ready Room, using the Vehicle Selection Folder.

T-34 Tank

To operate the T-34's main cannon, you must be in the tank's main gun position (<ESC + jg>). The following command keys and controls apply:

raise gun   Joystick or mouse movement

lower gun   Joystick or mouse movement

a   Rotate turret left

d   Rotate turret right

f   Fire one round (or use joystick button or right mouse button)

Rt bracket ( ]) Decrease sight magnification 1X

Lt bracket ([ ) Increase sight magnification 1X (maximum 8X)

Using tank gunsight magnification to zero in on a target

The T-34 tank's cannon has a range of 9000 yards, but its range is reduced as you increase the gunsight magnification. When you first try tanking, it's best to shoot at targets considerably short of maximum range. You can judge if the explosion is in front of or behind your target, and can adjust the elevation of the gun to compensate. For this sort of adjustment, the mouse offers much finer control than a joystick (fire with the right mouse button). Press <ESC + oj> (followed by <ENTER>) to toggle between joystick and mouse control.

Players may also move to and use the T-34's hull-mounted machine gun, or the single upper machine gun mounted on top of the turret. These guns are directed with the joystick or mouse (fire with the right mouse button). The <f> key will also fire the gun.

Flakpanzer IV Whirlwind

To operate the Flakpanzer's main cannon, you must be in the main gun position (ESC + jg>). The following command keys and controls apply:

a	Rotate turret left.
d	Rotate turret right
f	Fire one round (or use joystick button or right mouse button)
e	Raise guns
c	Lower guns

The main gunner position of a Flakpanzer puts you behind the Flak's battery of four 20mm cannon — serious short range firepower. The Flakpanzer is primarily an anti-aircraft weapon with a maximum range of only 600-700 yards and, thus, does not have the elaborate gunsight of the tank.

View of Flakpanzer driver controls

The Flakpanzer's cannon can be effective against tanks and other Flaks as well as paratroopers. Players can also move to the single top-mounted 7.92 mm machine gun. This gun is directed and fired with the joystick or mouse (fire with the right mouse button). The <f> key will also fire the gun.

IMPORTANT NOTE: Drive at least a short distance from your departure point before you begin firing the main guns of the Flakpanzer. Other players from your country, flying from that same airfield, will pop up on top of you as they try to take off; unfortunately, you won't be able to see them, and you can destroy them without knowing it. This is an easy way to become Persona Non Grata in your country for 24 hours.

Jeep

The jeep is equipped with one .50 caliber machine gun. The gun is aimed and fired using the joystick or the mouse (fire with right mouse button). You must move to the gun position to direct and fire the gun (<ESC + jg + ENTER>).

OTHER VEHICLE FUNCTIONS

As in aircraft, the following functions are available:

9	Turn gun camera on/off
Spacebar	Wheel brakes
1	Full view range (all objects visible)
2	Medium view range (the default view - all but most distant objects visible)
3	Short view range (objects within a few miles can be seen)
4	Combat range (only immediate objects will appear, and horizon shading is disabled)
5	Abridged range (no terrain detail whatsoever)
F1	Help key
F10	Radar screen
ESC + t[channel #]	Tune radio to a specified channel (followed by <ENTER>) (online play only - see the Radio Procedures section)

VIEWS

The following views are available in some vehicle positions; not all views are available in all positions.

Keypad - Views

8 (up arrow) - Look forward

4 (left arrow) - Look left   5 - Straight up view   6 (right arrow) - Look right

2 (down arrow) - Rear (mirror) view

Keyboard View Keys

G - Look forward

H - Look left   K - Straight up view   L - Look right

M - Rear (mirror) view

EXITING A VEHICLE

You may exit a vehicle at any time with the command keys <ESC + e> (followed by <ENTER>). You will return to the Ready Room of the airfield you are operating from any time you exit the vehicle, or if you are killed as a result of hostile action. If you managed to drive to another country, you will be returned to your country's Headquarters when you exit the vehicle, or are killed.

TROOP TRANSPORT OPERATIONS

In *Air Warrior*, airfields belonging to other countries may be captured and placed into operation under the capturing country's control. In order for a capture to take place, eight paratroops must be successfully placed at the airfield. "Virtual troopers" are provided by the host computer — actual players do not sign up for paratroop duty.

Transporting of paratroops begins in the Ready Room, with the choice of the C-47 from the Aircraft Selection Folder. The paratroops are automatically loaded onto the plane when you select the C-47. Use the Plane Setup dialogue box to specify fuel load. C-47's carry no weapons, so specifying ammo load is not necessary.

Virtual troopers hit the silk

After coordinating radio frequencies, left click on the Ready Room's Airfield door to enter the aircraft. You can now take off and fly the transport to its target airfield.

After an airfield has been prepped (see the *Air Warrior Flight Instruction Manual*), troops have to arrive in a C-47 transport plane within 30 minutes. Dropping troops requires at least 500 feet of altitude (they wisely refuse to jump, otherwise).

You, as pilot, specify when each of the paratroops is to jump. In effect, you use the intercom to order each one of your troops to hit the silk. The command key sequence is an apostrophe (for intercom access), followed by an asterisk and the command "go", followed by <ENTER>:

'*go + ENTER   Causes one paratrooper to leave the plane (non-functional below 500 feet)

Repeat this command until all eight troops have jumped. You must drop your paratroops within approximately one-half mile of the airfield for them to be able to seize it.

AIR WARRIOR OFF-LINE SOLO FLIGHTS

SOLO FLIGHTS

Solo flights enable you to check out the characteristics of *Air Warrior* aircraft, scout the facilities and terrain of *Air Warrior* airfields, and, of course, hone your skills as a pilot, all off-line (Solo flight are not available online). To take a solo flight, click on the Solo Hangar on the Main Screen.
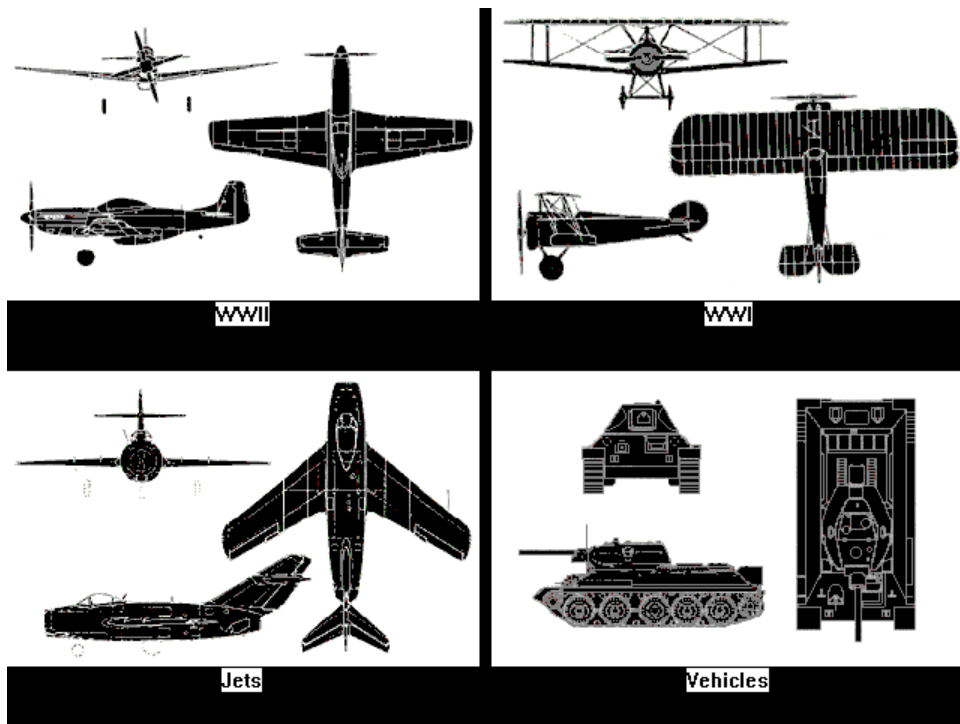
Aircraft/Vehicle Selection Display

Left clicking on the Solo Hangar will display the Aircraft/Vehicle Selection Display, with representative silhouettes of World War I and World War II aircraft, jets and vehicles. Press <ESC> if you wish to return to the Main Screen without making a selection. To choose an aircraft or vehicle, position your mouse cursor over one of the three general aircraft types, or over the vehicle section. Left click to see a graphic display of the specific aircraft or vehicles available within that category.

To select a specific aircraft or vehicle, place your cursor over the desired aircraft or vehicle, and left click once. If you decide not to make a selection, press <ESC> to return to the Main Screen.
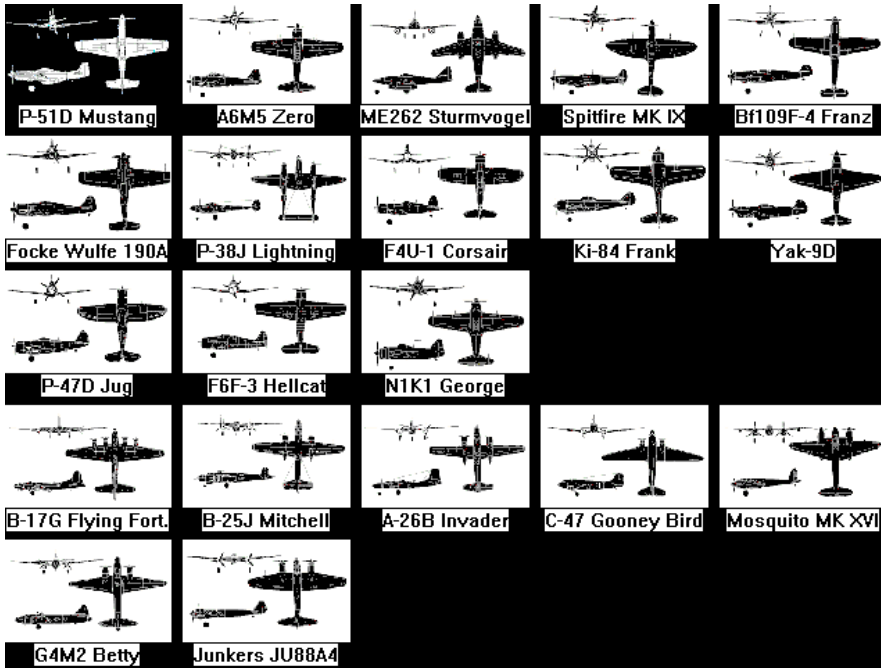
World War II Aircraft Selection Screen

The Plane Set-up Window is displayed next. This window allows you to set your fuel load, and, if appropriate, your bomb load. Additional online features that are non-functional in the off-line mode are displayed, but will be deactivated. You may click on CANCEL to select another aircraft, click on OK to accept the default values, or enter new values and click on OK to proceed.
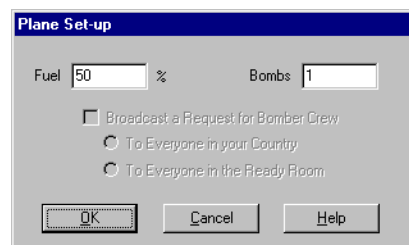
Plane Setup Window

After you make your selection, *Air Warrior* loads the specialized cockpit art for that particular aircraft or vehicle. If the artwork is not present on your system, you will receive a message saying so. You may click on CANCEL to select another aircraft, or click on OK to proceed with generic cockpit art.

The Check Flight Set-up Window appears next. From here, you may choose which of the three main airfields you wish to operate from. The default field will do nicely at first, but you will prob-ably want to use Solo Flight to become acquainted with the terrain and layout of the other *Air Warrior* airfields. The airfields

Check Flight Set-up Window

you see here will be the same airfields you encounter in online combat. Click on the desired country (A, B or C), and if you wish to fly from other than the number one airfield, place your mouse cursor in the field number entry box, highlight the existing number (1) and type in the desired airfield number.

If you are flying a plane loaded with bombs, you may have to set the Bomb Scor-ing method; this is primarily a means of accommodating your computer type, rather than choosing how well you want to bomb. Select the desired method from the drop-down list by clicking on it once. Options here are FAST, ACCURATE, or NONE.

The default setting is ACCURATE, which accommodates all 486/DX and Pentium computers; bombing results will be calculated using the built-in math coprocessor in you computer. If you have a 486/SX computer, you do not have a math coprocessor, also known as an FPU (Floating Point Unit); in this case, choose the FAST setting.   NONE, of course, means that no bombs will be loading on your aircraft.

You can also select or de-select the CONTINUOUS FLIGHT option by clicking on it; a check mark in the CONTINUOUS FLIGHT window will return you to a new plane on the runway after you land, crash or bail out during your solo flight. If CONTINUOUS FLIGHT is not selected (no check mark), you will return directly to the Main Screen after you land, crash or bail out.

Press CANCEL if you wish to return to the Main Screen. If you are satisfied with the settings in the Check Flight Set-up Window, click on OK to move to the cockpit of the aircraft or vehicle you have selected. You will be on the runway of the airfield you selected, with motor(s) off, and can begin your solo ride at any time. See Sections 3-9 for flight operation information, or Section 10 for vehicle operation information.
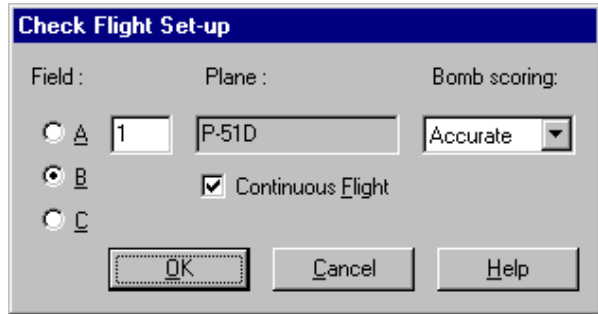
The realism, skill and other settings you selected under Pre-Flight Setup will be applied during your flight. Refer to Section 2 of this manual if you wish to change any of the settings.

To end a Solo Flight you can press <ESC + e> (followed by <ENTER>) at any time during the flight, or after you land.

All aircraft controls and instruments are active during a Solo Flight; for example, pressing <F10> will bring up your radar/map display. This display is oriented to your position; you are in the center and north is always up.

AIR WARRIOR ONLINE

Air Warrior online arenas offer a true multiplayer air combat simulator where people from all over the world compete nightly in World War II era aircraft. Although it employs rigorously accurate flight models taken from actual test flight data, *Air Warrior* is not primarily a World War II simulation. The battle being waged in *Air Warrior* is happening now. You, as a player and a pilot, are not following in the path of a hero in a long ago air struggle; rather, you are the hero of your own adventure and a participant in the adventures of many people here and now.

Online services enable people from all over North America and many other parts of the world to communicate, share information, socialize, or play games as part of a vast online community. You become part of this community by connecting, via your computer, modem and telephone line, to *Air Warrior* via an online service.

ABOUT *AIR WARRIOR* ONLINE ARENAS

When you play *Air Warrior* on an online service, the skies you've flown off-line become filled with people from all over the United States and Canada. Some are hunting alone, looking for unwary prey; some are flying as loose groups of fighters, looking for a fierce, multi-bogey air battle.

Air Warrior offers you a choice of arenas. Clicking on any of the three aircraft at the top of the Main Menu Screen will bring you to the Arena Selection Screen. You may choose from any of the available theaters, including relaxed realism theaters, where several realism features are disabled, or full realism theaters where, as the name implies, all realism features are enabled.

RELAXED VERSUS FULL REALISM

Air Warrior relaxed realism arenas do have realistic limits. Planes are subject to induced drag, changes in performance with altitude, limits on G loading, and so forth. Also, aircraft are not allowed to pull enough G's at low speed that would result in an accelerated stall. Full realism arenas enable the entire suite of realism features: blackouts, if you pull too many positive Gs, red-outs, if you pull too many negative Gs, buffeting near a stall, and accelerated stalls and uncontrolled spins, if your airspeed does not support your angle of attack.

Many players prefer relaxed realism because they want more game and less of a simulation. As one player put it, summarizing this matter of taste, "Realism is exciting but I'm not sure that it's fun."

SCENARIOS

Air Warrior supports special events played in unique terrains, referred to a Scenarios. Information on Scenario scheduling is generally posted on the Kesmai Games Player Forum. Pre-registration is sometimes required before playing. Terra Fencer is a vast, sprawling European Scenario terrain for special events. As scenario play usually involves two countries, Terra Fencer has a large Country A and B, with a small Country C in the center. Fencer Pacifica, (termed "Oceana" by many players), is a Pacific scenario terrain with three main landmasses, one for each country, carrier groups in between, and many capturable island chains.

PLANE CHOICES

All of the *Air Warrior* aircraft are available for off-line flight, but plane choices in the main arenas have certain restrictions based upon the historical record for the active theater. For example, in the European theater, only those aircraft that were present in that theater are available; none of the Japanese aircraft, or the American F4U Corsair, will appear. Similarly, the Spitfire is not available in the Pacific. Pilots of all three countries have access to all the aircraft available in a theater.

AIRFIELDS

Although you will find the same airfields in the main arena as are available during off-line Solo Flights, there are additional distinctions between the fields that apply only during online play.

Main Fields - Original Terrains

In online play, the main airfields (A:1, B:1, C:1 in Europe; A:14, B:14, C:14 in the Pacific) are difficult to destroy by bombing, and cannot be captured. The main airfields' anti-aircraft batteries and control towers, which house the country's radar, can be destroyed, but other main airfield facilities cannot be damaged.

Main Fields - Expanded Terrains

There is little meaningful distinction in the expanded terrains between main and secondary airfields, except that main airfields are farthest from the action and are more heavily protected by anti-aircraft batteries. These are the A:81, B:81 and C:81 fields in Europe, and the A:61, B:61 and C:61 fields in the Pacific.

Sovereign Fields

These are owned by a country and cannot be captured, but they can be damaged or knocked out of action due to bombing. In original Europe these are the X:2, X:3, and X:21 airfields, where X = the affiliated country. In original Pacific they are the X:19 fields plus the aircraft carriers (X:12 and X:13)

In expanded Europe these are the X:78-79, and X:82-85 fields; in the expanded Pacific they are the X:62 and X:63 fields, and the X:67-69 aircraft carriers.

Capturable Airfields

There is one group of airfields in each theater than can be captured by any country. These are the N:4, N:5, N:6, and N:11 fields in original Europe and the N:15 and N:16 fields in the original Pacific. The N:86-88 fields can be captured in expanded Europe, along with the N:64-72 fields in the expanded Pacific

Whereas each country has its main airfield and a group of sovereign airfields, there is no such duplication among capturable fields. For example, there are three number 2 airfields in Europe — one for each country — but only one number 4 field.

In the original European theater, three of the capturable airfields are assigned to an owner. A-land owns field 6, B-land has field 5, and field 4 initially belongs to C-land. This is why you will hear people refer to N:6 as A:6, regardless of who owns it. Field N:11 begins as being completely neutral. In the expanded European theater, capturable fields are all initially neutral.

Similarly, capturable Pacific airfields in both original and expanded versions begin as neutral facilities, thought their prized central location means that they will change hands often in the course of conflict.

Vehicle Garages

In original Europe, each country has one sovereign vehicle garage. It's listed as that country's number 10 airfield, even though aircraft cannot take off from it. Vehicles are available at all airfields, including aircraft carriers, although you can't drive very far on a CV. The three other vehicle garages in Europe ("fields" 7,8, and 9) start off as neutral and capturable.

The original Pacific has only two garages. They are "fields" 17 and 18; both are on the Atoll and, like all Atoll facilities, start out neutral and capturable. Expanded Europe has no sovereign vehicle garages. It does, however, have three capturable garages: N:89-91. The expanded Pacific has no vehicle garages of any kind.

PRODUCTION FACILITIES

In off-line terrain, *Air Warrior's* factories and refineries are just features on the land-scape. Online, in the main arena, however, a production and supply system operates that can be disrupted by bombing operations.

ANTI-AIRCRAFT BATTERIES

Anti-Aircraft Artillery, referred to as Triple A, AAA or, more commonly, as ack, is controlled by the *Air Warrior* host computer and can be very deadly. Acks appear as small black turrets near airfields and certain production facilities.

There are also a few acks on mountain tops — the dreaded mountain acks. These installations have long range, but are quite vulnerable to gunfire.

Various other ground structures in *Air Warrior*, such as bridges and capital cities, can be destroyed by bombs, but their destruction is of little strategic importance in the game.

ENTERING COMMAND LINES MANUALLY

In addition to the movement and command functions provided by *Air Warrior's* graphical interface, written Command Lines are also supported. In some cases, players may find the written Command Lines to be a shortcut to reaching their intended function or destination. A complete listing of Command Lines is found in Appendix B, and new players are strongly advised to review them and become acquainted with their functionality.

For example, typing "**/goto** [n]" in the Officers Club will take a player directly to the Ready Room at airfield [n]. With *Air Warrior's* graphical interface, the player would go first to the Headquarters Room, select the Situation Map, and then select an airfield.

In the following sections, applicable Command Lines are listed at the end of each room description. To use a Command Line, first type it into the Outgoing Message Area at the bottom of the game screen, and then press the <ENTER> key to execute the command.

All manually entered host commands begin with a slash (/) followed by the command. *Air Warrior* features pattern matching text entry, so in most cases you will not need to type in the entire command. In most cases, an abbreviation consisting of the first three letters of the command will suffice.

SCORING

The *Air Warrior* host assigns scores for accomplishments in fighter combat and bombing. Scores are tabulated in the main arena and are reset every three weeks. Scores can be viewed by looking at the Kill Board, or the Player Score entry in the Player List pop-up menu (see pgs. 13.19 - 13.20). Command Lines can be used also to view scores; see Appendix B.

Individual Scoring

Scoring is weighted to reward pilots who survive their missions. If you land after shooting down another aircraft, for example, you will receive full credit for the kill. If you get shot down, you will get only 25% of the points you would have earned had you survived.

Bailing out over friendly territory is worth one third credit, and ditching your plane (landing on something other than the runway) in friendly territory is worth half credit. Also, you'll get more points per kill if you survived your previous mission. This bonus grows as the number of missions you survive increases. Finally, you gain more points for kills over enemy territory because usually they're more difficult than those made close to home.

Bomber scoring follows the same pattern of credit based on how your mission ends, but the survival streak bonus does not apply. Bombing missions naturally take place over enemy territory, so there is no bonus for strikes over hostile lands.

Squadron and Country Scores

A squadron's score is simply the cumulative score of all members of a squadron. Similarly, the score for a country is the sum of all its pilots' scores.

DUELING

Other *Air Warrior* players may be challenged to a duel using the following Command Lines (followed by <ENTER>). These commands are valid on the ground only:

/duel [ID#]	Ask a player to duel
/accept [ID#]	Accept the invitation
/deny [ID#]	Decline the challenge

You can challenge any player to a duel by issuing the dueling command. Other players will only receive the invitation when not in flight. When offering to duel another player, it's best to do so from an Officers Club so that your opponent can meet with you and arrange the terms of the duel. Duels are not limited to just two players; any number can join in as long as they've all accepted the dueling invitation from the same person.

Dueling mode shares the same arena with the regular players and you will hear Channel 1 radio traffic from the arena while you're dueling. The difference is, you won't see the regular players and they won't see the duelists. Also, duelists are not limited to the same theater and airplanes as the main arena players.

Thus, for example, Zeros can duel Spitfires although both normally don't fly in the same theater. Damage inflicted on facilities in the main arena does apply to dueling mode, however. If A:3 has bad fuel in the regular game, it will have bad fuel in dueling mode as well.

Radio communication works differently in dueling mode. When you use the apostrophe to communicate over Channel 2, your duel opponent will hear it, as well as what you say over Channel 1. Duelists, unlike regular arena players, generally don't have a country to communicate with. If you fly a duel with several players and need to communicate with the pilots on your side without your opponents overhearing, you'll have to tune your radio to a channel other than 1 or 2, and have your other comrades tune to the same channel.

When you land and exit your airplane, crash, bail out, or get shot down, you leave dueling mode. If you wish to continue the duel, you have to go through the invitation/acceptance process from the beginning.

The results of duels apply to your arena score, and the rules for country defection also apply to duels. In other words, if you defected as part of your duel, you may not return to your original country affiliation for 24 hours.

If you receive an unexpected invitation to duel, check the Roster and find out where the player issuing the challenge is located. Usually it's a good idea to meet up with your prospective dueling partner in an Officers Club before accepting the duel. Sometimes people issue dueling invitations just to get your attention, or you may find that the sort of duel the challenger wants does not appeal to you.

If you've accepted an invitation to duel, and then decide not to, you must remember to land and exit your plane before returning to arena play; otherwise, you will remain in dueling mode, and everyone else will be invisible to you (and you to them).

AIR WARRIOR **SQUADRONS**

For many *Air Warrior* players, squadrons are an essential part of the game. In some cases they define a theme and a style of play for a group of pilots, but generally an *Air Warrior* squadron is just a loose collection of people who enjoy flying together.

Most squadrons fly together one night of the week. This works well for people who want to budget their playing time, and it ensures that they will have people to fly with when they play.

Sample Squadron Insignia

There are no easily defined rules for joining squadrons, because each squad has its own attitude toward recruitment. Some will recruit anyone and everyone while others are quite selective in whom they'll allow in. One thing is certain: you cannot play *Air Warrior* for very long without receiving an invitation from at least one squadron.

Forming a Squadron

Any player in *Air Warrior* who is not currently enrolled in a squadron may form a squadron of his own; when you form a squadron, you become the squadron leader by default (leadership can be transferred later). To form a squadron, you must issue an invitation to another player in the form:

/invite [ID#]   Ask a player to join your squadron

Both players must be in the same room when the invitation is issued and must be affiliated with the same country. The invited player may respond with:

/accept [ID#]   Accept an invitation to join from player [ID#]

/deny [ID#]   Decline an invitation to join from player [ID#]

If the invitation is accepted, a message will appear on your incoming message screen stating that you have just formed a squadron, and with a reminder to name your squadron. You may name your squadron with the Command Line:

/rename [new name]   Enter or change squadron name

Other players may ask to join your squadron with this Command Line:

/ask [ID#]   Request to join squadron of squadron leader [ID#]

Squadron leaders may accept or decline the request using the Command Lines:

/accept [ID#]   Accept a request to join from player [ID#]

/deny [ID#]   Decline a request to join from player [ID#]

Other squadron Command Lines that are available in *Air Warrior* are:

/team [ID#]   List Roster for squadron led by player [ID#]

/withdraw   Leave your current squadron

The following Command Lines are reserved for squadron leaders only:

/rename [new name]   Enter or change squadron name

/expel [ID#]   Drop player [ID#] from your squadron

/accept [ID#]   Accept an invitation to join from player [ID#]

/disband   Disband a squadron (expel all members first)

/transfer [ID#]   Transfer leadership to squadron member [ID#]

OTHER CONSIDERATIONS OF ONLINE PLAY

Friendly Fire

Your bullets can damage friendly aircraft. If you shoot down two friendly planes within 24 hours your country will no longer allow you to carry live ammunition. Your status is reduced to Persona Non Grata (PNG). You can either defect to another country or return after 24 hours and your PNG status will be reset.

In the last Pac campaign, I'm coming in to 19 with three kills. My Ki is smoking and I'm on fumes. Gear down, speed 100kts and I'm 100ft off of the threshold. "Bonk!" I check rear view and there is a Bz 38 hosing me.

I died, checked my score and popped back out at 14 to hunt one of my own countrymen. I asked him why he shot me and I get the message XXXX crashed. I popped back into HQ and asked him why the hell he shot me down????

He apologized 5 or six times the first minute. It seems that he had just switched countries, and when he saw the "red Ki" fill his sights ... it was reflex. He said he would make it up to me etc, and told me that he augered when he realized what he did. We both had a good laugh about it.....cause.....it can happen to anybody!

- Specter Rear View

Distance Distortion

I'm adding a message to my rear view - WARNING: Objects in mirror are closer than they appear.

- Ironman

Due to the nature of network play, distance information in your rear view is not always accurate. Depending upon the speed your aircraft and a pursuing aircraft are traveling, the reported distance will be longer than it really is. So, at high speed, you should subtract 200-400 yards from the distance you're seeing on your computer.

Network Delay Effects

When many pilots are flying simultaneously, the online network has to distribute copious quantities of data over the phone lines. This can delay the communications between your computer and the host.

One result is a phenomenon known as "warping," where planes seem to change positions suddenly. Hitting warping targets is difficult and you will have to apply, to a greater degree than normal, the principles of deflection shooting.

When your target begins to freeze and then warp to another position, keep in mind that the target itself is still flying normally, even though it appears erratic to you. Try to visualize the target's true flight path and anticipate its position when it stops warping.

To evaluate the status of your network connection while flying, type <ESC + d> (followed by <ENTER>). If the delay is 2 or greater, chances are that you will be seeing warps.

AIR WARRIOR TRAINING ACADEMY (AWTA)

For formal air combat instruction, the *Air Warrior Training Academy* offers a comprehensive, seven week online course, complete with a training manual and detailed maps. *AWTA* is sold as a flat rate package that includes all training materials and 21 hours of online time in the *AWTA* arena.

Cadets also receive free access to the *AWTA* software library where they can upload films of their exercises for critique by their instructors, or download training films and Help files. Contact Kesmai Corp. via e-mail at moggy @ kesmai.com for further information and enrollment details.

POLICIES

Computer program hackers often create so-called "cheats" for computer games that provide functions and advantages not intended by game designers. For most games, all cheats serve to do is reduce the challenge of the game for individuals who choose to employ the cheat.

Air Warrior, however, is a multiplayer game. If one person were to hack the program in a manner that gave him an unfair advantage in network play, it could ruin the game for dozens of other players. Any player found to be using a version of *Air Warrior* that has been altered to enhance any manner of aircraft performance will be banned permanently from network play.

In a competitive game like *Air Warrior*, emotions can run high at times. Nonetheless, players who direct obscene, harassing, or abusive statements at other players will receive a warning to stop such behavior. A player, once warned, may be banned from network *Air Warrior* play if he repeats the offense.

HOW TO PLAY *AIR WARRIOR*

This section describes the graphical environment of *Air Warrior*, and explains how to play the game through the use of graphical interface. Key elements of the graphical interface include Tooltips, pop-up menus and The Guide. These are explained in the Introduction to this manual; essentially, they allow you to perform most important game activities using standard point and click mouse movements. In previous versions of *Air Warrior*, all game activity (outside of using flight control devices) was initiated by entering Command Lines from the keyboard.

While *Air Warrior* continues to support all of these Command Lines (see Appendix B), the player should find that using the point and click convenience of the graphical inter-

Flying Fortresses take to the air.

face will be far simpler and easier. However, new players are still encouraged to become familiar with the capabilities of *Air Warrior* Command Lines (see page 13.4 for information on entering Command Lines); some game actions, like dueling, can be initiated only via Command Lines. Command Line summaries are included with the explanatory text for each of the major rooms described in this manual.

ENTERING THE GAME

After logging on to *Air Warrior* through your online service provider, your first stop will be the Main Airfield, also referred to as the Main Screen, shown on page 13.12. The Setup, Film and Solo features of this screen are described in Sections 2, 8 and 12, respectively. *Air Warrior* offers you several arenas of online play. To enter an arena, left click on any of the three aircraft at the top of the Main Menu screen; this brings you to the Arena Selection screen.

The Main Airfield

While in the Arena Selection Screen, a right-click pop-up is available; REFRESH updates information on the screen, and RESET COLUMN WIDTHS allows you to move the grid lines and format the screen to your taste. Highlight the arena you want to enter, and then left click on the GO TO ARENA button (you can also double left click on the arena name). You will go directly to Officers Club #1 for that arena.

After you've played the game for a while and made the acquaintance of a few other players, you might want to locate a friend before you enter an arena. To do so, left click once on the FIND USER button; enter the player's ID number in the Find User Window and left click the FIND button to determine his or her location.
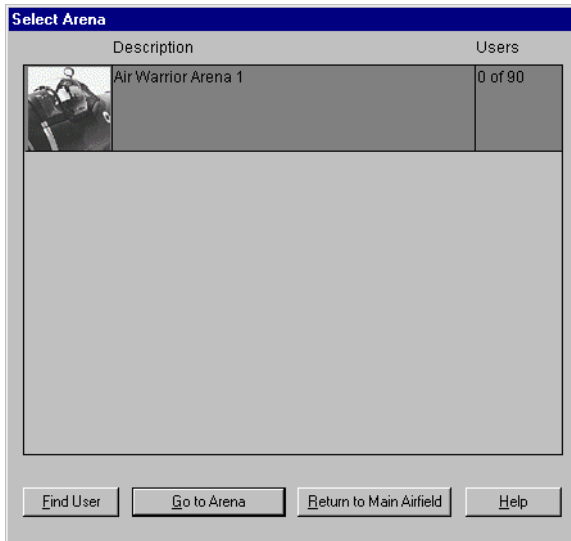
Select Arena Window

If you don't want to enter any of the *Air Warrior* arenas at this time, left click once on the RETURN TO MAIN AIRFIELD button.

GENERAL ROOM CHARAC-TERISTICS

Once you are in the arena,

Arena Select Pop-up

you will spend most of your non-combat time in the various rooms which comprise the pilot's environment. These are:

The Officers Club: You will always go to the Officers Club when entering an arena. This is the "conference area" for the arena, where players from all three countries can meet, talk, exchange ideas and gather information about each other, and about activities elsewhere in the arena. You can view the Player Roster, view and change your Player Information and change countries here, too. Several adjoining Officers Club rooms are available from Officers Club #1, for "private conferences."

Headquarters: Each country has its own Headquarters Room, which is accessed from the Officers Club; here, countrymen can discuss strategies, plan combat air patrols, and form squadrons. Players can check the Kill Board for their own score,
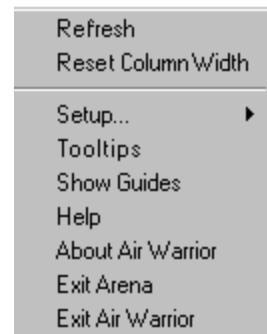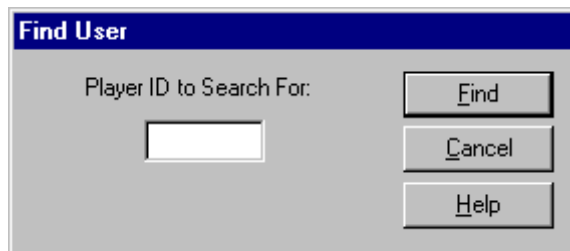
Find User Window

the scores of their countrymen, and the cumulative scores of squadrons; both fighter and bomber information is posted. Each HQ also contains a Situation Map, which displays the current wartime situation, and allows players to select an airfield from which to fly.

Ready Room: Selecting an airfield on the Situation Map at HQ places you in the Ready Room for that airfield. In the Ready Room, you may confer with other players in the Ready Room, choose an aircraft or other combat vehicle and begin combat, assemble a bomber or vehicle crew, or return to HQ. The Ready Room has a Roster and Situation Map available. Each Ready Room has an adjoining Radio Room.

Radio Room: In the Radio Room, you may tune the airfield's radio and make
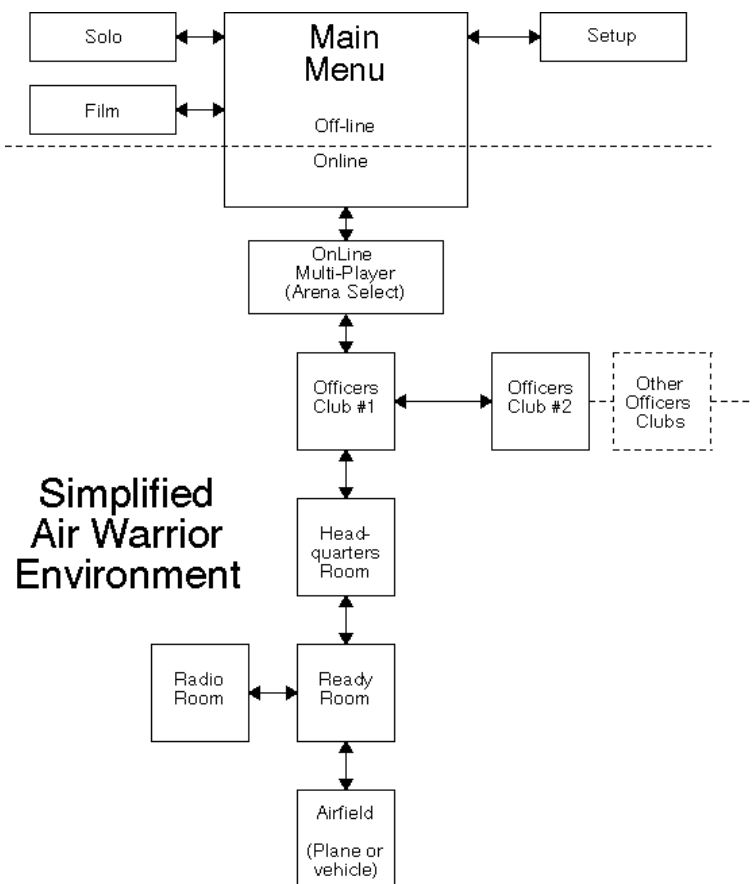
radio announcements to, and communicate with, players in your country's aircraft and vehicles, and in other airfield Radio Rooms. You may also make radio announcements to, and communicate with, any players in the arena (regardless of country) whose radios are tuned to Channel 1. Leaving the Radio Room returns you to the Ready Room.

There are a number of characteristics that are common to most rooms in *Air Warrior*. These include:

Rosters: Player Rosters are present in the Officers Club, HQ and Ready Rooms; each Roster Board is a listing of who is present in that entire arena environment, along with pertinent information about the player (handle, Player ID, etc.). All Rosters show player information for all players in the arena. Players are grouped by their country affiliation.

Loudspeakers: Officers Clubs and Headquarters Rooms are equipped with loudspeakers. The text of announcements made by the host computer will appear near the loudspeaker graphic, generally concerning important game developments (e.g., "Airfield A:81 has been destroyed"). Announcement text is seen by everyone in the room. Training instructors may also issue announcements from the loudspeaker.

Doors: Each room is equipped with doors bearing labels for their function; clicking on the door will take you to the room indicated. EXIT signs will take you back to the room you previously occupied.

Player List: In all rooms, a Player ID display area appears to the right of the room graphics. This Player List shows the handle, 5 character Player ID, and the current country affiliation for all players in the room. Moving names from the Player List to the Group List enables you to have private conversation with an individual, or Group of individuals

Group List: At the bottom right-hand corner of each screen is a Group List area, which designates groups of people in a room that you can communicate with apart from the general population The default group ALL includes everyone in the room. Other groups can be assembled as desired (see below).

Outgoing   Text Buffer   Player List Area   Group List
Message Area   Area   Area

Officers Club, full screen view
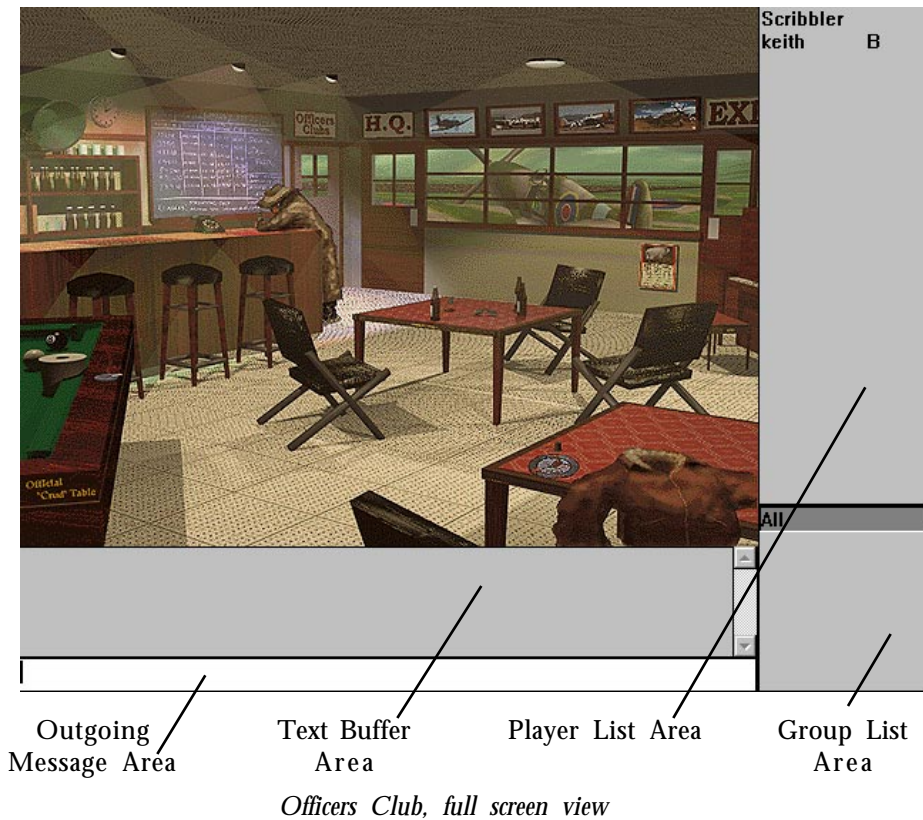
Text Areas: Immediately below the graphic for each room are two text display areas; a multi-line Text Buffer area for incoming messages, and a single-line Outgoing Message area where you enter your outgoing conversation and commands. The Text Buffer area is equipped with a scrolling tool which allows you to scroll back and review the last 500 lines of text.

In addition, text can be captured and stored for later off-line reference, and player files can be uploaded to the host computer via the Text Buffer area (see below). The Text Buffer area can be switched to fill the entire screen.

The Guide: The Guide a series of pop-up text messages that talks you through the *Air Warrior* interface. With The Guide feature enabled, a pop-up display appears each time you enter a new environment, describing local features and the actions you can perform there. You can turn The Guide on or off at any time, except in-flight.

CONVERSING IN THE *AIR WARRIOR* ENVIRONMENT

Flexible conversations are a mainstay of the *Air Warrior* environment, and many of the same conventions are used as in previous versions of *Air Warrior*. Upon entering any room, you are immediately placed in communication with all present, via the ALL group in the Group List, located in the lower right side of the screen. "Talk" to other players by composing your message in the outgoing message area, and then pressing <ENTER> to make yourself heard.

With the default group "ALL" active, your message will appear in the incoming message area of all the other players in the room, identified by your handle. For example:

Blue Baron *\DQ/*to all: So, what's it to ya?

In a room with only two or three other players, this mode of conversation is fine. Remember, talking to the ALL group is the same as talking out loud to everyone in the room. If the room gets crowded, you may quickly become a pain in the neck if you continue to hold forth to everyone in the room on non-relevant topics. In some instances, you will want to "keep your voice down" and converse privately with just a few people at a time. You can do this by choosing an individual, or a group of individuals, to converse with, using the Player List and the Group List features of the screen.

To speak privately to a player in the room, click on the player's name on the Player List with your left mouse button. Then, click the right mouse button to access the Player List pop-up menu; select GROUP OPS, and then CREATE GROUP. Alternatively, you can select the player's name with your left mouse button, hold the button down, and drag the player's name to the Group List below. Either way, the player's name on the private list will be automatically highlighted. Any messages you type and send while his entry is highlighted, will go to that player only.

To resume conversation with everyone on the room, simply click on and highlight the ALL group. If you wish to return to your private conversation, go to the Group List and highlight the name of the player you wish to communicate covertly with; once again, your messages will go to that player only.

On occasion, you might want to create a group of several players for the purpose of conducting private conversations. To do so, while holding down the <CTRL> key, left click on each of the names on the player list you want to add to the group. Then, using your right mouse button, select GROUP OPS and CREATE GROUP. An alternate method is to left click on and highlight the players you want to have in your private group, and then simply hold down your left mouse button and drag them all to the Group List area.

Player Information
Player Score

Group Ops   ▶

Sort...   ▶

Setup...   ▶
Show Guides
Help
About Air Warrior
Exit Arena
Exit Air Warrior
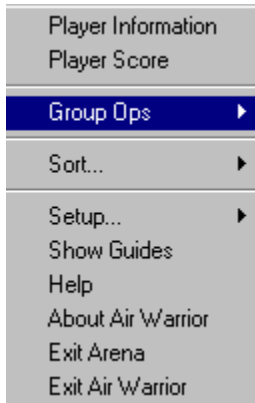
Player List Pop-up

You'll then see a new entry in the private group area of the player list. e.g., Group 1. To speak to everybody in that group, click on it. All messages you send while the group is highlighted will go to the group members only. If you designate numerous private groups or individuals, a scroll tool will appear in the Group List if the number of group entries exceeds the display area.

Whenever you're sending a private message, be it to a designated group or individual, your message will be formatted like this:

Blue Baron [private]: So, what's it to ya?

By default any private group you create is temporary, meaning that the group designation disappears once you leave the room. You may wish to create permanent groups, particularly if you belong to a squadron. That way, you always have the option of speaking privately with only the members of your squadron who are in the room with you, even if you're in a public area, such as the Officers Club.

To make a private group permanent, highlight the group with your left mouse button. Then click your right mouse button. You'll see the menu item, TEMPORARY GROUP, with a check mark in front of it. Select it, and the check mark disappears, thus making the highlighted group permanent.

To delete a group, highlight it with your left mouse button, select GROUP OPS from the right mouse button menu, and click DELETE GROUP. To add a player to an existing private group, click on the group you wish to add players to. Then, holding down your <CTRL> key, click on the player(s) you wish to add.

You can also click on a private group, and bring up the right mouse button menu. Select GROUP INFO, click ADD, and enter the Custom Player IDs (CPIDs) of the player(s) you wish to add to your private group. Using this method also allows you to add players to your private group who may not be online at the time. You can also remove players from private groups using the GROUP INFO feature.

You may also choose the SORT command from on the Player List pop-up menu. This provides you the convenience of sorting the display of player names in the Player List by Handle, by ID number or by Country. Scrolling tools will appear if the entries in the Player List exceed the window size.

You may also check on PLAYER INFORMATION or
PLAYER SCORE from the Player List pop-up, by left
clicking on the appropriate command. The Player Information
Window shows all pertinent information about a selected
player; the Player Score Window shows the selected player's
scores in several categories

You may also view a player's score by left clicking on the
SCORE button on the Player Information Window.

Note that in the above conversation examples, the various
players have incorporated a squadron abbreviation into their
handles ("DQ"), which have been further modified by addi-
tional internal squadron designators ("*\DQ/*"). Such conven-
tions are part of the fun of squadrons, and their design and implementation is left up
entirely to the players themselves.

If someone addresses a message to you as part of a group, a new group listing will
automatically appear in your Group List area.

Names are listed in alphabetical order. Click on the new group name to converse with
those in this group. You may add other players to an existing group by holding down
the <CTRL> key and clicking on the names in the Player List.

Group Area Pop-up

USING THE TEXT BUFFER

All conversation and messages that are displayed in the Text
Buffer area are saved (up to 500 lines worth) so that you can
review them if you want. Use the scroll bar tools located at
the right side of the Text Buffer area to scroll forward and backward through the
retained text.
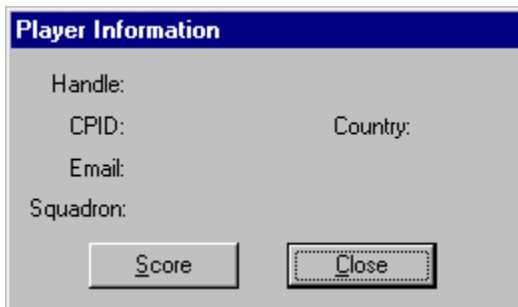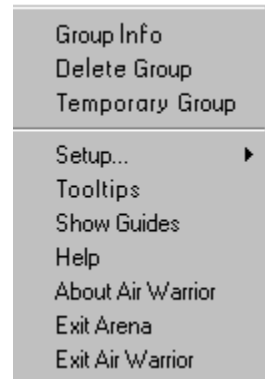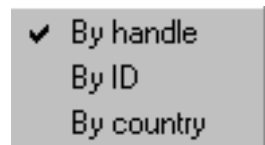
Sort Names Pop-up

You may choose to clear the contents of
the Text Buffer area each time you
change rooms. On any game screen,
right click to access the pop-up menu; left
click on SETUP and then left click on
USER PREFERENCES. At the User
Preferences Window, select the INTER-
FACE tab, and left click on CLEAR
TEXT BUFFER BETWEEN ROOMS;

Player Information Window

a check mark will appear, indicating this feature is now active. All text in the Text Buffer area will now be cleared each time you move from one room to another. To disable the feature, return to the User Preferences Window and left click on the feature setting to remove the check mark.

Click on TOGGLE TEXT BUFFER SIZE to switch the text buffer to a full screen display; right click and select this command again to return to normal size.

Player Score

CPID:

Most recent kills:
Who last killed you: ☑ Show Score After Flight

	Sorties		Victories		Score	
	Fighter	Bomber	Fighter	Bomber	Fighter	Bomber
Landed	5	0	0	0	0	0
Ditched	0	0	0	0	0	0
Bailed	2	0	0	0	0	0
Crashed	3	0	0	0	0	0

Last Mission Score: 0
Total Fighter Score: 0
Total Bomber Score: 0

Close   Help

Player Score Window

View of the Officers Club, the main conference room

CAPTURING MESSAGE TEXT

Messages appearing in the incoming message display may be reviewed online, or captured and saved to your hard disk, for review later. With the mouse cursor positioned over the Incoming Message area, click the right mouse button for a pop-up menu; use the left mouse button to select CAPTURE. A file box appears next, prompting you to enter a directory path and file name for the capture file, such as C:\AIRWAR\TEXTFILE.001.

Click CANCEL to end the operation without capturing text. If you click OK, a check mark will be placed next to the CAPTURE menu entry, indicating that the Capture function is active. All subsequent messages will be recorded in the specified file. To stop capturing text, right click on the Incoming Message area, and left click on CAPTURE in the pop-up menu to remove the check mark and de-select it. You may turn the Capture feature on and off any number of times during a game; when turned on again, you will be prompted for a file name, and have the option of overwriting or appending additional text to an existing file.

UPLOADING USER FILES TO THE HOST

You may upload standard ASCII files to the *Air Warrior* host; files may be no larger than 2kB. With the mouse cursor positioned over the Incoming Message area, click the right mouse button for a pop-up menu; use the left mouse button to select UPLOAD. A file box appears next, prompting you to enter a directory path and file name for the file you want to upload. Click OK to upload the file, or CANCEL to end the operation without uploading.

Toggle Text Buffer Size
Upload...
Capture...

Setup...   ▶
Show Guides
Help
About Air Warrior
Exit Arena
Exit Air Warrior
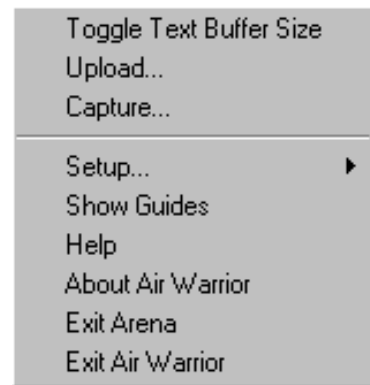
Text Buffer Pop-up

IN THE OFFICERS CLUB

As described earlier, the Officers Club is your first stop on entering an arena. General aspects (Player List, Group List, Message areas, Conversation, Roster, Doors) of the room have been outlined above. From the Officers Club, you may view the Roster, move to another Officers Club room, change countries, move to your country's Headquarters, view or change your Player Information, or return to the Arena Selection Screen. The Officers Club is open to all players from all countries.

Entering/Changing User Information

The first time you enter an Officers Club, you will most likely want to change or add to your User Information; see Section 2 for more information on selecting a handle and Custom Player Identification (CPID) number. Use the Tooltip over the flight jacket on the table to select the Set User Information Window. You may enter a unique 5 character alpha-numeric CPID, as well as a "handle" or pseudonym for game play;

Officers Club

Your CPID, or Player ID, may contain any combination of letters or numbers. Remember that this Player ID will be displayed as your "call sign" or identifier during radio and intercom conversations; most players relate it to their handle.

When you enter the game, the host computer will generate a random CPID for you. If you want to use your own CPID, enter it into the Player ID field. Do not press the <ENTER> key; left click on either of the following buttons:
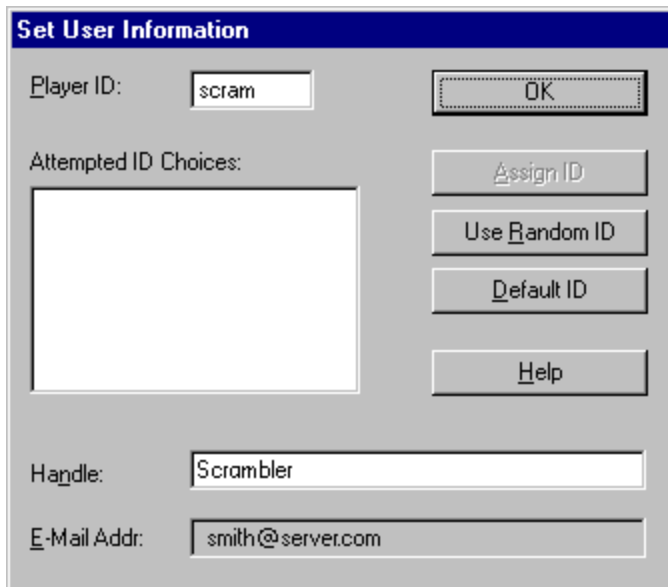
    OK: Click on OK if you wish to make no other entries or

changes in the Set User Information Window; you will return to the Officers Club.

ASSIGN ID: Click on this button if you wish the Set User Information Window to remain.

In both cases, the host computer will check to see if the new CPID you entered is already in use; if not, the new CPID will be accepted, and the window will either close, or remain, depending on which of the above buttons is selected.

If the Player ID is already in use, a message will appear indicating an unsuccessful entry, and the unsuccessful name will be automatically placed into the Attempted ID Choices window. You may now enter a new Player ID, and click OK or ASSIGN ID as before. You may repeat this process until you enter a successful Player ID.

Set User Information Window

Click on the USE RANDOM ID button if you would like the system to assign another random player ID; the random ID will be assigned, registered and entered into your Player ID field automatically. You may choose OK or move on to another field with no further input.

If, after entering a new Player ID, you change you mind and want to return to a Player ID you had before you entered the change, you can click on the DEFAULT ID button to restore your previous Player ID.

Note: it is possible that in the time between changing your original Player ID

and clicking the DEFAULT ID button, another player may have grabbed your old Player ID number, as the instant you change your Player ID, the old Player ID becomes available. In this case, you won't get your old Player ID back.

Use the <TAB> key or the mouse to move the cursor to the Handle field. The host computer will have assigned you the default handle "New User". You may accept this handle and enter the game with it if you like. If you want to use your own handle, or game playing pseudonym, enter it in the Handle field.

This entry may be up to 32 characters long, and may be a combination of letters and numbers. There is no checking for uniqueness among handles, so it is possible to meet another player using the same handle as yours. You may change your handle at any time.

The E-MAIL ADDR. field is filled in automatically by the computer, using your online service e-mail address. Return to the Officers Club by clicking on the OK button, or pressing the <ENTER> key.

Using the Roster

To view the Roster, left click on the chalkboard area of the graphic screen in the Officers Club, Headquarters or Ready Room. On the Roster, you may view listings of all players in the arena, sorted by country. The Roster displays each player's handle, Player ID number, country affiliation, current location, and currently selected aircraft or vehicle. If you leave the Roster display on the screen for a while, you may wish to press the REFRESH button; doing so will update the Roster display with any departures or arrivals since you opened it (or last refreshed it). Scroll tools are provided if the contents of the Roster exceed the display area.

Using the Loudspeaker

A loudspeaker graphic is provided. Important announcements made by the host computer concerning game developments (e.g., "Airfield A:81 has been destroyed") will be displayed near the loudspeaker. All Officers Clubs feature a loudspeaker, and display the text of announcements made by the host
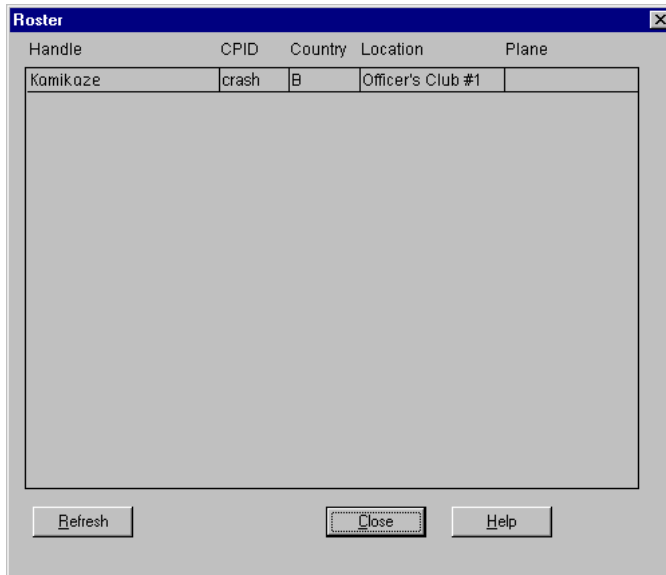
Roster Window

computer near the loudspeaker graphic. Loudspeaker announcements are seen by everyone in the room. Training announcements also appear here.

Changing Countries (Spy)

A Spy (a man in a trench coat with dark glasses) is present in every Officers Club. Left click on the spy to reveal a pop-up menu with entries to change your country affiliation (A or C, for example, if you are currently a "B"), or click CANCEL to return to the Officers Club without changing countries. Once you change country affiliation, you must retain that affiliation for a minimum of 24 hours. After 24 hours have passed, you may change again.

Other Officers Club Rooms

Air Warrior provides several adjoining Officers Club rooms in each arena; when entering the arena, you are placed in Officers Club #1. At times, OC #1 can become crowded, and "noisy" if lots of people are talking "out loud" (to the ALL group). In this case, you and your friends may wish to move to an empty, or less populated, Officers Club room to carry on a conversation. You may do so by clicking on the door labeled OFFICERS CLUBS; this will bring up a pop-up menu displaying a list of Officers Club rooms. Left click on

the Officers Club room you want to move to. The number of names on the Player List will give you a quick idea of the new room's population; if you need to keep looking for an unoccupied Officers Club, clicking on the door again and select another room.
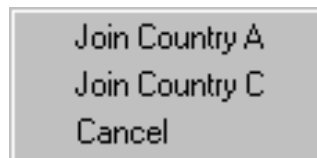
Change Country Pop-Up

Headquarters Door

You may proceed to the Headquarters Room for your country by clicking on the HQ door. The Headquarters door leads to the HQ for your country only; to go to the HQ of another country, you must change country affiliation via the Spy (see above).

Exit Door

You may return to the Main Airfield by left clicking on the EXIT door.
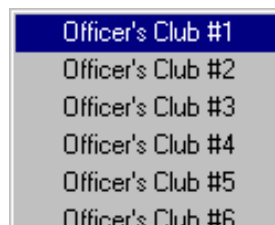
Change Officer Club Pop-Up

General Comments

Remember that players from all three countries are present in the Officers Club, so if you possess "strategic information," be aware of the country affiliation of those you are talking with before you discuss it. As in all *Air Warrior* environments, you are expected to behave in the best spirit of gaming; abusive, harassing or obscene remarks are not acceptable.

Like all *Air Warrior* rooms, the Officers Club features a right click pop-up menu that offers immediate access to commonly used activities.

Officers Club Command Lines

In addition to the movement and command functions provided by *Air Warrior's* graphical interface, written Command Lines are also supported. The following commands may be used in the Officers Club by typing them into the Outgoing Message area and pressing the <ENTER> key to execute the command:

Command   **Action**

Command	Description
/goto [n]	Move to Ready Room at airfield #n
/goto hq	Move to affiliated country Headquarters Room
/hq	Move to affiliated country Headquarters Room
/oc [n]	Move player to Officer's Club #n
/gen [n]	Move player to Officer's Club #n
/roster	Display HQ Roster
/exit	Move player to Arena Selection Screen
/arena	Move player to Arena Selection Screen
/move [n]	Move player to arena #n
/score [ID#]	Display score info on specified player
/who [ID#]	Display Roster info on specified player
/country	Display your country affiliation
/country [A,B,C]	Change affiliation to specified country (subject to 24 hour allegiance rule) & move player to Officers Club
/handle	Display your current handle
/handle [new handle]	Change old handle to new handle (32 char. max.)
/duel [ID#]	Challenge player [ID#] to a duel
/accept [ID#]	Accept challenge from player [ID#]
/deny [ID#]	Decline challenge from player [ID#]

Toggle Text Window Size

Setup...   ▶
Show Guides
Help
About Air Warrior
Exit Arena
Exit Air Warrior

*Officer Club
Pop-Up*

IN THE HEADQUARTERS ROOM

As described earlier, one Headquarters Room is accessible from the Officers Club for each country. General aspects (Player List, Group List, Message areas, Conversation, Roster, Doors) of the room have been outlined above. From the Headquarters Room, you may view the Roster, view the Kill/Strike Board, view the Situation Map or return to the Officers Club.

Headquarters Room

Using the Roster

The Roster in the HQ functions exactly like the Roster in the Officers Club, displaying player information on everyone in the arena, grouped by their country affiliation. Left click on the chalkboard area in the graphic to display the Roster.

Loudspeaker

Headquarters Rooms display the text of announcements made by the host computer near the loudspeaker graphic, generally concerning important game developments (e.g., "Airfield A:81 has been destroyed"). Announcement text is seen by everyone in the room. Training announcements also appear here.

Situation Map

A Situation Map, held down on the table top by four coffee mugs, is available to all players in HQ. Left click on the table top map graphic to view the Situation Map. The map displays airfields for all three countries; while all airfields are labelled with their number (e.g., A:83), airfield status information is available only for airfields of the HQ country.
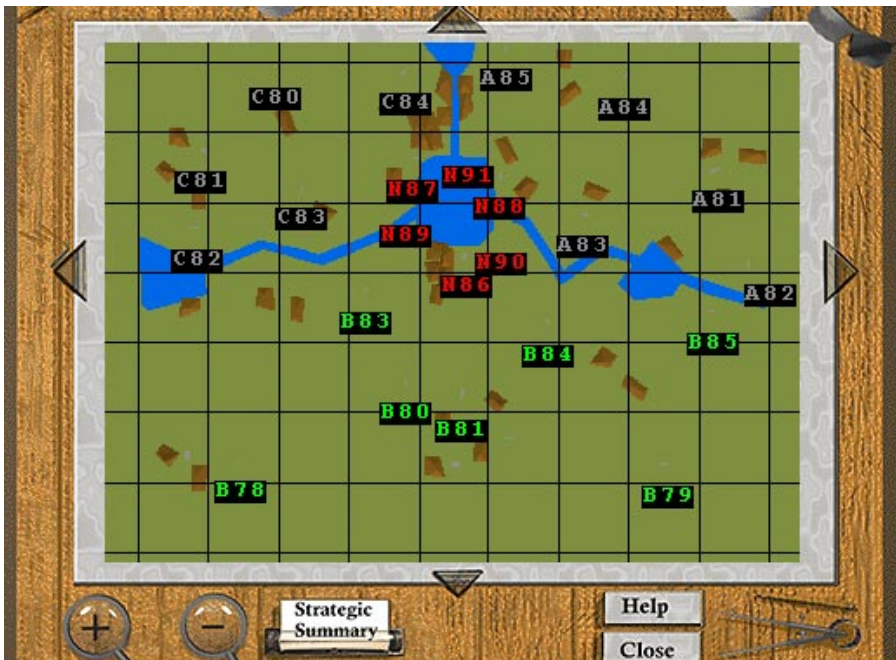
Situation Map

The map has a grid overlay designating sectors, 12 nautical miles across. Your country's airfields appear in your country's color. Damaged airfields in your country are yellow. Enemy airfields appear in the color of the country that owns them. Capturable fields that are not owned by your country are red. Double clicking on an airfield with the left mouse button takes you to that airfield's ready room.

Display Airfield List...
Toggle Full Screen Mode
Setup...   ▶
Show Guides
Help
About Air Warrior
Exit Arena
Exit Air Warrior

Map Pop-Up

You may zoom in and out on the Situation Map by left clicking on the "+" and "-" magnifying lenses at the bottom left of the screen. You may move around the map by left clicking on any of the arrow icons located on the four edges of the map. For a full screen display, right click on the map, and select TOGGLE FULL SCREEN MODE from the pop-up menu. To return to the map, repeat this action.

Left click once with your mouse on individual airfields to display Airfield Information on that airfield.

For Airfield Information on all available fields, right click on the map and select DISPLAY AIRFIELD LIST.

Airfield Information

Field	Status	Ammo %	Fuel %	Maint %	Type
B:78	Open	100	100	100	Normal
B:79	Open	100	100	100	Normal
B:80	Open	100	100	100	Cargo
B:81	Open	100	100	100	Normal
B:82	Open	100	100	100	Normal
B:83	Open	100	100	100	Normal
B:84	Open	100	100	100	Normal
B:85	Open	100	100	100	Normal
N:86	Neutral				
N:87	Neutral				
N:88	Neutral				
N:89	Neutral				
N:90	Neutral				
N:91	Neutral				

Go To Airfield		Close	Help

Airfield Information Window

Left click on the STRATEGIC SUMMARY icon to display the Strategic Report Window describing the current arena situation.

You can use the Situation Map to gauge the relative strength of friendly and enemy forces

in a given area, by observing the plane counters on the Situation Map. A small red square in the upper left hand corner means that an enemy plane is in that sector, though it does not give the position of the hostile plane. Yellow

Strategic Report

Country	Sorties	Victories	Planes lost	Fighter Score	Bomber Score
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0

Facility	x	y	Near	Status	Special
Munitions factory	3	3	B:80	operating	
Aircraft factory	6	3	B:80	operating	builds Spitfire Mk IX
Oil refinery	8	3	B:80	operating	

Strategic Report Window

squares signify friendly planes. Larger color squares signify 10 enemy planes.

Thus, if you want to find the action, take off from an airfield in the midst, or near, a sector with many counters, or high value counters, in it. If you care to survive the experience, make sure there are friendly counters there, too.

If you wish to leave the Situation Map without moving to an airfield Ready Room, left click on the CLOSE button.

Moving to an Airfield Ready Room

The Situation Map must be displayed to move to an airfield Ready Room. After deciding which open or damaged airfield you want to go to, left click on that airfield to be taken directly to the Ready Room for that airfield.

The Kill Board

The HQ room features a Kill Board which lists the scores for all players currently present in the arena. Left click on the chalkboard graphic labelled KILL BOARD to bring up a full screen display. The Kill Board lists scoring

information for each player by category: as a fighter pilot; as a bomber pilot; as a bomber or vehicle crew member; and overall score. Squadron and country scores are posted as well. Scoring information is reset every three weeks. Left click on the CLOSE button to go back to the Headquarters Room.

Officers Club Door (Exiting HQ)

Left clicking on the Officers Club door returns you to Officers Club #1.

Headquarters Room Command Lines

Written Command Lines are also supported in the Headquarters Room. Type them into the Outgoing Message area and press the <ENTER> key to execute the command:

Command	Action
/rank	Display Kill Board with player info
/rankbomb	Display Kill Board with bomber info
/rankteam	Display Kill Board with squadron info
/goto [n]	Move to Ready Room at airfield #n
/oc [n]	Move to Officer's Club #n
/gen [n]	Move to Officer's Club #n
/roster	Display HQ Roster
/airfield	Display Situation Map
/strategic	Display Strategic Summary
/score [ID#]	Display score info on specified player
/who [ID#]	Display Roster info on specified player
/country	Display your country affiliation
/country [A,B,C]	Change affiliation to specified country (subject to 24 hour allegiance rule) & move player to Officers Club
/handle	Display your current handle

/handle [new handle]   Change old handle to new handle (32 char. max.)

/duel [ID#]   Challenge player [ID#] to a duel

/accept [ID#]   Accept challenge from player [ID#]

/deny [ID#]   Decline challenge from player [ID#]

Ready Room

IN THE READY ROOM

As described earlier, one Ready Room is provided for each available airfield. General aspects (Player List, Group List, Message areas, Conversation, Roster, Doors) of the room have been outlined above. If the airfield is destroyed while you are in the Ready Room, you will be returned to the Headquarters Room.

From the Ready Room, you may go to the Radio Room, choose an aircraft or other combat vehicle and begin combat, assemble a bomber or vehicle crew, or return to HQ. You may also use the Situation Map to travel to Ready Rooms at other airfields.

Using the Roster

The Roster in the Ready Room functions exactly like the Roster in the Officers Club, displaying player information about everyone in the arena, grouped by their country affiliation. Left click on the chalkboard area in the graphic to display the Roster.

Using the Loudspeaker

The loudspeaker is not available in the Ready Room.

Situation Map

The Situation Map in the Ready Room functions exactly like the Situation Map in the HQ, except that you will return to the Ready Room when you leave the map. You may travel to another airfield Ready Room by double left clicking on any active, available airfield on the map.

Aircraft Selection

In the Ready Room, you may select your aircraft by left clicking on the three-view aircraft silhouette display on the wall, or on the Select Aircraft folder laying on the table. In either case, you will see a selection screen displaying silhouettes of all available aircraft (non-available planes will be grayed out). Highlight the plane you wish to select by left clicking on the plane's silhouette, or press the <ESC> key to return to the Ready Room.

After selecting a plane, the Plane Setup Window is displayed, enabling you to specify loading of fuel and bombs (when applicable). With medium or heavy bombers, bombs are loaded automatically. If you want to load bombs onto a fighter, however, you will need to use this window to do so.

If you selected a crew-served bomber, you have the option of broadcasting a
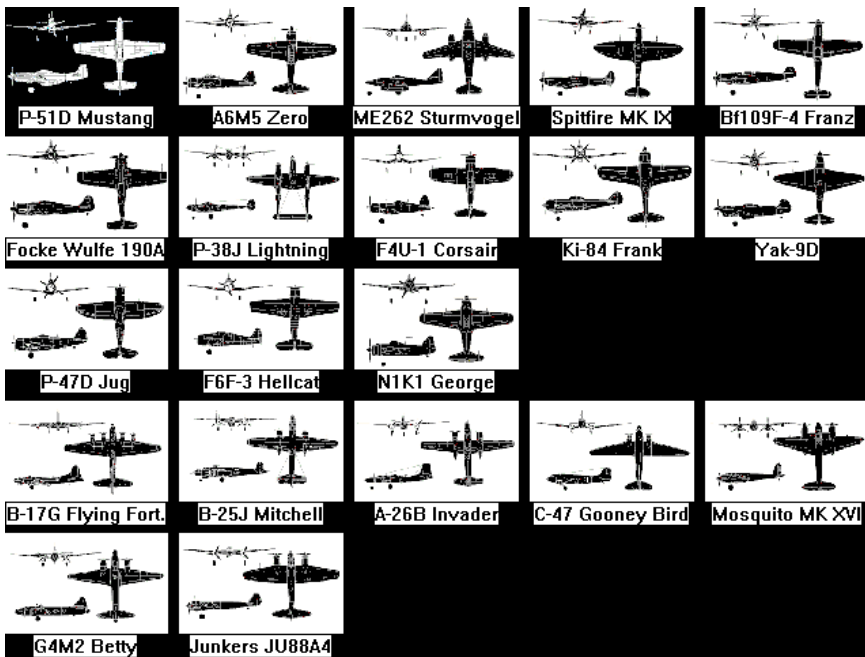
Aircraft Selection Screen

request for a bomber crew. Enabling this
option will send a message to everyone in
the Ready Room, or everyone from your
country, that you are looking for crew
members. To build a crew, see "Forming a
Crew," below.
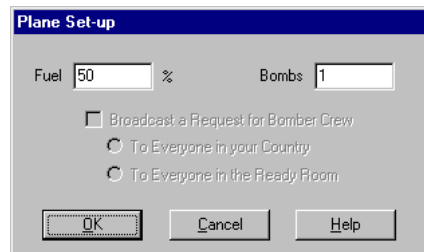
Plane Setup Window

To proceed into flight or build a crew, left
click on OK to return to the Ready Room.
Click on CANCEL if you wish to abandon the aircraft selection process and
return to the Ready Room.

Vehicle Selection Folder

If you wish to choose a vehicle instead of an aircraft, left click on the Vehicle
Selection folder laying on the table next to the Situation Map. Again, you will
select from a full screen display of available vehicles (non-available vehicles
will be grayed out). Highlight the vehicle you wish to select by left clicking on
the vehicle's silhouette, or press the <ESC> key to return to the Ready Room.

After selecting a vehicle, you will again be able to set the fuel load, and enable a request for crew members via a pop-up dialog box. When you finished, you may proceed into action or build a crew by left clicking on OK to return to the Ready Room. Click on CANCEL if you wish to abandon the vehicle selection process and return to the Ready Room

Forming a Crew

If you select a crew-served bomber or vehicle, you will want to fill crew positions before entering combat. To do so, you must be in the Ready Room, and you must have selected a crew-served plane or vehicle.

While you can tell people directly that you're ready to take on a crew, it's easiest to use the broadcast feature described in the aircraft/vehicle selection process. Players who want to be on your crew will travel to your Ready Room, and make their request with the following Command Line (followed by <ENTER>):

   /join [your ID#][position]

Position codes are given in Sections 9 and 10. In addition to using the right mouse pop-up menu, you can check the crew status for a bomber or vehicle, type this Command Line (followed by <ENTER>):

   /sta [ID#]   List status of crew being assembled by player [ID#]

Some players may request to ride along on your aircraft as an observer. The observer will not occupy a combatant position, and is not capable of assuming combatant duties on the aircraft or vehicle. A player may also ride as an observer in a fighter, fighter/bomber or C-47. Use the following Command Line (followed by <ENTER>) for making this request:

   /observe [ID#]   Make request to fly as an observer with player [ID#]

When anyone requests to join your crew, a message showing the request, the requesting player's ID number and the player's desired position will appear in

your incoming message box. You may accept or decline the player's request to join your crew with the pop-up menu, or by typing the following into your Outgoing Message area and pressing <ENTER>:

/accept [ID#]	Accept a request to join a crew or observe from player [ID#]
/deny [ID#]	Decline a crew request from player [ID#]

You may respond to a request for observation in the same way you respond to a request for a crew position.

You may depart from the airfield after you assemble a full crew complement, but you may also leave at any time with as few crew members as you think you can get away with.

Entering Combat

Once an aircraft or vehicle has been selected and loaded/crewed, you may proceed directly into combat. Left click on the door labelled AIRFIELD to exit the Ready Room. You will be placed on the airfield, at the controls of the aircraft or vehicle you have selected, ready to begin combat.

Entering the Radio Room

To enter the Radio Room from the Ready Room, left click on the radio graphic in the Ready Room. You will move immediately to the Radio Room.

Exiting the Ready Room

Left click on the EXIT sign in the Ready Room to return to the Headquarters room.

Ready Room Command Lines

In addition to the movement and command functions provided by *Air Warrior's* graphical interface, written Command Lines are also supported. The following commands may be used in the Ready Room by typing them into the Outgoing Message area and pressing the <ENTER> key to execute the command:

Command	Action
/hq	Move to affiliated country's Headquarters Room
/goto [n]	Move to Ready Room at airfield #n
/oc [n]	Move to Officer's Club #n
/gc [n]	Move to Officer's Club #n
/roster	Display HQ Roster
/tune	Tune radio in Radio Room; takes player to Radio Room from Ready Room
/fly	Move to runway at controls of plane or vehicle
/plane [n]	Select plane #n, displays loading dialog box
/available	Display aircraft selection screen
/bomb	Load maximum number of bombs on plane
/bomb [n]	Load plane with n number of bombs
/cargo [f,a,s]	Load C-47 with fuel (f), ammo (a), or supplies (s)
/score [ID#]	Display score info on specified player
/who [ID#]	Display Roster info on specified player
/country	Display your country affiliation
/country [A,B,C]	Change affiliation to specified country (subject to 24 hour allegiance rule) & move player to Officers Club
/handle	Display your current handle
/handle [new handle]	Change old handle to new handle (32 char. max.)
/duel [ID#]	Challenge player [ID#] to a duel
/deny [ID#]	Decline a duel challenge or crew request from player [ID#]
/join [ID#][position]	Make request to join a crew formed by player [ID#] in [crew position #]
/observe [ID#]	Make request to fly as an observer with player [ID#]

/accept [ID#]   Accept dueling challenge or squadron invitation
            from player [ID#]

/accept [ID#]   Accept a request to join a crew or observe from
            player [ID#]

Radio Room, with Tooltips shown

IN THE RADIO ROOM

As described earlier, one Radio Room is accessible from the Ready Room at each airfield. General aspects (Message areas, Doors, etc.) of the room have been outlined above. Note that the Player List and Group Area are not provided in the Radio Room.

From the Radio Room, you may establish two-way communication with any other radio belonging to your country which is tuned to the same channel. This includes ground-to-air radio contact with in-flight countrymen flying from your airfield. You may also make radio contact with all of your country's other radios (in-flight and at other airfields), and, if you broadcast on Channel 1, with all players in the arena (regardless of country) whose radios are tuned to Channel 1.

Prior to departing, pilots should coordinate frequency assignments with both ground and flight personnel. Should a pilot take off without coordinating specific frequencies, contact can be made by calling the pilot on Channel 2.

This call will be received by all of your country's radios in the arena. Sending a "Blue Goose, please phone home" message could be distracting to other players involved in combat, so be sure to coordinate radio communications beforehand.

Tuning the Radio

Tune the Radio Room radio by left clicking on the Radio and entering the desired channel in the Change Radio Channel window; click on OK to change the channel, or CANCEL to return to the Radio Room without changing channel. Alternatively, you may type the Command "**/tune [channel #]**" followed by <ENTER> in the Outgoing Message area to tune to your desired channel. See Section 6 of this manual for further information on radio operation.

Change Radio Window

Exiting the Radio Room

Left click on the Ready Room door to return to the Ready Room.

Radio Room Command Lines

The Radio Room supports the same Command Lines as the Ready Room.

ENDING A FLIGHT

A flight in an *Air Warrior* arena ends when you a) get shot down, b) bail out of your airplane and touch down on the ground, c) crash due to pilot error, or d) land your aircraft safely. You will be returned to the Ready Room or HQ, and your Player Score will be automatically displayed (this can be disabled from the Interface Tab under User Preferences).

Shot Down

If you are killed due to hostile action in-flight, or in a vehicle, you will be returned automatically to the Ready Room of the nearest airfield, provided you are killed on or over friendly territory. If you are killed over enemy territory, you will be returned to your country's Headquarters. In either case, you may re-enter combat as soon as you wish. Point totals are reduced by 75% if you are shot down.

Player Score   WWII

CPID: bogie

Most recent kills:
Who last killed you: ☑ Show Score After Flight

	Sorties		Victories		Score	
	Fighter	Bomber	Fighter	Bomber	Fighter	Bomber
Landed	5	0	0	0	0	0
Ditched	0	0	0	0	0	0
Bailed	2	0	0	0	0	0
Crashed	3	0	0	0	0	0

Last Mission Score: 0
Total Fighter Score: 0
Total Bomber Score: 0

Close   Help

Player Score Window

Bailing Out of Your Aircraft

You can bail out with the command keys <ESC + p + ENTER>, which puts you in free-fall from the aircraft. You must type <ESC + p + ENTER> again when you want to pull the ripcord. As you are descending, you will still be in the thick of arena play (translation: someone may decide to strafe you as you descend, or you could be struck by ground fire or a passing aircraft). Therefore, you may wish to delay pulling the ripcord if you bail out at a high altitude (be sure to pull before 500 feet).

When you touch the ground, you will be returned automatically to the Ready Room of the nearest airfield if you bail out over friendly territory. If you bail out over enemy territory, you will be returned to your country's Headquarters. Again, you may re-enter combat as soon as you wish. Point totals are reduced by 2/3 if you end your flight with a bail-out.

Crash Due to Pilot Error

Any number of pilot misjudgments can cause a perfectly functioning aircraft to crash, resulting in the pilot's death due to non-hostile causes. You will be returned automatically to the Ready Room of the nearest airfield if you crash on friendly territory. If you crash on enemy territory, you will be returned to your country's Headquarters. Point totals are reduced by 75% if your flight ends in a crash.

Landing Successfully

If you land successfully at a friendly airport, you may exit the plane by typing <ESC+e +ENTER>, which will take you to the airfield Ready Room. Unlike off-line Solo Flight, <ESC+e+ENTER> will not work unless you are on the ground and are at a complete stop. Full credit is awarded for a successful landing at a friendly airport.

Landing anywhere else (even successfully) is known as ditching; if you ditch on friendly territory, you will return to the Ready Room of the nearest friendly airfield. If you ditch in enemy territory, or land at an enemy airfield, you will be returned to your country's Headquarters. Point totals are reduced by 50% if you ditch at the end of a flight.

EXITING THE GAME

To exit the game, return to the Officers Club and left click on the EXIT door. This will return you to the Arena Selection Screen. You may also type "/arena" while in the Officers Club to return to the Arena Selection Screen.

APPENDIX A - CONTROL SETUP NOTES

AIR WARRIOR SUPPORTED EQUIPMENT

Flight Sticks

ThrustMaster XL

ThrustMaster FCS

ThrustMaster FLCS

CH Flightstick Pro

CH Combat Stick

CH Fighter Stick

Gravis Firebird/Phoenix

Microsoft Sidewinder Pro

Suncom Raptor

Suncom Talon

Suncom Eagle

Standard/Generic Joystick

Mouse (default setting)

Throttles

ThrustMaster WCS-I

ThrustMaster WCS-II

ThrustMaster TQS

CH Throttle

CH Pro Throttle

Standard/Generic Throttle (wheels, sliders)

Keyboard/Mouse (default)

Rudder Pedals

ThrustMaster RCS

CH Pro Pedals (*CH* toe brakes not supported)

Keyboard (default)

THIRD PARTY EQUIPMENT

A variety of third party flight controls are available for use with *Air Warrior*. During the Aircraft Control Setup process outlined in Section 2 of the *Operations Manual*, you will have the opportunity to assign various functions to the multiple switches and buttons on your third-party joystick. The following information covers some of the more popular units.

JOYSTICK DRIVERS

Although Air Warrior may be executed with only a mouse, a joystick is recommended to fly Air Warrior. To use a joystick in Windows, you need to install a joystick driver.

We have tested joysticks under Windows 3.X using the IBMJOY driver, available for download from a link to our web page (http://www.kesmai.com). For Windows 95, you will need the VJOYD driver, which is distributed with Windows 95.

Joystick Driver Installation for Windows 3.1x.

The procedure for installation and setup of IBMJOY is as follows:

· Download IBMJOY.ZIP, and unzip it into a directory.

· From the Control Panel, select Drivers.

· Select Unlisted or updated driver

· On the OEM Driver dialog, enter the driver directory path and click OK.

· In the list of OEM drivers dialog, select "Driver for Joystick", and click OK.

It can be setup to support either 2-axis or 3-axis logical devices. If setup for 2-axis, it will support up to two devices, or a total of 4-axis.

How to setup your driver:

If you have a joystick and rudder pedals (with or without the throttle), you have two, 2-axis devices.

If you have a joystick and a throttle (or a *ThrustMaster FCS* or a *Wingman Extreme*), you have one, 3-axis device.

If you have only a joystick, you have one 2-axis device.

Joystick device inputs are divided into three types: resistance, button, and keyboard. The resistance inputs are the two axis of the joystick, the rudder, the throttle, and sometimes the view switch (see ThrustMaster FCS). In the simplest case, the button inputs exactly match the buttons on the joystick. In some cases, such as CH joysticks, the button inputs may be encoded such that more than the usual four can be supported. On some joysticks, and most throttles, some or all the buttons are actually sent as key inputs or macros. These will have a separate keyboard connector.

LIMITATIONS:

The IBM PC joystick driver associates two buttons with the first joystick device and two buttons with the second joystick device. This means that if you do not have rudder pedals, you may not be able to read all the buttons on your joystick. This affects any typical four-button joystick, and is a particular problem for those *CH Pro* joysticks which use coded button inputs for the view switch.

In some cases, if you do not have a throttle, the driver will not recognize the rudder pedals. In particular, in a combination of a *ThrustMaster RCS* with a *ThrustMaster FLCS* or a *SunCom Eagle*, the *RCS* will not work.

Windows 95

The required *Windows 95* joystick driver VJOYD must be installed. If your PC had a game port when *Windows 95* was installed, the joystick driver should have been installed. Otherwise, refer to your *Windows 95* documentation.

This release of *Air Warrior* uses the older *Windows 3.x* joystick code, meaning that many of the selected options are not available. Future releases, which do not require *Windows 3.x* compatibility, will offer increased flexibility. At this time, we support two-axis and three-axis logical devices. If set up for two-axis, we will support up to two devices, or a total of four-axis.

The required Windows 95 joystick driver, VJOYD, is provided with Windows 95, and will be installed when your sound card is auto-detected. Users of separate game cards may have to perform the installation manually.

HOW TO SET UP YOUR DRIVER

The Windows 95 joystick setup is much more intuitive than in earlier versions of Windows. Go to the Control Panel and find the joystick applet. Normally you just select the option that most closely matches your hardware. One exception is the ThrustMaster FCS, and compatible sticks, which sometimes work better with the hat as a third axis, rather than as a POV switch.

It is important that you calibrate and test your joystick in the Control Panel. If it does not work there it probably will not work correctly in Air Warrior. If you are treating your FCS hat as a third axis, be sure to move it to all possible positions when it asks you to calibrate your throttle, odd as that sounds.

If you have a joystick, a throttle (or a *ThrustMaster FCS* or a *Wingman Extreme*), and rudder pedals, you have two two-axis devices. Set up joystick 1 and joystick 2 as two-axis, two-button joysticks.

If you have a joystick and a throttle (or a *ThrustMaster FCS* or a *Wingman Extreme*), you have one three-axis device. Set up joystick 1 as a three-axis, four-button joystick.

If you have only a joystick, you have one two-axis device. Set up joystick 1 as a two-axis, four-button joystick.

Do not use the *ThrustMaster Flight Control System* option. If you do, you hat switch will not work. Do not check the rudder option. If you do this, rather than following the instructions above, your rudder will not work.

LIMITATIONS:

There is no joystick driver option which is compatible with *Windows 3.x* that will support a two-axis joystick with rudder pedals. If you do not have a throttle (or a T*hrustMaster FCS* or a *Wingman Extreme*), you will not be able to use your rudder pedals, odd as that sounds.

NOTE - This assumes running our *Windows 3.x* compatible version on *Windows 95*. A future *Windows 95* version of *Air Warrior* will greatly simplify joystick setup and resolve the limitations.

JOYSTICKS

Generic 2-Button Joystick

The Generic 2-Button Joystick can be any standard joystick device with at least two buttons that are not programmed to send keyboard commands. Any other buttons or switches which are programmable will work normally; any other buttons or switches which are not programmable will be ignored.

ThrustMaster XL

The *XL* is functionally equivalent to the *FCS*. See below.

ThrustMaster FCS and *Pro FCS Flight Control System*

Castle Switch (Hat)

The Castle switch controls views. There are two sets of views, toggled from one set to the other by the pinkie switch. The difference here, compared to the *CH Pro*, is that you can employ hat positions and joystick buttons simultaneously.

Set 1	**Forward**: up/forward view	
	Left: left view	**Right**: right view
	Back: back view	
Set 2	**Forward**: up view	
	Left: left/back view	**Right**: right/back view
	Back: back/up view	

The upper thumb button, near the Castle switch, is your bomb release. The middle thumb button deploys dive brakes on planes equipped with them (P-38 Lightning, F4U Corsair, F-86, and MiG-15). The trigger button will fire your guns.

ThrustMaster WCS Weapons Control System (Default Settings)

WCS - Mark II

Use the AW4WIN.ADV file that comes with the *Air Warrior* installation download in order for the MkII WCS to work with an FCS (refer to the

WCS instruction manual for information on how to handle the AW4WIN.ADV file). The three position rocker switch will function the same as the Mark I above. The button scheme, however, is different:

Buttons 1-6

Button 1: start engine

Button 2: autopilot

Button 3: raise/lower landing gear

Button 4: raise flaps one notch

Button 5: lower flaps one notch

Button 6: gun camera on/off

CH Flightstick PRO

The *FlightStick Pro* has a trigger, three buttons, and a four-way Castle switch. It is not a programmable joystick.

Select *CH Pro* from the drop down joystick menu on the Aircraft Controls Setup window (Main Menu/Setup Hangar/Clipboard).   It is possible to map the four view directions to any of the four physical positions on the Castle switch or "hat," as well as the three stick button functions (brakes, bombs, and toggle view).

Here are the *Air Warrior* default view sets for the CH Pro. You switch between them by pressing the button you designate as your toggle switch on the stick:

Set 1   **Forward**: up/forward view

    Left: left view   **Right**: right view

        Back: back view

Set 2   **Forward**: up view

    Left: left/back view   **Right**: right/back view

        Back: back/up view

Due to limitations in the *CH Pro*, it is not possible to combine button presses with hat movement. Therefore, if you want to look around, switch between the first and second view sets, fire guns, drop bombs, or apply brakes, you must first center the hat AND release any other stick buttons.

The *FlightStick* also has a rotary throttle control. Select the Generic Throttle Control to use it.

Due to limitations of the standard *Windows* joystick driver, the Castle switch and two of the buttons on the *FlightStick Pro* will be unusable under versions of *Windows* prior to *Windows 95*, unless you have rudder pedals, or a *CH Pro Throttle*.

CH Combat Stick

The *Combat Stick* has two, four-way switches, five buttons, and a trigger. It is not a programmable joystick.

Air Warrior currently supports only four buttons (including the trigger) and one four-way switch. The trigger and any three buttons may be used when calibrating the four button functions. The top four-way switch is normally used for view control, but you may choose either.

Used in conjunction with the *CH Pro Throttle*, this becomes a programmable joystick and all buttons and switches become available.

The Combat Stick also has a rotary throttle control. Select the Generic Throttle option to use it.

Due to limitations of the standard *Windows* joystick driver, the four-way switch and two of the buttons on the *Combat Stick* will be unusable under versions of *Windows* prior to *Windows 95*, unless you have rudder pedals, or a *CH Pro Throttle*.

CH Fighter Stick

The *Fighter Stick* has four, four-way switches, a trigger, and three buttons. The four-way switches are programmable using the *CH* utilities.

The © also has a rotary throttle control. Select the Generic Throttle Control option to use it.

Due to limitations of the standard *Windows* joystick driver, two of the buttons on the *Fighter Stick* will be unusable under versions of *Windows* prior to *Windows 95*, unless you have rudder pedals, or a *CH Pro Throttle*.

Gravis Firebird/Phoenix

The *Phoenix* is a fully programmable control system with a joystick, throttle, and rudder, two triggers, and 22 buttons. We recommend that you start with the programming in the AIRWAR.PHX included in the *Air Warrior* installation files (see your *Gravis* instruction manual for more information).

Air Warrior assumes that two controls are programmed as joystick buttons 1 and 2. Out of the box, the *Phoenix* has the lower and upper trigger programmed as joystick buttons 1 and 2, respectively. All other buttons should be programmed to keyboard commands.

The throttle may be programmed to be analog or key mapped. Out of the box the throttle will be analog. Select the Generic Throttle Control to use the analog throttle.

The rudder may be programmed as analog or key mapped. Out of the box the rudder will be analog. Select Generic Rudder Control to use the analog rudder.

SunCom Raptor

This stick will operate with *Air Warrior* much the way the *CH Pro* does.

SunCom Talon

This joystick has four buttons, a four-way Castle switch, and a four-way hat switch. The buttons may be treated as joystick buttons or mapped to the keyboard. The four-position switches are strictly mapped to the keyboard.

Air Warrior assumes that the buttons are mapped to the keyboard (not joystick mode). You will use the key mapping test rather than the button test to verify their operation. Follow the directions in the SunCom manual to program the *Talon*.

If you prefer to use the buttons in joystick mode, select the Generic Joystick option. The SunCom joysticks are not fully compatible with the *ThrustMaster WCS-II* or *RCS*.

SunCom Eagle

This *Eagle* is similar to the *Talon* but has expanded programmability. Use the SunCom utilities to program the *Eagle*.

Logitech Wingman Extreme

The *Wingman Extreme* has four buttons and a four-way hat switch. It is not programmable. Functionally, it is a clone of the *ThrustMaster FCS* and is compatible with the *WCS-II* and *RCS*.

Microsoft Sidewinder Pro

The *SideWinder 3D Pro* is a multifunctional controller with a joystick, view switch, throttle, rudder, eight buttons. The twist axis of the stick is the rudder control. It is not programmable. It supports three mode of operation: *ThrustMaster* emulation, *CH FlightStick Pro* emulation, and digital.

When used in *ThrustMaster* emulation mode, select an *FCS* and *RCS*. The throttle slider and four base buttons will not function. The view switch is a four-way four-position hat switch.

When used in *CH FlightStick Pro* emulation mode, select a *CH FlightStick Pro*, Throttle, and Pedals. The four base buttons will not function. The view switch is a four-way switch.

The digital mode is only available for *Windows 95* and is only supported by the *Windows 95* joystick DLL. When used in digital mode, select a *Microsoft SideWinder 3D Pro*, generic throttle control, and generic rudder control. Up to four of the eight buttons are currently supported by *Air Warrior*. *Air Warrior* currently treats the eight-way view switch as a four-way switch.

THROTTLES

Keyboard/mouse

The keyboard and mouse are the default throttle control. Moving the mouse forward and back with the right button depressed will move the throttle, as will the C and V keys.

Generic Throttle Control

The Generic Throttle Control is any standard throttle input device. This could be a wheel or slider attached to the joystick, or a stand-alone device not discussed below.

ThrustMaster WCS-II (Weapon Control System Mark II)

The *WCS-II* is a throttle designed especially for use with the *FCS*. It has six buttons and one rocker switch, all of which are programmable. Use the *ThrustMaster* utilities and the AW4WIN.ADV file distributed with *Air Warrior* to program your *WCS-II* (see your *WCS-II* manual for more information).

If the WCS-II is used with the FCS, red throttle rocker switch should be set to digital and the black hat rocker switch should be set to analog. When properly programmed, throttle movement will send keyboard commands and hat movement will be passed through normally. In this configuration the WCS-II will not show up as an analog throttle on the test and calibrate dialog, but you should see the key inputs. The WCS may also be used with the FLCS.

The WCS-II may also be used as a normal analog throttle. In this case, set the red throttle rocker to analog and the black hat rocker to digital. If you joystick is an FCS, you will have to create a new WCS-II programming file to program key commands for the hat. In this case you should select one of the generic stick types, rather than FCS, and you will not see the hat switch on the Test and Calibrate dialogue box.

The WCS-II makes up to three joystick buttons programmable. The trigger will be passed through normally but the other buttons will be programmed with key commands. Only the trigger will show up as a digital input on the calibrate and test dialog.

Some users prefer to cable their WCS-II to a second game port and the keyboard, so that it functions as a keymapped device but does not affect the operation of their stick and/or rudder pedals. This may be recommended if the other devices are not ThrustMaster products and may not be compatible with the throttle. In this case, you should select 'keyboard/mouse' as your throttle option and program the WCS-II as you would for use with the FCS.

The WCS-II is not fully compatible with the CH Pro joystick. If the CH Pro is connected to the joystick input on the WCS-II, the buttons and four-way switch will not function correctly. The WCS-II may be used with the CH Pro only if it is used as a purely kemapped device, as described above.

ThrustMaster TQS (Throttle Quadrant System)

The TQS is a throttle designed exclusively for use with the FLCS. It has buttons, switches, and a track ball, all of which are programmable. Use the ThrustMaster utilities to program your TQS and FLCS. The TQS can only be used with the FLCS, and requires an FLCS to function.

CH Throttle

The CH Throttle has a four-position switch, a rocker switch, and six push buttons, all programmable. Use the CH utilities to program the Throttle.

CH Pro Throttle

The *CH Pro Throttle* has four, four-way switches and four buttons, all programmable. In addition, it makes the buttons on any *CH* product joystick programmable. Use the *CH* utilities to program the *Pro Throttle*.

RUDDER PEDALS

Keyboard

The default rudder control device is the keyboard.

Generic Rudder Control

The Generic Rudder Control is any standard rudder input device. This could be a wheel or slider attached to a joystick, or a stand-alone device not discussed below.

ThrustMaster RCS (Rudder Control System)

The *RCS* is a rudder pedal system designed for use with the *ThrustMaster* joysticks and throttles.

CH Pedals

The *Pedals* are designed for use with the *CH* joysticks and throttles. *Air Warrior* does not, at the moment, support the toe brake function of most *CH* pedals, mostly because the game allows you to steer on the ground with your rudder pedals rather than with differential braking.

CH Pro Pedals

The *Pro Pedals* differ from the standard pedals in that they have toe brakes. However, toe brakes are not supported by *Air Warrior* at this time.

GAME PORTS

Most joystick vendors now recommend the use of a dedicated speed-controlled game card on fast PCs, such as *Pentiums*. If you use the game port on most typical sound cards, you may not be satisfied with the results. Common problems include excessive noise or an inability to sense part of the right or back movement of the joystick. *Air Warrior* control calibration procedure attempts to compensate for such problems, but the best solution is to use the best hardware.

Dedicated Game Ports in Windows 95

Windows 95 often has problems with auto-detecting game cards. The usual symptom is the joystick buttons work but the joystick does not. One solution is to uninstall the driver for the game port on your sound card and manually install the driver for your game card using Add New Hardware.

Both ThrustMaster and CH Products have additional help on their web sites.

THIRD PARTY DEVICE SUPPORT ON THE INTERNET

ThrustMaster

http://www.thrustmaster.com

CH Products

http://www.chproducts.com

SunCom

http://www.xnet.com/~reno/suncom/suncom.html

APPENDIX B - COMMAND LINES

The following Command Lines (followed by <ENTER>) may be used in the
Officers Club:

Command	Action
/goto [n]	Move to Ready Room at airfield #n
/goto HQ	Move to affiliated country Headquarters Room
/HQ	Move to affiliated country Headquarters Room
/OC [n]	Move to Officer's Club #n
/gen [n]	Move to Officer's Club #n
/roster	Display HQ Roster
/exit	Move to Arena Selection Screen
/arena	Move to Arena Selection Screen
/move [n]	Move to arena #n
/score [ID#]	Display score info on specified player
/who [ID#]	Display roster info on specified player
/country	Displays your country affiliation
/country [A,B,C]	Change affiliation to specified country (subject to 24 hour allegiance rule) & move player to Officers Club
/handle	Display your current handle
/handle [new handle]	Change old handle to new handle (32 char. max.)

The following Command Lines (followed by <ENTER>) may be used in the
Headquarters Room:

Command	Action
/rank	Display Kill Board with player info
/rankbomb	Display Kill Board with bomber info
/rankteam	Display Kill Board with squadron info
/goto [n]	Move to Ready Room at airfield #n
/OC [n]	Move to Officer's Club #n

/gen [n]	Move to Officer's Club #n
/roster	Display HQ Roster
/airfield	Display Situation Map
/strategic	Display Strategic Summary
/score [ID#]	Display score info on specified player
/who [ID#]	Display roster info on specified player
/country	Display your country affiliation
/country [A,B,C]	Change affiliation to specified country (subject to 24 hour allegiance rule) & move player to Officers Club
/announce	Send announcement over loudspeaker (authorized players only)
/handle	Display your current handle
/handle [new handle]	Change old handle to new handle (32 char. max.)

The following Command Lines (followed by <ENTER>) may be used in the Ready Room and the Radio Room:

Command	Action
/HQ	Move to affiliated country's Headquarters Room
/goto [n]	Move to Ready Room at airfield #n
/OC [n]	Move to Officer's Club #n
/GC [n]	Move to Officer's Club #n
/roster	Display HQ Roster
/tune [channel #]	Tune radio in Radio Room; takes player to Radio Room from Ready Room
/fly	Move to runway at controls of plane or vehicle
/plane [n]	Select plane #n, displays loading dialog box
/available	Display aircraft selection screen
/bomb	Load maximum number of bombs on plane
/bomb [n]	Load plane with [n] number of bombs

/cargo [f,a,s]	Load C-47 with fuel (f), ammo (a), or supplies (s)	
/score [ID#]	Display score info on specified player	
/who [ID#]	Display roster info on specified player	
/country	Display your country affiliation	
/country [A,B,C]	Change affiliation to specified country (subject to 24 hour allegiance rule) & move player to Officers Club	
/handle	Display your current handle	
/handle [new handle]	Change old handle to new handle (32 char. max.)	

The following Command Lines (followed by <ENTER>) are used to operate radio and intercom in aircraft and vehicles:

/tune [channel #]	Tune to a radio channel from a conference or briefing room
ESC+t [channel #]	Tune to a radio channel in-flight
/ [radio message]	Broadcast on the radio channel you're tuned to
' [radio message]	Broadcast on your country's radio channel 2 (fighters), or over the intercom (bombers or vehicles)

The following keyboard commands are used to operate aircraft radar:

F10	Turn radar screen on/off
[	Zoom in
]	Zoom out
CTRL+F2	Release the map and scroll it around with the arrow keys
CTRL+F2	Center the map on your position

The following Command Lines (followed by <ENTER>) are used to operate aircraft radar:

/*ru	Unbiased radar/icon mode (default)
/*re	Enemy biased mode
/*rf	Friendly biased mode
/*rb	Bomber biased mode

APPENDIX C - USING *KEYMAP*

Courtesy of Rich Lawrence, a.k.a."Twisted"

Keymap is a utility that comes with your *Air Warrior* software. It is found in the same directory as AIRWAR.EXE, and must be run under DOS (not *Windows*).

The purpose of *Keymap* is to change the way *Air Warrior* processes keyboard input. Like most programs, *Air Warrior* has certain functionality associated with certain keys when flying — for instance, the <;> key raises or lowers your landing gear — but unlike many games, *Air Warrior* allows you to change the key command assignments. So if you were accidentally hitting the <;> key too often and lowering your landing gear at awkward times, you can use *Keymap* to move the raise/lower gear function to the <q> key, or to any other key on the keyboard.

To do this, you can use *Keymap* to EXTRACT the pertinent *Air Warrior* key definition file, after which you can redefine key assignments by editing the extracted file using any DOS text file editor. When you are finished re-defining keys, you use the *Keymap* COMPILE command to restore the edited file.

Using *Keymap* — Starting the Program

From the *Windows* Main Group, double click on the *MS-DOS* Prompt icon, which will put your computer in MS-DOS mode, with a black screen and a DOS prompt (shown as "C:\>"). To return to *Windows Program Manager*, type EXIT at the DOS prompt and press the <ENTER> key.

At the DOS prompt, enter the command "CD\[dirname]" where [dirname] is the name of the directory containing the AIRWAR.EXE file (usually AIRWAR). To run *Keymap*, type and enter "\KEYMAP" at the resulting prompt; for example,

> C:\>\AIRWAR\KEYMAP

This will start the Keymap program.

Using *Keymap* — the HELP Function

Keymap utilizes only three commands — HELP, EXTRACT, and COMPILE. HELP is activated by typing KEYMAP /H at the DOS prompt, e.g.,:

> C:\> KEYMAP /H

Keymap will respond with an online help file.

Using *Keymap* — the EXTRACT Function

Keymap works with special files that contain definitions of all the keys (both on the keyboard and on joysticks or other devices like the *WCS*). These files are called "maps," and the files you will work with end in the extension ".KEY".

The map file you need is determined by the type of control device you choose when you set up *Air Warrior*. Refer to Section 2 and Appendix A in the *Air Warrior Operations Manual*.

Some of the *Air Warrior* control types and the corresponding *Keymap* .KEY files which will affect them are noted below.

Control Type	*Keymap* file	Notes
Mouse	DEFAULT.KEY	Not a good way to fly *Air Warrior*
Joystick	JOYSTICK.KEY	For generic joystick users
TM FCS	THRUSTFCS.KEY	*Thrustmaster FCS* or *PFCS*
CHPRO	CHPRO.KEY	*CH Products Flight Stick Pro*
WCS I	WCSMKI.KEY	Thrustmaster stick + *WCS Mark I*
WCS II	WCSMKII.KEY	Thrustmaster stick + *WCS Mark II*

To determine what files are available to you, use the *Keymap* extract command by typing "KEYMAP /E" and hitting <ENTER>. You will get output that looks like this:

SVGA KEYMAP for version 1.5 Copyright (c) 1993-1994 Kesmai Corporation

default.bnd -> default.key ... done.

joystick.bnd -> joystick.key ... done.

thrustfcs.bnd -> thrustfcs.key ... done.

chpro.bnd -> chpro.key ... done.

wcsmki.bnd -> wcsi.key ... done.

wcsmkii.bnd -> wcsii.key ... done.

The extracted files will now be present in the directory you are working in (AIRWAR, in our example). It is advisable to make backup copies of these files before proceeding.

It is possible to extract only the particular file you are going to be using instead of all of the files (the only benefit is a few less files in your *Air Warrior* directory, but the map files are very small). To do this use the EXTRACT command with a particular map specified - for instance, if you owned a CH Products joystick and had selected CHPRO as your controller type in *Air Warrior*, you might type

>   C:\> KEYMAP /ECHPRO

(NOTE: There is <u>no space</u> between the /E and the CHPRO — type it all as one word, and you should <u>not</u> add the .KEY extension yourself — the program will provide it).

Use of the .KEY files is explained in the section below, "Editing the *Keymap* Map File." The COMPILE command covered below is used <u>after</u> editing the map file.

Editing the *Keymap* Map File

To actually change command keys in the game, you use a DOS text file editor on the .KEY file(s) that you created with the EXTRACT command. You then then reintegrate it into the game using the COMPILE feature.

Keymap isn't used for the editing; you can use any text-based editor such as EDIT (supplied with *MS-DOS 6.0* and above), *Windows Notepad*, or anything else which is DOS text compatible. As an example, *MS-DOS 6.0* or greater users can edit the mapping for the CHPRO products by entering

>   C:\> EDIT CHPRO.KEY

at the DOS prompt. This will start the *MS-DOS 6.0* file edit program (see your *MS-DOS 6.0* documentation form more information on the EDIT command). The file displayed has data in two columns and will begin something like this:

Version b ; WARNING: DO NOT DELETE THIS LINE!

ESC	COMMAND_MODE
1	PIC_RANGE_1
2	PIC_RANGE_2
3	PIC_RANGE_3

Please heed the warning in the first line; if you delete this line, *Keymap* will become confused and won't allow you to recompile your .KEY file after editing.

The format here is simple; the left column is the key that is pressed when playing *Air Warrior*, and the right column is the effect it produces. The spacing does not have to be precise, but there needs to be at least one space between the left column and the right.

To change a key command assignment, you first open the file with your text editor. Then, simply find the command you are interested in, and change the key entry in the left-hand column to the key you want to execute that command.

For instance, if you wanted to change the raise/lower gear key to <q>, so you don't accidentally lower your gear when hitting <ENTER>, you would change the following part of the CHPRO.KEY file:

SEMI   GEAR_UP_DN

to read this way instead:

Q   GEAR_UP_DN

When you are through with your changes, recompile the .KEY file using the *Keymap* /CCHPRO command described below in "Using *Keymap* — The COMPILE Function." From this point on, to raise your gear in *Air Warrior* you would use the <q> key instead of the semicolon.

Strange Keys and Stranger Commands

As you look through the .KEY file, you will find some entries in the left and right columns that don't follow the format described above. There are certain keys that can't be shown directly in the left-hand column, so abbreviations are used instead. Likewise, there are certain commands that are actually combinations of commands, so they are listed as multi-part words in the right-hand column. Here are some keywords you'll see in the left-hand column and what they mean:

LBRACKET, RBRACKET   - The <[> and <]> bracket keys (to the upper left of
                                   the <ENTER> key)

QUOTE   - The <'> quote key

SEMI   - The <;> semicolon key

SLASH	- The </> forward slash key
UP,DOWN,LEFT,RIGHT	- The arrow keys, usually on the numeric keypad for most keyboards and sometimes also in a separate location
PAD5,PADMINUS, PADPLUS	- Other keys on the numeric keypad (the <+> key on the keypad is NOT the same thing as the keyboard <+> key, at least not to *Air Warrior*)
SHIFT+,CTRL+,ALT+	- Combination keys; <SHIFT+A> means to execute that command you would have to hold down the <SHIFT> key and then press <a>.
JOYSTICKA1	- These are "keys" on the joystick - really joystick buttons
HATCENTER	- If your joystick has a "hat" key, *Air Warrior* will use HATXXXXX to describe the various positions it can be in.
VIEWSHIFT+	- Special indicator to indicate the key after VIEWSHIFT
	VIEWSHIFT has two commands; one for normal operation and one which is activated when the "alternate view" command key has been pressed. The VIEWSHIFT+ modifier shows which command should be executed when the alternate view key has already been pressed.
#46	- When you see a # followed directly by a set of digits, it's a special signal for *Air Warrior* to look for the "scancode" for that key. You SHOULD NOT change these values.

The rest of the keys in the left-hand column are fairly self-explanatory. You will find a summary of them in *Keymap* online help with the KEYMAP /H command.

For the right hand column: if you are unsure of what a particular action a command results in, look it up in Section 3 of the *Air Warrior Operations Manual* before you change its key value in the left-hand column. Keep in mind that many commands only take effect when you are in Film mode.

The +HOLDDOWN modifier may be combined with a command, and deserves an explanation. Basically, this means that when the key in the left-hand column is pressed and held down, the command that precedes the +HOLDDOWN modifier will be executed. For example:

LEFT   LOOK_LEFT+HOLDDOWN

Air Warrior interprets this to say "when the left arrow key is pressed, show the left view from the aircraft, and keep showing it as long as the key is held down."

Confusion can result when the +HOLDDOWN modifier is removed. In the above example, if +HOLDDOWN was removed, it would be reasonable to expect that when the user pressed the left arrow, the left view would be flashed briefly on the screen. In fact, nothing happens — until you press the <ENTER> key, at which point the left view is displayed and stays there.

Without a +HOLDDOWN command, the <ENTER> key is required to cause a view to be displayed. This can actually be used to your advantage by creating views in a "building block" fashion, and then activating them with <ENTER>.

Let's say you've removed the +HOLDDOWN modifiers for the keyboard views, but left the joystick ones as they are. If you now press <h> (left view) and hit <ENTER> you'll get the left view and it will stay there until you use another view sequence. But if you hit <h>, then <k>, then <m>, and then hit <ENTER>, you will see the left, up, and back views combined — your rear quarter diagonal left view. Since this is a simple keyboard sequence, it can be programmed into devices like the *Thrustmaster WCS-II* or similar keyboard controllers so you can have views that aren't available with your joystick through other means.

Using *Keymap* - the Compile Function

The COMPILE function is the opposite of the EXTRACT function - it takes a *Keymap* .KEY file and incorporates it into the *Air Warrior* game by translating it into a ".BND" file. The .BND files are basically equivalent to the .KEY files, but they are in a machine readable form which *Air Warrior* uses directly.

To compile a .KEY file that has been edited, make sure it is in the same directory as your *Air Warrior* program files, and type "KEYMAP /C". *Keymap* will compile all of the .KEY files present in that directory. You can compile a particular .KEY file by supplying the file name after the /C. For instance, if you were editing the map for the CHPRO products, you would type:

C:\> KEYMAP /CCHPRO

As with extracting, DO NOT put a space between the /C and the map file name.

If there are no errors reported, you should now be able to start the *Air Warrior* program and use the new command keys you created.

Caveats

Keep in mind that *Keymap* is a fairly simple utility that doesn't do much automatic checking to see if you've made mistakes. If you create a command list that is missing a vital command like engine start, *Keymap* won't really notice. It <u>will</u> tell you if you've used an incorrect keyword in the columns, but it won't give you much help on what was wrong about it.

With this in mind, make backup copies of your modified .KEY files before you make subsequent changes to them. And if your .KEY file becomes hopelessly mangled, use the KEYMAP /E command (with no control set specified) to re-extract the default maps from the *Air Warrior* program, and start again.

Keymap cannot be used to create keyboard macros — sequences of multiple commands associated with a single keystroke. *Keymap* can only process one command (and possibly a modifier) for each key. If you want to have one key perform multiple commands, use the macro function built into the *Air Warrior* program itself (see Section 3 of the *Air Warrior Operations Manual*).

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