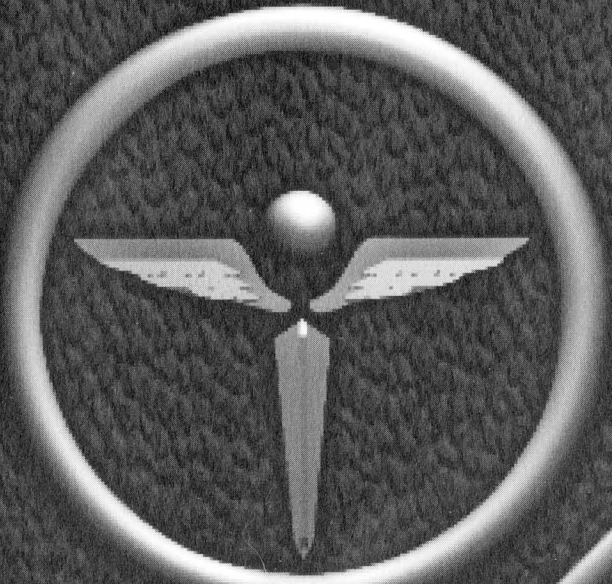
WING COMMANDER®

ACADEMY™

TCSN Academy Simulator Handbook



WORDS FROM THE AUTHOR

After I graduated from the Terran Confederation Space Naval (TCSN) Academy, I was immediately assigned to fly missions against the Kilrathi. The flight simulator at the Academy had taught us basic combat strategies, given us a feel for the different ships and cockpits and acquainted us with fighters from the Kilrathi fleet. But the simulated missions we flew at the Academy were hardly comparable to a real-life dogfight. With the whine of a missile lock indicator and the harsh taunts of a Kilrathi pilot reverberating in our ears, we suddenly faced completely novel situations when we flew our first dogfight. Even back then, I wanted to suggest changes that would make the simulator a more effective preparation for real-life combat. I was about to get that chance, though in a very different way than I had envisioned.

I was flying a reconnaissance mission in the Gwynedd sector when we were attacked by a contingent of *Jalkehi*. Instead of obeying my orders and remaining with the escort, my wingman Maniac broke away and engaged two Kilrathi pilots in a dogfight. In my *Epee*, I did not stand a chance against the seven accomplished *Jalkehi* pilots without cover from my wingman. I ejected from my badly damaged ship just seconds before it exploded. My injuries left me virtually blind in one eye and destroyed my career as a pilot.

Due to my otherwise spotless record, I was offered a teaching job at the Academy. Eventually, I became responsible for instruction in the simulator. The destruction of my ship and many other tragic losses could have been avoided if simulated missions had prepared students more thoroughly for combat in space. Consequently, I've tried to make the simulator a more realistic learning tool that will re-enact almost any situation you might run into during your missions. The simulator room has, in effect, become the most important instructional feature of the Academy. We have since implemented new sound effects, varying wingmen personalities and several other features that emulate combat in space like it has never been simulated before. Simulations are on the cutting edge of technology, allowing you to encounter ships and weapons currently still in development. If you can beat the hardest missions in this simulator, you will graduate truly prepared for real-life combat. This manual was compiled as a summary of the most important theoretical knowledge necessary to fly simulated missions. Familiarize yourself with these notes and you will be well prepared for your first lesson in the simulator. With the help of the new TCSN simulator we can teach you how to beat the Kilrathi.

Colonel Jack A. Lombard

TCSN SIMULATOR

The Wing Commander Academy trains every student in a variety of different classes and exercises that will adequately prepare him or her for real-life combat in space. In our effort to save the Confederation from the depredations of the Kilrathi, we can only afford to send the very best pilots out to defend our homes. Innumerable hours of training, classes and simulator practice turn our students into ace Confederation pilots before they launch their first actual mission.

In my opinion, the tcsn flight simulator is by far the most important educational tool this academy has to offer. The simulator will not only teach you how to fly, but more importantly it will show you how to survive. In the countless simulated missions you embark on during this part of your training, you will fight Kilrathi ships and Kilrathi pilots in hijacked Confederation ships. You will endeavor to blow enemy capital ships out of space and defend your own space station against attacking forces. Since the simulator is programmed to realistically imitate real conditions in space, it will also teach you how to effectively navigate asteroid and mine fields and retrieve ejected pilots or data capsules from space. The TCSN flight simulator will show you what you really came here to learn. Use it wisely, and the lessons you learn at this console will save your life when you actually face a swarm of Kilrathi in a grueling dogfight.

SIMULATOR ROOM

If this is your first visit to the simulator, take a few minutes to familiarize yourself with your surroundings before you concentrate on the command console. You enter and exit the simroom through a small door from the DOS area of the Academy. The simroom itself consists of a tiny, oval room with a vaulted dome roof. A screen above the center console lists the high scores that have so far been achieved by other students, given with their call-signs.



COMMAND CONSOLE

Exit to DOS

Simulator Configuration Panel



Simulator Configuration

To the right of the computer console you see a wall panel. Lean over to the panel and press on it once. The panel slides back into the wall, revealing a simulator configuration menu for Music and Sound FX as well as a joystick calibration option. Pressing the buttons MUSIC and SOUNDFX once toggles their respective functions between active and inactive.

You may also want to calibrate your joystick before you embark on your first simulated mission. Press CALIBRATE JOYSTICK and follow the instructions that appear in the joystick slot. If you have configured Music and Sound FX to your liking and you want to save your selection, touch the option menu anywhere except the two selection buttons. The simulator will save your selection and the wall panel will slide back in place.

If you have already designed a mission and you want to fly your last mission again, you can push the buttons located on the right side of the simulator console once to activate the simulator and execute the mission immediately.



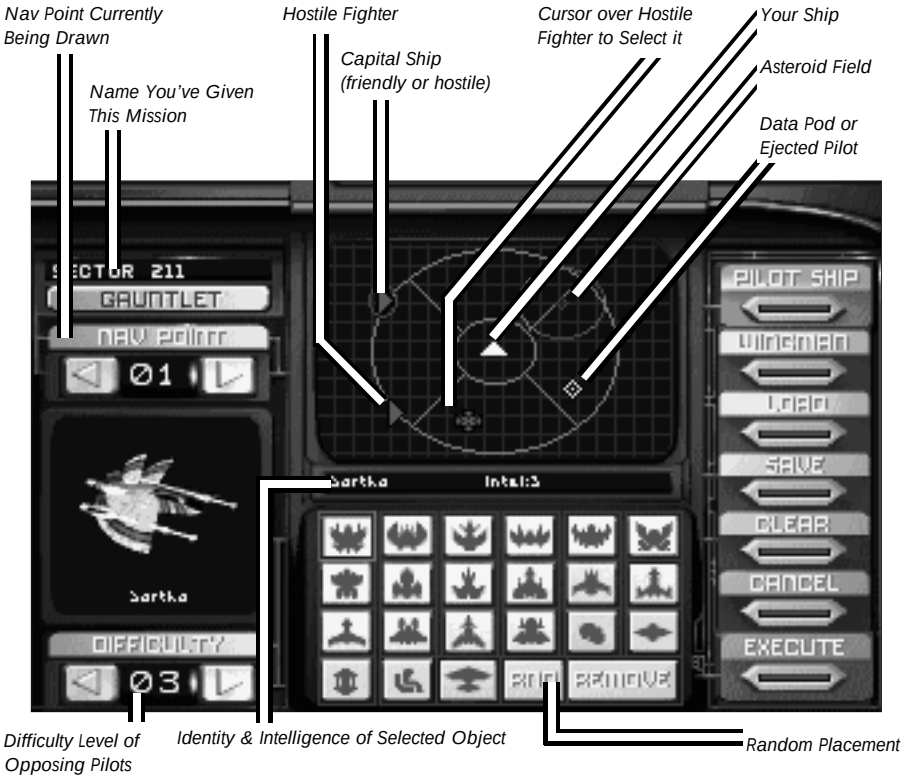
COMPUTER CONSOLE

Configuring Your Mission

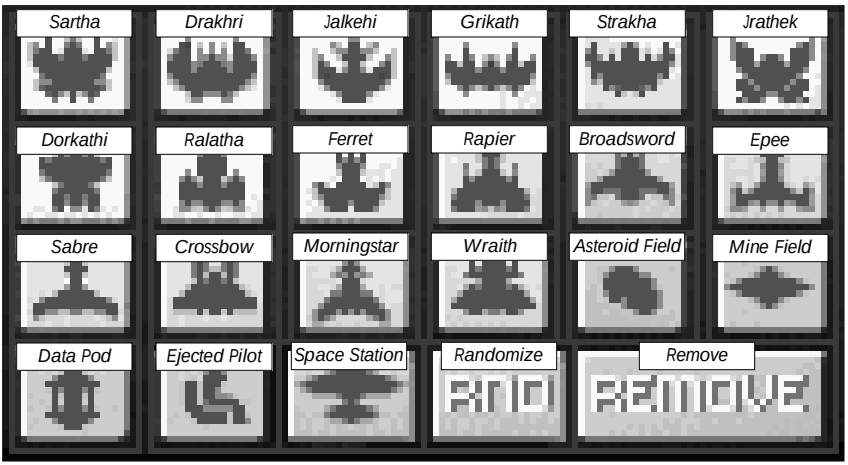
You are now ready to turn your attention to the heart of the flight simulator: the computer console. Once you have taken a seat, click on the computer screen in front of you to activate the simulator. While you are configuring your mission at the computer console, you may select your choices by clicking with the left or the right mouse button. Once you are in the cockpit of your simulated fighter, however, you must take care to distinguish between the left and the right mouse button. Please check the *Reference Card* for further details.

The large view screen in the upper half of the console is the "drawing board" of the simulator. The green triangle in the center of the screen represents your "ship." You are free to place various combinations of enemy ships, capital ships, space stations, obstacle fields and other objects around your ship.

- To select a specific kind of opponent, hazard or object, click on the appropriate button located below your view screen.
- A single click on one of the buttons causes a rotating graphical representation of the object to appear in the window at the lower left of the console. The thin box just above the rows of buttons identifies the object you chose.
- Select the particular ship or object you wish to include in the mission you are configuring by clicking on it. Hitting ENTER selects any object currently located under your cursor.
- You must also specify the difficulty level (intelligence level) of each hostile ship before placing it in the action sphere around your fighter. Use the arrow keys of the difficulty level option at the bottom left of your console to choose an intelligence (from 1 to 4) for each hostile ship. The higher the intelligence number, the more accomplished your opponent will be.
- Once you have decided where you want this hostile fighter or object to appear relative to you, single-click on the desired position on your view screen.
  - If you have positioned a hostile fighter, a red triangle appears to indicate its position.
  - Capital ships and the friendly space station are identified by a red triangle surrounded by a circle.
  - Asteroid fields appear as large red circles on the mission display screen.
  - Mine fields appear as yellow circles on the mission display screen.
  - Data pods and ejected pilots are represented by yellow diamonds.
- You may place up to eight different objects in the action sphere around your ship. You can only place one obstacle field and a maximum of four *Ralathas* in each action sphere. (No ship has enough ammunition to destroy more than four of these formidable fighters.)
- As mentioned above, moving the cursor over each object causes a description to appear in the thin box between the drawing board and the rows of buttons.
- If you made a mistake or you simply decide to remove a particular object from the action sphere, click on remove in the bottom row of the object buttons. Then move your cursor to the ship or object you want to remove and single-click on it. Clicking on the clear button in the right column on your option menu (or typing C) removes all objects you have placed in the action sphere surrounding your ship at the currently selected nav point. If you hit clear again, the simulator will ask you whether you want to clear all nav points. Press Y to clear all nav points.
- You may want to configure a mission with a variety of objectives at different nav points. Once you have placed all desired objects in Nav 1, select Nav 2 with the nav button to the upper left side of your console. Selecting a new nav point automatically clears your "drawing board" and allows you to design a new sub-mission. You can configure missions with anywhere from one to four different nav points in this manner.



COMPUTER CONSOLE



SELECTION BUTTONS

Randomizer and Gauntlet Options

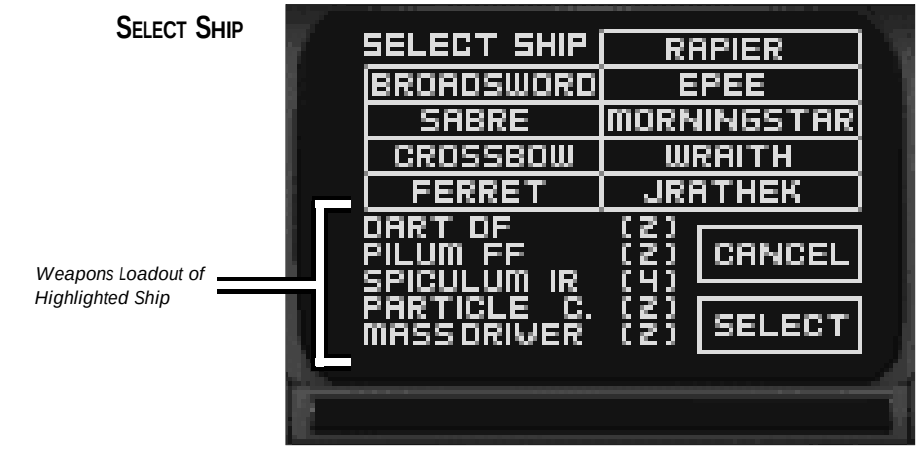
If you prefer the unexpected, try the Randomizer and Gauntlet options. The Randomizer button is located in the bottom row of buttons. Select the RND button, click anywhere on the viewscreen and this feature will generate unpredictable patterns of objects and hostile ships at the selected nav point. This option is particularly useful in preparing you for the unpredictability of combat in space.

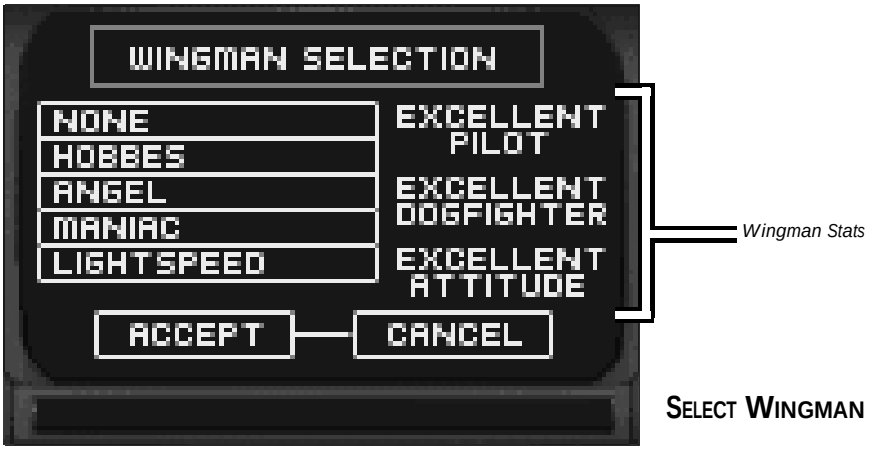
The GAUNTLET option button, located in the top left corner of your simulator console, introduces you to yet another kind of combat experience. Using this option, you fly against wave after wave of enemy fighters. You can fly up to fifteen different levels comprising three waves each, although few students at the TCSN Academy have successfully completed the gauntlet even once. As you progress from wave to wave, difficulty will increase along with the skill of your formidable opponents.

If you manage to achieve a high score, you will be asked to enter your call-sign. Your high score and your call-sign will be displayed on the screen above the console in the simulator room so you can compete with yourself and other pilots in training at the Academy.

Selecting Your Ship

The strategies you employ in any given mission depend not only on the situation you are facing, but also on the kind of ship you are flying. You need to know what weapons you have at your disposal and whether you can rely on help from a wingman or not. The TCSN simulator allows you to select your fighter and your wingman.





SELECT WINGMAN

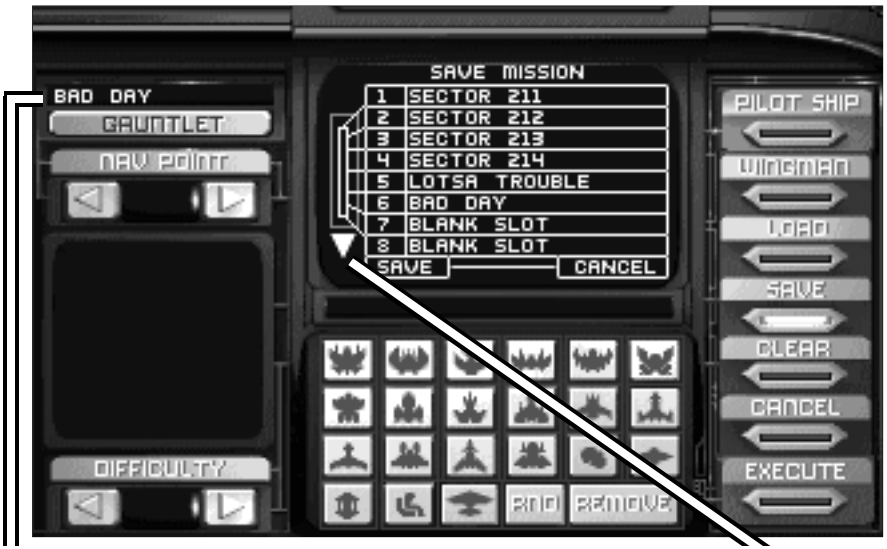
Pressing the SELECT SHIP button, in the upper right corner of your console, (or hitting P on your keyboard) brings up an option screen with the different ships you can choose to fly. When you select a particular ship by single-clicking on it, the screen will also indicate the ship's weapon loadout. Once you have decided which ship you want to fly this mission, and have clicked on it, hit SELECT to save and return to the main option screen. Press CANCEL if you want to return to the main option screen without saving your choice.

Selecting Your Wingman

We have taken four pilots from the ranks of the Terran Confederation and used their profiles to model the wingmen in this simulator. You may recognize some of these fighters from your readings in class. The WINGMAN button located in the right column on your console (or W on your keyboard) calls up an option screen with five different wingmen options. If you choose NONE, you will fly this mission alone. Selecting one of the wingman names by single-clicking on it shows you a portrait of the pilot and informs you about piloting and dogfighting skills as well as attitude. Choose the pilot you want on this particular mission (or choose NONE) and hit ACCEPT to save your choice. CANCEL returns you to the main screen without saving a wingman choice.

Saving a Mission

If you have created a mission that you wish to save, you must first type a name for the mission into the slot allocated in the top left corner of the console. When you select the slot (press TAB until you highlight the slot you want, or click on the slot), a cursor will appear. You can now use BACKSPACE to erase the current name in the slot. Enter the new mission name and select the SAVE button in the right hand column of your computer screen (or hit S on your keyboard). A new option menu with numbered slots will pop up. When you click on a numbered slot, the mission name you just entered will appear. You are also free to move this mission to any slot you wish by dragging it. (Click-and-hold the pointer on the name, drag the pointer to your preferred slot, and release the mouse button.) Once you have placed the mission name in the desired slot, hit SAVE to return to the main console. You may save a total of 24 games in this manner. If you decide to save a new mission in a slot which already contains a mission name, the simulator will overwrite the old data with the new mission. You will be asked whether you want to overwrite the currently saved mission or not. If you change your mind and decide not to save your mission after all, you can escape to the main screen by clicking CANCEL.



Name You're Giving to Mission Being Saved

SAVING A MISSION

Press to Display More Saved Mission Slots

Saving a Mission on a Floppy Disk

If you want to save a mission onto a floppy disk, you must first save the mission in one of the allocated slots. Note the slot number(s) of the mission(s) you are transferring to a floppy, then exit to DOS on the simulator computer and insert a disk into the desired disk drive. From the C: prompt, type:

CD\WCA\MISSIONS

(If you installed the game in a directory other than the default directory, type the name of that directory instead of "WCA" here, and anywhere else it appears in this section.) You are now in the missions subdirectory of WCA. At the prompt, typing DIR will provide you with a list of all available saved missions. The missions are listed by numbers and not by their names, so you must remember the slot number of the mission you wish to save. To copy onto your disk, type:

COPY C:\WCA\MISSIONS\MISSION.<mission number> <destination drive>

For example, you might type:

COPY C:\WCA\MISSIONS\MISSION.007 B:

When you want to upload this mission from disk and save it as a certain mission number, insert the floppy disk into the disk drive and type:

COPY <source drive>:\MISSION.<mission number> C:\WCA\MISSIONS\MISSION. <desired mission number>

For example, you might type:

COPY B:\MISSION.007 C:\WCA\MISSIONS\MISSION.008

(If you inserted the disk into drive A:, enter A: instead of B: as the source drive.)
Now the saved game will appear as a saved mission in slot number 8.

Loading a Mission

If you want to play a mission that was previously saved, you can retrieve it by clicking on the LOAD button, in the right column of your computer console (or typing L on your keyboard). The new option screen will show you 24 numbered slots with the saved missions. Select the game you want to load and click on LOAD to confirm your choice. This will return you to the main menu on the console. If you change your mind, you can always go back to the main screen by hitting CANCEL.

Other Console Functions

CANCEL. Should you decide you are not ready to fly a mission right now, you can click on the CANCEL button, in the right column of the computer console, (or hit ESC on your keyboard) to deactivate the simulator. You can exercise this option if you wish to re-configure your Music and Sound FX selections in the wall panel of the simulator room or if you want to leave the simulator room through the DOS area of the Academy.

EXECUTE. Selecting the EXECUTE button (or typing X) will let you fly the mission you have just configured or loaded. The walls of the simroom light up and then fade away. In a few seconds you find yourself in the cockpit of the ship you have chosen to fly.

IN THE COCKPIT

Once you have instructed the simulator to execute your mission, you find yourself in the cockpit of your chosen fighter. The introductory class *Confederation and Kilrathi Ships* has already provided you with basic information on ships and fighter cockpits. However, this will be your first experience in a "real" cockpit. When the TCSN simulator begins to execute your mission, the gauges and indicators of the ship you have chosen appear as the simulator emulates a real fighter. Initially, you see space through the front view screen of the simulator cockpit. You may also select rear and side views, as well as chase plane, missile, battle, tactical and tailing views.

The TCSN simulator allows you to choose between nine ships to fly. Even though each cockpit may look very different, all but one differs only in the way their instruments and readouts are arranged. (The *Ferret* has one less display than other ships.) Evaluating the information from all controls and gauges at one glance should become second nature to every competent fighter pilot. In combat, you will only have a split second to assess the situation and act on the information given to you. Your ability to remain on top of every development may mean the difference between life and death to both you and your wingman. If you require more time to plan your next move, you can always hit P on your cockpit keyboard to pause the simulation. You should keep in mind, though, that this is not an option you have when you are flying real-life missions in the dangerous vacuum of space.

Views During Spaceflight

The front view screen provides you with a clear view of space directly ahead of you. A green circle with cross-hairs indicates where your ship's guns are aimed. Brackets appear around the ship you have currently targeted. Hostile targets are framed by red brackets, friendly vessels by blue brackets. A ship communicating with you will be indicated by white brackets. As soon as a target is locked, the brackets turn into a solid box.

Hit F2 on your cockpit keyboard if you want to go to the left view (or the left turret, if there is one available on the ship you are flying). Similarly, you can call up the right view (or the right turret) by pressing F3. If your fighter has a rear turret or you want to see the rear view, hit F4.

In addition, the simulator has implemented additional views that are designed to help you evaluate your situation and the movement of your fighter. Chase plane view, battle view, tactical view, missile camera view and tailing views are called up by F5, F6, F7, F8 and F9 respectively.

- In chase plane view (F5), the camera tails your ship so you can view your fighter from immediately behind it.
- The battle view (F6) provides you with a panoramic shot of all ships and their respective positions from a distance. This view makes it easier to evaluate your current situation.
- The tactical view (F7) shows you another battle view from farther away and at a different angle. Neither battle nor tactical view may be activated unless you are being attacked by enemy ships.
- The missile camera view (F8) keeps a missile in its sights after it has been launched, following it to its target. This perspective provides you with a dramatic view of the effectiveness of your deadly weapons loadout.
- You may toggle through tailing views for several different ships by pressing F9 repeatedly. The tailing view provides you with a chase plane view for all ships in the area.

If you wish to return to the front view screen, hit F1.

Radar Display

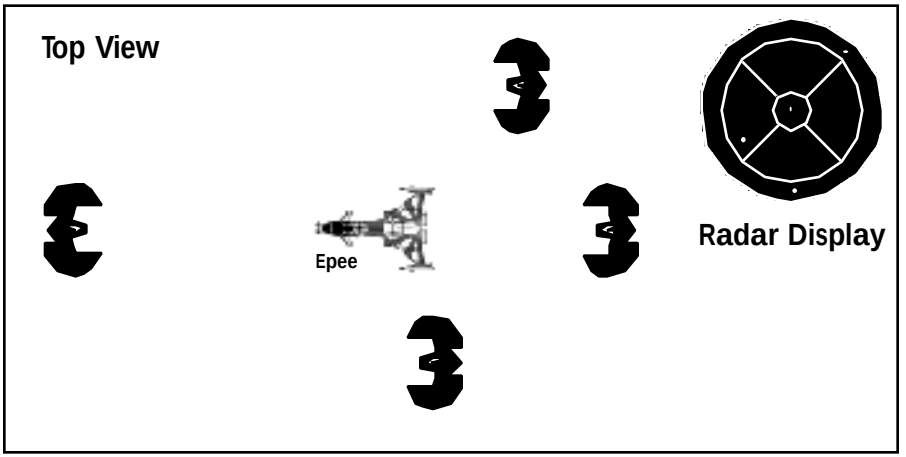
The circular screen in your cockpit is a radar display. This screen does not indicate distance to a particular ship. Instead, the six sections of the display show you how far you must rotate to be able to see that ship through your front view screen. While this is the single most important screen in your cockpit, it may sometimes also be the least intuitive. Use your experience in the simulator to become an expert at radar interpretation. In space combat, your ability to evaluate the provided radar information may save your life.

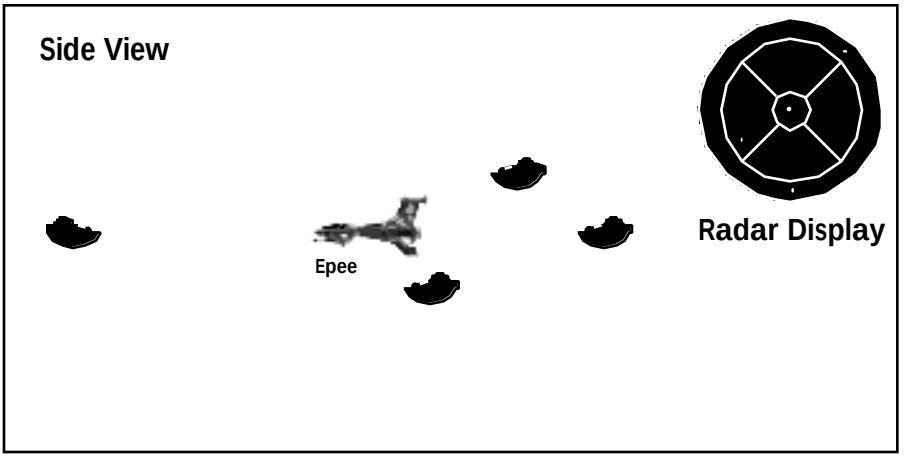
Objects detected by your radar system are displayed as dots. A dot in the outer ring tells you your enemy is behind you. The innermost ring indicates the position of ships ahead of you. The other four sections place the detected object alongside, above or below you.

The dots on your radar are color coded:

- red indicates an enemy ship
- blue indicates a friendly fighter
- gray indicates the friendly space station
- yellow indicates an ejected pilot, data capsule or enemy missile streaking toward you

RADAR SCREEN





Left VDU (Visual Display Unit)

Damage Status. From time to time, the left VDU shows a profile of your fighter and its current status. When you begin taking damage, this profile appears on your left VDU along with a message indicating which system was damaged or destroyed. Pressing D also brings up a damage report, indicating how seriously your ship has been hit. Undamaged components appear in green, while damaged systems are displayed in red, along with an identification of the affected system.

Weapons. You can call up your weapons display by pressing W or G on the keyboard of your simulator console. The text on the screen tells you which guns and weapon systems are currently active. One type of gun and one weapons system can always be active at the same time. With the FULL GUNS option, all guns are active simultaneously. The ship profile displays where each weapon is located and which are damaged or missing. If you press W repeatedly, the simulator cycles you through available weapons systems (missiles, torpedoes, chaff pods). Typing ALT-ENTER on your cockpit keyboard at any time during flight releases chaff pods into space. Pressing G allows you to see the different possible guns. (Weapons of the Terran and Kilrathi Fleets lists "guns;" all other systems are accessed through W.) With the FULL GUNS option, all guns are fired simultaneously, giving you maximum firepower. However, this option also consumes power at an alarming rate, so it should be used sparingly.

Note: The Ferret *is the most primitive patrol fighter in the simulator and has no left VDU in its cockpit. Pressing* W, G *or* D *will have no effect in this ship.*

Right VDU

The right VDU displays important information essential to the successful completion of a mission.

Communication Screen

Pressing C on the keyboard brings up the Communications screen, which shows you your communication options. These options include such important actions as giving your wingman orders or taunting the enemy. C also clears incoming communication messages from the VDU screen. V toggles between enabling or suppressing the video that accompanies incoming communication.

Targeting Screen

When you fire your ship's guns, the Targeting Screen appears automatically, indicating the status of the ship you are currently targeting. This screen can also be brought up by pressing T on your keyboard.

Note: The center VDU in the Ferret *functions as the right VDU.*

Armor and Shields Indicators

Displays on the screen of your cockpit indicate the status of your ship's shields and armor. These protective devices diminish with increasing damage to the ship. Shields gradually regenerate unless the shield generator has been destroyed. Once shields have been penetrated, armor begins taking damage. Unlike shields, armor cannot regenerate.

Fuel Indicator

This display tells you how much fuel you have. Using your afterburners may well be the best strategy to extricate yourself from a dangerous situation or zero in on the enemy, but your afterburners also expend a great amount of fuel.

Speed Indicator

The speed indicator consists of two gauges. "Set Speed" indicates the speed your fighter tries to maintain on its own (comparable to the cruise control in a car). "KPS" shows the ship's current speed in kilometers/second. Press + to increase your speed. To slow down, press – . (If you are flying your mission using a joystick or mouse, please refer to the *Reference Card* for the equivalent commands.) If you need to ignite your afterburners, press TAB, double-click joystick button #2 or double-click the right mouse button. The longer you press, the longer they will remain active. However, don't forget that they require an enormous amount of fuel.

Blaster Indicator

This gauge indicates the power level of your ship's active guns. If you use your guns frequently, the power level of the gun capacitors tends to diminish. Neutron guns, reaper cannon and particle cannon use up blaster power more quickly than laser cannon or mass drivers, so use them with caution. The FULL GUNS option depletes your blaster power even more quickly. Your guns will not fire at all if you (temporarily) run out of power — you have to wait until the capacitors have at least partially recharged. A gun's power regeneration is slower if your shields are regenerating at the same time.

Eject Warning

If your fighter has sustained significant damage, the eject warning light will begin to flash. At this point you must assess the situation and decide whether or not to abandon ship. If you decide to keep fighting, your ship will probably "explode," with you in it. The ramifications are much more severe in real life than in the trainer — don't get in the habit of ignoring the eject warning just because you can safely do so in the simulator.

If you eject (by pressing CTRL-E), the flight simulation will end and you will find yourself seated at the simulator console ready to fly a new mission. In real life, however, you would probably have to suffer a tongue-lashing, disciplinary action, a reduction in rank or even capture. On the other hand, you would probably also live to see another day. The choice is yours.

Gauntlet Mode

During a gauntlet run, typing S on your cockpit keyboard will command the TCSN simulator to show your current score, level and wave on your right VDU. In this way, you can keep track of your kills even during the simulation.

Other Cockpit Commands

Music and Sound Effects. Should you decide you want to activate or deactivate music or sound effects during your simulation, don't interrupt your space-flight. Typing CTRL-M and CTRL-S will toggle on and off music and sound effects, respectively.

Pause. If the action gets too hot or the outside world intrudes, press P to pause the game. Press any key or button to resume play.

Exit. If your time in the simulator is up or you want to interrupt your flight for some other reason, you can deactivate the simulator and return to the DOS area immediately by typing ALT-X.

Change Speed. If ships in the simulator are too fast for you, press ALT- + to slow the simulator's frame rate. If they are too slow, press ALT- – to increase the frame rate.

IN-FLIGHT SYSTEMS

Targeting System

When the Targeting System is activated by pressing T, your Targeting screen displays a profile of the ship you have targeted, as well as any damage the target has already suffered.

When the targeting feature is active, one ship in your view screen will automatically be targeted. Red brackets indicate an enemy ship. Friendly ships will be bracketed in blue. Even if there is more than one ship visible through your front view screen, brackets will only appear around one ship. Press T repeatedly to toggle through the different ships in sight and select your desired target.

Your targeting system automatically locks onto ships that appear through your view screen, providing you with a tracking mechanism that keeps an enemy ship in its sights. If you press L while a target is in your view screen, your targeting system will continue tracking the ship even if it disappears from view, allowing you (for example) to keep track of a particular ship you've already damaged. A perpetually locked target is indicated by a solid box instead of brackets. This targeting lock just keeps track of the position of various ships around you. It does not correspond to the locking system automatically used by an active missile to lock onto a target within a certain range before it is launched.

Improved Targeting and Tracking System (ITTS)

Many of the more sophisticated fighters employ the ITTS, a system that calculates how much you must lead your target in order to maximize your chance of a hit. When you lock onto a target while flying a ship with an ITTS, a red cross appears on the screen. If you line this cross up inside your main crosshairs, you are much more likely to hit your target. The *Ferret* and *Rapier* are not equipped with ITTS.

Tractor Beam System

To activate the tractor beam system (if you have one), go to your rear turret. Hit G to cycle through your guns until the tractor beam is selected. Once you have selected the tractor beam, a solid yellow box automatically appears around any retrievable object (a data capsule or an ejected pilot) within range. To activate the tractor beam, hit the fire button on your mouse, joystick or keyboard. *Be sure that you have selected the tractor beam, not an actual gun, before firing!*

Autopiloting System

To shorten the length of travel from nav point to nav point, you will normally want to engage the autopilot feature. The autopilot activates only if there are no hazards such as enemy ships, mines or asteroids in the area. When the coast is clear, press A to activate autopilot and AUTO will light. If there are still hazards in the area, the autopilot function will not activate.

Autopilot disengages a few thousand meters from your destination, or any time there is a threat nearby.



Communications System

The Communications System may be activated by pressing C on the keyboard of your simulator. The Communications screen then presents you with the potential recipients of your message — the currently targeted enemy or your wingman. If there is only one possible recipient in the area, you don't need to designate the receiver — the simulator will skip over this option screen and immediately present you with the next screen (see the following paragraph). Each receiver is listed by number. Select the desired receiver by pressing the appropriate number key.

Then, a second menu will appear with different messages you can send, listed by number. Press the appropriate number key to select your desired message.
When other pilots communicate with you, a white box appears around their ship in your view screen. You can read their messages at the top of your screen. If you want the incoming messages to stay on your VDU longer or disappear more quickly, you can adjust the message speed by pressing M at any time during spaceflight. Pressing M repeatedly will cycle you through message speeds from 1 (shortest) to 5 (longest).

Wingman Orders

Break and Attack (ALT-B). This commands your wingman to leave the current formation and engage all hostile fighters within 12,000 meters. However, he will not attack a capital ship until you do.

Keep Formation (ALT-F). This commands your wingman to stay in formation if he has asked to break and attack on his own. It does not apply if your wingman is not currently in formation.

Form on My Wing (ALT-F). This commands your wingman to return to your side and resume the formation you were flying in previously. This applies when your wingman has broken formation to attack an enemy.

Help Me Out Here (ALT-H). This commands your wingman to engage the enemy attacking you.

Attack My Target (ALT-A). This commands your wingman to attack the enemy you currently have targeted. This is the only way your wingman will attack an enemy capital ship. However, capital ships can only be destroyed with torpedoes, Mace missiles or Leech missiles — if your wingman doesn't have any of these, he will ignore this command.

Keep Radio Silence (no ALT combination). This prevents your wingman from communicating with you until the "Broadcast freely" message is sent.

Broadcast Freely (no ALT combination). This lets your wingman communicate with you. It is the opposite of "Keep Radio Silence."

Damage Report (ALT-D). This commands your wingman to transmit a damage display of his ship, which appears in your right VDU and is automatically updated. You can cancel this command by pressing T or C.

Taunting the Enemy

When you have an enemy ship targeted, activating the Communications System (C) and selecting the enemy will bring up a menu of different taunts. Select one of these to insult and infuriate your target. You can also send a random taunt at any time during the game by pressing ALT-T. In a real-life dogfight, taunting your enemy can serve a valuable purpose. An enemy that is furious and distracted makes fatal mistakes more easily. If you remain calm, it will be easier to spot your window of opportunity at the right moment.

SPACECRAFT OF THE TERRAN AND KILRATHI FLEETS

The ships in the Confederation and Kilrathi fleets come with a wide variety of designs and functions. The particular type of ship you fly during each mission will depend on your primary objective. For example, capital ships with phase shields can only be destroyed with torpedoes, Mace missiles and Leech missiles. The simulator will familiarize you with the advantages and drawbacks as well as the primary functions of each fighter. You will need to adjust your combat strategies according to what you're flying and what you're fighting. Even though you have already studied the different fighters in your *Confederation and Kilrathi Ships* class, this brief reference section should refresh your memory. Take a minute to read about each ship before you actually launch into simulator training.

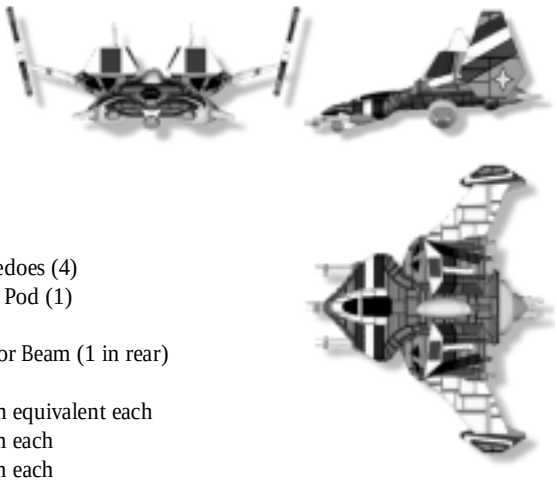
Maximum Velocity/Cruise Velocity. Ship velocities are expressed in kilometers per second (kps). The numbers are always computed relative to a stationary body (or pseudo-body) near the ship, e.g. a nearby planet, an escorted destroyer or even a value derived from the movement of all ships in the area.

Acceleration. The ratings for ship acceleration range from Bad, Poor and Average to Good or Excellent.

Max. YPR (Maximum Yaw, Pitch, Roll). Yaw describes the ability of a ship to turn to the right or left. Pitch refers to up and down movement. Roll measures the ability of the fighter to spin on its long axis. All numbers are expressed in degrees per second (dps).

Ship's Armor. The measurement of the ship's defensive armor is expressed in centimeters thickness of Durasteel (centimeters equivalent). The higher the numbers, the more effective the armor.

Broadsword



Class	Heavy Bomber
Length	36 m
Max. Velocity	320 kps
Cruise Velocity	150 kps
Acceleration	Poor
Max. YPR	5 dps
Mass	100 tonnes
Weapons	
Mass Drivers (3)	Torpedoes (4)
Pilum FF Missiles (4)	Chaff Pod (1)
Turrets (3)	
Turret Guns (2 per)	Tractor Beam (1 in rear)
Armor	
Fore and Aft Shields	18 cm equivalent each
Front and Rear	15 cm each
Left and Right	13 cm each

The *Broadsword* was originally designed as an attack bomber for enemy capital ships, but it also serves as an adequate all-purpose fighter. Poor acceleration and maneuverability may force the *Broadsword* to take several hits from hostile fighters, but strong armor and shields and a wide array of weapons make it a formidable enemy. Keep in mind that the *Broadsword* is equipped with turrets on both sides and the rear of the ship and several missiles. If it manages to get close enough to a capital ship, it can successfully penetrate phase shields with its four torpedoes. A tractor beam allows this ship to perform retrieve-and-rescue missions in space.

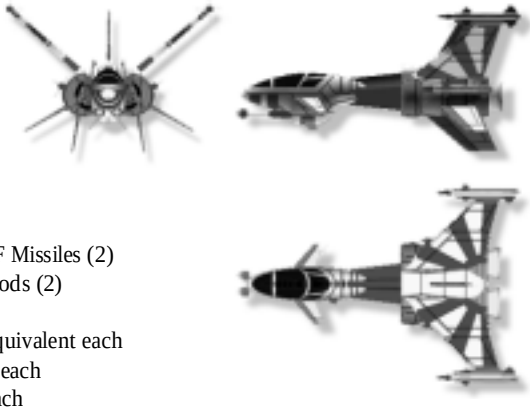
Crossbow



Class	Bomber
Length	24 m
Max. Velocity	370 kps
Cruise Velocity	200 kps
Acceleration	Average
Max. YPR	8 dps
Mass	40 tonnes
Weapons	
Neutron Guns (2)	Torpedoes (4)
Pilum FF Missiles (3)	Mass Drivers (3)
Rear Turret	
Turret Guns (2)	
Armor	
Fore and Aft Shields	*25* cm equivalent each
Front and Rear	20 cm each
Left and Right	25 cm each

The *Crossbow* is a formidable Confederation anti-capital ship bomber. It combines impressive armor and shields with good maneuverability and traveling velocity. The fighter is equipped with torpedoes, Friend-or-Foe missiles and an array of blasters that include a rear turret. It was a contingent of *Crossbows* that destroyed the *Grakneth' Dak*, a Kilrathi capital ship first sighted near Gorath.

Epee



Class	Light Fighter
Length	12.4 m
Max. Velocity	480 kps
Cruise Velocity	250 kps
Acceleration	Excellent
Max. YPR	10 dps
Mass	13 tonnes
Weapons	
Particle Cannon (2)	Dart DF Missiles (2)
Javelin HS Missiles (2)	Chaff Pods (2)
Armor	
Fore and Aft Shields	6 cm equivalent each
Front and Rear	3.5 cm each
Left and Right	3 cm each

The design of the *Epee* is very similar to that of the *Ferret.* It also demonstrates excellent acceleration and velocity, and maneuvers even better than the *Ferret.* While its shields and armor are equally unimpressive, it does carry missiles, chaff pods and more sophisticated blasters. The renowned Confederation pilot Daredevil met his end in the Enigma Sector when his *Epee* fighter was downed by three *Jalkehi* pilots.

Ferret







Class	Patrol Fighter
Length	10.2 m
Max. Velocity	500 kps
Cruise Velocity	360 kps
Acceleration	Good
Max. YPR	8 dps
Mass	10.5 tonnes
Weapons	Mass Drivers (2)
Armor	
Fore and Aft Shields	6 cm equivalent each
Front and Rear	6.5 cm each
Left and Right	4.5 cm each

The *Ferret* is the fastest light fighter in the Confederation fleet. Only the *Wraith*, a Confederation ship model currently in development, will be able to fly at higher velocities than this basic fighter. The *Ferret* has very simple cockpit features, e.g., only one VDU, and it's the ship most graduating rookie pilots will be first assigned to. The *Ferret* demonstrates good acceleration and maneuverability, but it is only equipped with mass drivers and has very weak shields and armor. It is not equipped to perform rescue-and-retrieve missions or to attack capital ships.

Morningstar







Class	Heavy Fighter
Length	20 m
Max. Velocity	400 kps
Cruise Velocity	220 kps
Acceleration	Excellent
Max. YPR	8 dps
Mass	20 tonnes
Weapons	
Particle Cannon (3)	Torpedoes (2)
Spiculum IR Missiles (2)	Mace Missile (1)
Armor	
Fore and Aft Shields	15 cm equivalent each
Front and Rear	20 cm each
Left and Right	20 cm each

The *Morningstar* is generally recognized as the current Confederation state-of-the-art capital ship destroyer. It combines strong shields and armor with high maneuverability and excellent acceleration. Particle cannon and missiles make it a dangerous opponent for any fighter. However, its true strength lies in its torpedoes and Mace missile. The Mace is the most powerful weapon currently employed in space combat. Equipped with a nuclear warhead, this weapon wields more explosive force than a torpedo.

Rapier





Class	Medium Attack Fighter
Length	19 m
Max. Velocity	450 kps
Cruise Velocity	250 kps
Acceleration	Excellent
Max. YPR	10 dps
Mass	15 tonnes
Weapons	
Laser Cannon (2)	Particle Cannon (2)
Dart DF Missiles (2)	Javelin HS Missiles (2)
Pilum FF Missiles (2)	Chaff Pods (2)
Armor	
Fore and Aft Shields	8 cm equivalent each
Front and Rear	6.5 cm each
Left and Right	5 cm each

Widely used on most carriers, the *Rapier* was an instrumental force in the Vega campaign. Heavy weapon loadouts along with excellent acceleration and maneuverability make it a highly effective dogfighting ship. The *Rapier* is equipped with laser and particle cannon as well as a wide array of missiles and several chaff pods. Since its shields and armor are barely average, it is advisable to take evasive action in order to avoid enemy fire. *Dragon*, the famous Confederation pilot, flew most of the Vega campaign missions in *Rapiers*. He named it the best all-purpose dogfighter in the Confederation fleet.

Sabre





Class	Heavy Attack Fighter
Length	23.6 m
Max. Velocity	400 kps
Cruise Velocity	220 kps
Acceleration	Excellent
Max. YPR	8 dps
Mass	22 tonnes
Weapons	
Mass Drivers (2)	Spiculum IR Missiles (4)
Pilum FF Missiles (2)	Dart DF Missiles (2)
Chaff Pods (3)	Particle Cannon (2)
Rear Turret	
Turret Guns (2)	
Armor	
Fore and Aft Shields	10 cm equivalent each
Front and Rear	16 cm each
Left and Right	11 cm each

The *Sabre* is one of the best fighters ever designed by Terran scientists. It is equipped with multiple missiles, mass drivers, particle cannon and a rear turret. Keep this in mind when you attempt a rear approach. In spite of its size, the ship is fairly maneuverable and accelerates well. When you are flying a *Sabre*, you should be aware that its fore and aft shields are weak. Even though the armor is very strong, armor has no regenerating capabilities.

Wraith



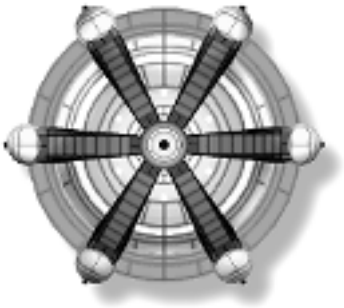




Class	Medium Fighter
Length	16 m
Max. Velocity	600 kps
Cruise Velocity	400 kps
Acceleration	Excellent, by far the best acceleration of any of the ships
Max. YPR	10
Mass	13.5 tonnes
Weapons	
Reaper Cannon (2)	Particle Cannon (2)
Leech Missiles (2)	Javelin HS Missiles (2)
Chaff Pods (2)	
Armor	
Fore and Aft Shields	20 cm equivalent each
Front and Rear	10 cm each
Left and Right	10 cm each

The *Wraith*, currently in development at the Terran Tech Laboratories in New York, will herald a new technological age in the fighter ship field. At the TCSN Academy, we are already training our next generation of elite pilots to fly this Confederation medium fighter. It is equipped with incredibly strong shields and armor. In addition to particle cannon and heat-seeking missiles, it will also carry two newly developed weapon types: the reaper cannon and the Leech missile. Its maneuverability, speed and acceleration will make the *Wraith* the fastest ship in the known universe.

Candar Space Station





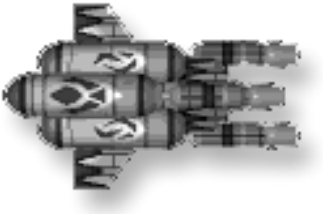
Class	Space Station
Length	400 m
Max. Velocity	20 kps
Cruise Velocity	10 kps
Acceleration	Bad
Max. YPR	1 dps
Mass	600 tonnes
Weapons	
Flak Guns (2)	
Armor	
Top and Bottom Shields	100 cm equivalent each
Front and Rear	150 cm each
Left and Right	150 cm each

The simulator has implemented Candar Station so you will learn how to defend friendly space stations. Protected by flak guns as well as strong armor, it is a hard nut to crack. However, a Kilrathi force with formidable weapon loadouts could destroy Candar if they manage to dodge you and its flak volleys since the space station is not protected by phase shields.

Dorkathi







Class	Transport (Military)
Length	95 m
Max. Velocity	200 kps
Cruise Velocity	100 kps
Acceleration	Poor
Max. YPR	2 dps
Mass	5000 tonnes
Turrets	
Flak Guns (3)	
Armor	
Fore and Aft Shields	19 cm equivalent each
Front and Rear	17 cm each
Left and Right	16 cm each

The *Dorkathi* is one of the most commonly encountered Kilrathi capital ships. Being a transport, it is not equipped with phase shield protection. Its conventional fore and aft shields are fairly weak, but the Dorkathi armor will deflect most hits from attacking fighters. Avoid the deadly flak the ship will fire at you from its three turrets. If you follow the suggested attack strategy for capital ships in the back of this manual, however, this transport should be fairly easy to dispose of.

Drakhri







Class	Medium Fighter	
Length	11.7 m	
Max. Velocity	400 kps	
Cruise Velocity	200 kps	
Acceleration	Good	
Max. YPR	7 dps	
Mass	14 tonnes	
Weapons		
Laser Cannon (3)		DF Missiles (4)
Chaff Pod (1)		
Armor		
Fore and Aft Shields		5.5 cm equivalent each
Front and Rear	4 cm each	
Left and Right	3.5 cm each	

The *Drakhri* fighter is the lightest medium fighter of the Kilrathi fleet. Its velocity and acceleration are only slightly above average. The *Drakhri*'s weak shields and armor hardly protect it from enemy hits. Its loadout consists of laser cannon and dumb fire missiles. In spite of its unimpressive design, this ship can still become a formidable enemy in the hands of an accomplished Kilrathi ace. During my duty in the Vega campaign, I barely survived a grueling dogfight with a lone *Drakhri* flown by Khajja the Fang.

Grikath







Class	Heavy Fighter
Length	17.7 m
Max. Velocity	330 kps
Cruise Velocity	200 kps
Acceleration	Poor
Max. YPR	3 dps
Mass	27 tonnes
Weapons	
Neutron Guns (3)	Torpedoes (3)
Chaff Pods (3)	FF Missiles (3)
Rear Turret	
Turret Gun (2)	
Armor	
Fore and Aft Shields	17 cm equivalent each
Front and Rear	16 cm each
Left and Right	14 cm each

When you see *Grikath* fighters attacking your space station, act quickly. This Kilrathi heavy fighter remains one of the most efficient capital ship destroyers ever designed, and played an instrumental part in the destruction of the *TCS Freedom* during the Tesla campaign. With its heavy torpedo load-out, it can wreak havoc if it gets close enough to its target. Armor and shields are strong, but maneuverability and traveling velocity are barely above average. Due to its poor acceleration, the *Grikath* is not particularly suited to dogfighting encounters. However, be careful when approaching from the rear, since it can defend itself with deadly volleys from its turret.

Jalkehi







Class	Heavy Fighter
Length	25.2 m
Max. Velocity	360 kps
Cruise Velocity	200 kps
Acceleration	Average
Max. YPR	2 dps
Mass	20 tonnes
Weapons	
Laser Cannon (4)	Particle Cannon (1)
IR Missiles (4)	DF Missile (1)
Rear Turret	
Turret Guns (2)	
Armor	
Fore and Aft Shields	15 cm equivalent each
Front and Rear	13 cm each
Left and Right	11 cm each

The *Jalkehi* is one of the best heavy fighters in the Kilrathi fleet. Even though maneuverability and velocity are only average, strong armor and shields can absorb several enemy hits. When you are fighting *Jalkehi*, you should rely on side attacks to avoid fire from the rear turret. Remember to move quickly, so the *Jalkehi* IR missiles won't have time to “memorize” your ship type. The laser and particle cannon provide the *Jalkehi* with good blaster capabilities.

Jrathek





Class	Medium Fighter
Length	20 m
Max. Velocity	500 kps
Cruise Velocity	350 kps
Acceleration	Excellent
Max. YPR	10 dps
Mass	15 tonnes
Weapons	
Photon Cannon (2)	Plasma Bolts (2)
FF Missiles (2)	DF Missiles (2)
Chaff Pods (1)	
Armor	
Fore and Aft Shields	15 cm equivalent each
Front and Rear	20 cm each
Left and Right	18 cm each

When Hajjnah, the renowned Kilrathi scientist and engineer, defected to the *TCS Viking*, he brought with him blueprints detailing the design of a Kilrathi ship currently in development. This *Jrathek* fighter has been prototyped in the TCSN simulator to prepare our students for the newest Kilrathi threat. Similar to the *Wraith*, the *Jrathek* will be equipped with strong shields and armor; in addition, its maneuverability and speed will make it the fastest Kilrathi fighter ship. However, its weapon loadout is less impressive. The *Jrathek* is the only Kilrathi ship you can both pilot and fly against in your simulation training.

Ralatha



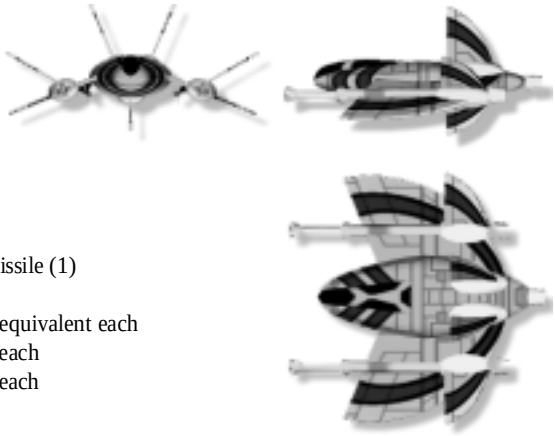


Class	Destroyer
Length	394 m
Max. Velocity	250 kps
Cruise Velocity	150 kps
Acceleration	Poor
Max. YPR	1 dps
Mass	11,000 tonnes
Weapons	
Anti-Matter Cannon (2)	Flak Cannon (4)
Armor	
Fore and Aft Shields	Phase Shields
Front and Rear	500 cm each
Left and Right	500 cm each

The *Ralatha* is one of the most sophisticated capital ships of the Kilrathi fleet. The destroyer is equipped with phase shields and multiple turrets as well as anti-matter guns. These huge blasters allow the *Ralatha* to attack other capital ships and space stations. I personally witnessed the demise of the *TCS Viper* when it came under fire from an attacking *Ralatha* destroyer in the Gwynedd sector.

Sartha

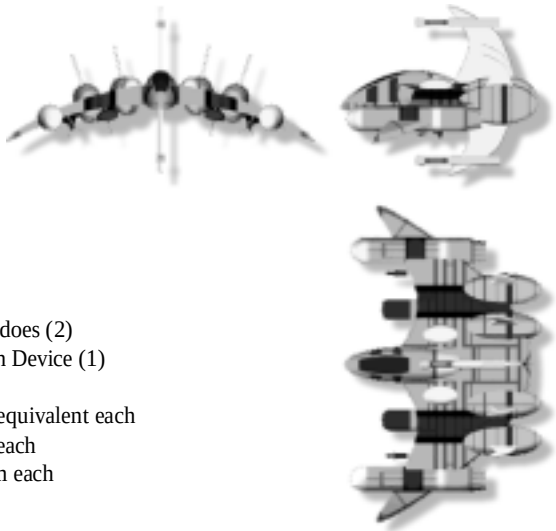
Class	Light Fighter
Length	8.3 m
Max. Velocity	400 kps
Cruise Velocity	220 kps
Acceleration	Good
Max. YPR	4 dps
Mass	12.5 tonnes
Weapons	
Neutron Guns (2)	DF Missile (1)
Armor	
Fore and Aft Shields	5 cm equivalent each
Front and Rear	4 cm each
Left and Right	3 cm each



The Kilrathi *Sartha* is a light fighter comparable to the Confederation's *Epee*. The Kilrathi fighter is slower and not as maneuverable as the *Ferret* or the *Epee*. Shields and armor are extremely weak. At close ranges, the *Sartha* can inflict damage with its neutron guns and one dumb fire missile, but these ships only pose a real threat if they surround your fighter in large numbers. During my service in the Gwynedd system, I lost a wingman to a swarm of *Sartha* pilots.

Strakha

Class	Medium Fighter
Length	17 m
Max. Velocity	320 kps
Cruise Velocity	200 kps
Acceleration	Poor
Max. YPR	4 dps
Mass	15 tonnes
Weapons	
Laser Cannon (2)	Torpedoes (2)
DF Missiles (2)	Stealth Device (1)
Armor	
Fore and Aft Shields	4 cm equivalent each
Front and Rear	4 cm each
Left and Right	3.5 cm each



The *Strakha* is a medium fighter with average traveling velocity, negligible shields and armor, and poor acceleration and maneuverability. And yet it was this fighter that destroyed the *TCS Tiger's Claw* in 2654. The *Strakha* was the first (and, to this date, only) Kilrathi ship equipped with a previously-unknown cloaking device that allowed the ship to vanish from sight without a trace. With its torpedoes, the *Strakha* contingent then proceeded to annihilate the *Tiger's Claw*. We have since received confirmation of this device through Hajjnah, the brilliant Kilrathi scientist and engineer who defected to the Terran Confederation two years ago.

WEAPONS OF THE TERRAN AND KILRATHI FLEETS

Strategies in space combat depend not only on the ships you and your opponents are flying, but also on the weapon loadouts of every fighter. For example, if you know your enemy only has short range blaster capabilities and no chaff pods, you will try to eliminate him at long range with particle cannon and missiles. If you are attacking a enemy capital ship with phase shields, you will use different weapons than if you're attacking a *Dorkathi* transport without such defenses. An intimate knowledge of ship loadouts and weapon characteristics is absolutely vital to your survival in space. This section summarizes the most important weapon features of all Kilrathi and Confederation weapon systems.

DEFENSIVE WEAPONS

Flak Gun. Capital ships rely primarily on heavy flak barrages for protection. The massive explosive force and the high velocity of these weapons will down almost any ship immediately. With their great accuracy, flak guns are also employed for point-defense against torpedoes.

Chaff Pod. Chaff pods provide an efficient method of diverting missiles that are currently targeting your ship. Missiles will home in on the chaff, rather than your ship, and explode harmlessly. Chaff pods must be released shortly before impact of the missile. Once you have released chaff, hit your afterburners and escape from the danger zone. Chaff only diverts missiles currently targeted on you. Any missiles that lock onto you after the pod has already been released will not be diverted.

Phase Shield. These protective devices are the latest in defense technology and render any capital ship impervious to fighter guns and most missiles. Torpedoes, Leech missiles and Mace missiles are the only weapon systems capable of penetrating these shields.

Stealth Device. Kilrathi forces have developed stealth technology that renders their ships completely invisible to our detection technology. We have emulated this phenomenon in our simulation of the *Strakha* ship.

OFFENSIVE WEAPONS

When a weapon is named below (e.g., Dart or Javelin), its description applies specifically to a Confederation system. However, in most cases, there is a closely corresponding Kilrathi weapon.

Missiles

Dart Dumb Fire Missile (DF). This missile system is a point-and-shoot weapon with no homing capabilities. Reserve this weapon for use against slow targets at medium to close range when you can easily anticipate the enemy's next movement.

Javelin Heat-Seeking Missile (HS). This weapon zeroes in on any recognizable source of heat, so it can only lock on to a target's engine and/or exhaust system. When you have a Javelin ready, wait until you are behind your targeted enemy and the right VDU indicates a missile lock, then fire. Be careful, though. If your opponent manages to elude the missile, it will lock onto any other heat source it can find, including your own ship or that of your wingman.

Leech Missile. This missile was designed for the *Wraith* fighter currently in development. It drains its target of all energy for approximately 10 seconds, inactivating shields and weapon systems alike. Within that 10 seconds, you should have no trouble destroying your defenseless enemy. Leech missiles are anticipated to be especially effective against capital ships, where they will be capable of temporarily incapacitating phase shields and flak guns.

Mace Tactical Nuclear Missile. This missile is equipped with a nuclear warhead. Even though it has no homing capabilities, its high velocity and incredible explosive force can annihilate any enemy fighter or capital ship. Use this missile on slow targets at medium to close ranges.

Pilum Friend-or-Foe Missile (FF). This missile recognizes a distinctive signal broadcast by all registered ships of the Terran Confederation. (Hijacked Confederation ships will have been deleted from the registry.) An FF missile targets the nearest ship that isn't broadcasting. This means it will also zero in on Confederation ships with damaged broadcasting systems, including your own.

Spiculum Image-Recognition Missile (IR). If you want to shoot an IR missile at your enemy, you need to keep him in your sights for several seconds. The weapon system "memorizes" the ship type you are targeting. Then it will track the enemy until it is outpaced or it hits. This missile is a particularly lethal weapon in space combat.

Guns

Laser Cannon. Effective at ranges up to 4800 m, laser cannon demonstrate long-range capabilities far better than the neutron gun or mass driver. Laser cannon do not inflict much damage on the enemy, but they also require little power, allowing for more shots at a time.

Mass Driver. Effective at medium ranges, for average damage, the mass driver depletes blaster power a bit more quickly than a laser cannon. Although laser cannon and neutron guns may be more effective in certain situations, mass drivers can always be employed with good results.

Neutron Gun. This weapon inflicts relatively heavy damage on its target. However, it is only effective at fairly close ranges, and depletes blaster power quickly.

Particle Cannon. This cannon combine the long-range capabilities of a laser cannon with the damage potential of neutron guns, creating a highly efficient blaster.

Photon Gun. This weapon system will be part of the *Jrathek* fighter currently in development in Kilrathi shipyards. Even though photon guns deplete blaster power quickly, they also inflict significant damage on their target. With their long-range effectiveness and their high velocity, photon guns will be the only blaster weapons approaching the sophistication of reaper cannon.

Plasma Bolt. This basic blaster is being implemented on the new Kilrathi *Jrathek* fighter. Plasma bolts are only effective at very short ranges and don't inflict much damage. On the other hand, they expend very little blaster energy, allowing the pilot to employ them indefinitely.

Reaper Cannon. Similar to a particle cannon, this blaster also combines long-range effectiveness with powerful damage potential. Reaper cannon are even more powerful than neutron guns, but they also deplete blaster power very quickly. Currently in development for use on the new Confederation *Wraith*, these weapons represent our latest advances in blaster technology.

Turret Gun. This swivel-mounted gun is very similar to the neutron gun. Designed specifically for turrets on fighter ships, it can defend a fighter against rear and side approaches. A medium-range gun with high firing rates, it depletes blaster power rather quickly.

Other Systems

Torpedo. Many Confederation and Kilrathi capital ships have phase shields that render them invulnerable to most fighter weapons. Only Torpedoes and Mace missiles can penetrate these powerful shields. (Torpedoes can only lock onto capital ships.) However, during the twenty seconds they need to lock onto their target, you can't maneuver, thus exposing you to greater danger.

Tractor Beam. This retrieval system will lock onto small targets and pull them into your ship. The tractor beam is a vital tool for retrieving ejected pilots and data capsules from space.

Anti-Matter Gun. This ponderous weapon is found on capital ships and is usually only employed against other capital ships. Like a torpedo, it penetrates shields instantly and directly attacks armor. It is hard to aim and is not used to down fighter-sized craft. If you happen to get in the way, however, a single hit from this weapon is sure to annihilate your ship before you have any hope of ejecting.

MANEUVERS AND STRATEGIES

At this point, I would like to call your attention to some of the most important strategies in space combat. We have already gone over innumerable strategies and maneuvers in class at the Academy. However, it is easy to forget theoretical training in the face of a formidable enemy heading straight for you and your wingman. Even a simulator can only prepare you to some extent for this terrifying experience. The tactics listed below are of such vital importance to your survival in real-life combat that they should be kept in mind at all times. Before you launch into simulator training, you should memorize these hints until they become second nature when you are seated in a fighter cockpit.

GENERAL COMBAT STRATEGIES

Do not rely solely on spin and turn maneuvers when you are trying to take evasive action. In-flight computer systems will have no trouble keeping a lock on your ship if you are simply performing turns at constant speed.

Varying your travel velocity is the most effective way of escaping enemy fire. Hit the afterburner key while you are changing direction so you can add an element of unpredictability that will confuse your opponent.

Stopping your ship with BACKSPACE on the console is similarly effective. However, you must immediately increase your speed again or you will become a "sitting duck" and an easy target for your enemy.

Limits to Afterburners. While afterburners are the most effective method of escape, they also use up an alarming amount of fuel. You should therefore use them sparingly and in short bursts. It is a good idea to always keep a finger on the afterburner key in case you should suddenly need to escape from a danger zone.

Guns, then Missiles. Many enemy fighters are equipped with fairly strong shields and armor reinforcements. In a crowded dogfight it is advisable to weaken your opponents' shields and armor with gun fire first. Then it will be a lot easier to finish your foe off with a missile.

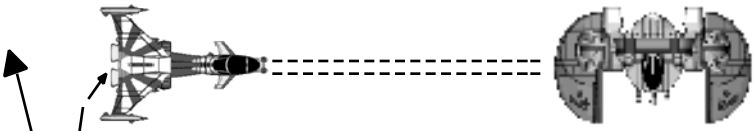
Missiles and Blasters. Once you have launched a missile against an enemy ship, make sure you give the missile some time to hit its target before you follow up with your blaster weapons. If you shoot your guns too quickly, you may hit the missile while it is still on its way to the target and it will explode harmlessly, leaving your enemy unscathed.

Maximize Blaster Power. In general, the most successful pilots are those which seek to maximize blaster power at all times. Do not open fire randomly and at long ranges or you will waste valuable power. Instead you should attempt to take evasive action until you see a window of opportunity. A few well-placed shots with full blaster power at short range will be far more effective then a barrage of shots at long range.

Afterburner Slide. One of the most effective tactics in space combat is the afterburner slide. As I have already pointed out, enemy computer systems have no difficulty keeping you in their sights if you are maneuvering at constant speeds. Velocity changes help, but they are no guarantee for your safety. If you punch the afterburners, however, then turn hard to the right or left, your ship will begin to slide. This movement is not translated perfectly by tracking systems, making it a highly effective defensive tactic. When enemy forces are approaching you head-on, a slide will remove you from the line of fire and put you in a perfect position for a side attack on the first ships. When your enemy is about 3500 m away, begin turning to the right at an angle of approximately 30°. As soon as the hostile ships are barely visible on the left side of your viewscreen, hit the afterburners and accelerate to full speed. Then turn hard to the left. Try to maintain your current elevation when your ship begins to slide. This maneuver should place you in a perfect position to open fire on your target.

AFTERBURNER SLIDE







4. At a range of 1000 - 1500 meters, the nose of your ship should be aiming at the lead enemy ship. Thumb the fire button for maximum effect, then turn and follow the enemy wing.

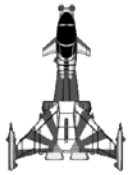


3. At a range of about 2000 meters, turn hard to the right. Make sure you don't change elevation during the turn.





2. Straighten out and immediately punch your afterburners hard, making sure you achieve maximum velocity.



1. At a range of 3000 - 3500 meters from your target, turn left about 30 degrees.

Concentrate on One Foe. Once you have hit an enemy, it is advisable to keep that particular fighter in your sights until he is destroyed. If you switch between targets, each will have time to regenerate its shields and blaster power and it will be harder to finish them off.

Cooperate with your Wingman. Learning how to cooperate with your wingman in dogfights and other missions is one of the most vital skills you will ever acquire. You have already learned the objectives of wing commanders and wingmen in class. This simulator concentrates on teaching you how to be a wing commander and direct your wingman in a way that will ensure the safety and survival of both you and your companion.

Directing your Wingman. There is no explicit command that allows you to direct your wingman to a specific target. If you want him to go after a particular ship, however, simply lock onto the desired target yourself and order your wingman to "Attack my Target." This command will send him after your locked objective, while you are free to pursue other ships with your guns or dumb-fire-missiles which do not require a lock. This tactic is only successful if you keep your original target locked.

Asteroids and Mines. When you hit the edge of an asteroid or mine field, it is advisable to slow down. 250 kps is generally thought to be the safest navigation velocity when you are forced to cross obstacle fields.

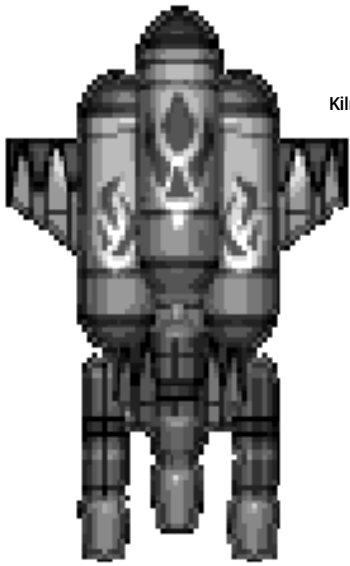
ATTACKING A CAPITAL SHIP

Attacking a capital ship is one of the most difficult missions you can fly. The flak guns from the capital ship will instantly destroy your fighter if you do not dodge their deadly fire in time. You will also have to eliminate a contingent of Kilrathi escort fighters if you want to get anywhere near your primary objective.

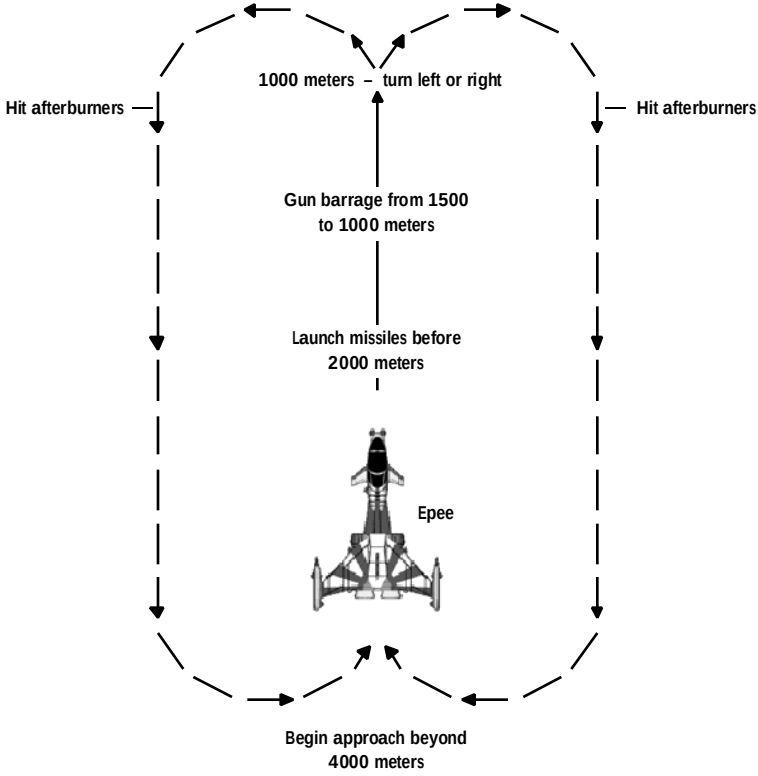
Once you have taken out the escort, you need to concentrate on the capital ship itself. Many capital ships, e.g. the *Ralatha*, have phase shield defenses which effectively counteract any damage from missiles or guns. The only weapons capable of penetrating these shields are torpedoes. Other capital ships and transporters are only protected by strong armor. They can eventually be destroyed with missiles and guns. The Leech missile can effectively drain a capital ship of its energy, thereby taking out its flak guns and its phase shields for approximately 10 seconds. This leaves the capital ship defenseless for your attack. You may want to get close to your target before firing your Leech, because flak guns can more easily neutralize a missile if it is shot from long range.

If you are flying a ship without the Leech missile, flak from the capital ship's turrets make a side approach far too dangerous. In this case, the best strategy for a capital ship attack is a maximum velocity rear attack. There is less laser fire in the rear and the capital ship's rear armor is usually weaker. Make sure you have full blaster power before you start your maximum velocity approach from a distance of 4000 m. Launch your torpedoes when you are between 3000 m and 2000 m away. A *Dorkathi* transport can be taken out with guns and missiles only, while the *Ralatha* and *Candar* Space Station are protected by phase defenses. Begin firing with your heaviest gun at about 1500 m. At 1000 m distance, break hard to the left or right and circle back before you begin another approach. This will give you some time to regenerate your blaster power. If you employ this form of rear attack with torpedoes, you will soon be able to record your first capital ship kill.

ATTACKING A CAPITAL SHIP



Kilrathi Dorkathi-class Transport

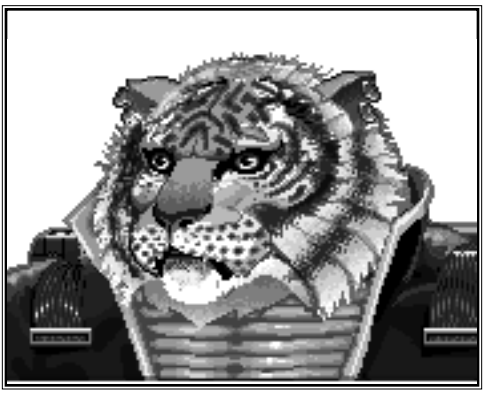


WINGMEN PROFILES



Maniac

During my years at the Academy, Maniac was one of the most colorful students there. In spite of barely adequate performance in class, he managed to beat everyone in the simulator. He had a definite talent for flying and soon he was dusting his opponents with his unconventional and daring tricks. But talent alone does not necessarily make you an accomplished fighter pilot. His occasionally irrational behavior and total lack of responsibility to his wing commander more often than not made him a liability rather than an asset. When we were attacked by the Kilrathi contingent that was to cost me my career, Maniac failed to obey a single command. Even though he managed to down several enemy fighters, he also abandoned his commander, jeopardizing the entire mission. When you are flying a mission with Maniac, remember that you are on your own. You cannot rely on him obeying your orders even though his dogfighting and piloting skills are excellent. Flying with a wingman like Maniac in simulated missions will give you an idea of how important it is to obey your wing commander's orders. It will also teach you how to survive when you cannot rely on protection from your wingman.



Hobbes

You have probably all heard of Hobbes, the Kilrathi ace who defected to the Terran Confederation because he was disgusted by the ruthless expansionism of the Kilrathi Empire. Many fighter pilots refused to fly with him because they were suspicious of his motives and saw him as a traitor. After I got to know Hobbes, I was fortunate enough to fly several missions with him. He is one of the most formidable pilots I have ever known. Small wonder that the Kilrathi empire is such an awesome foe when they are fighting with pilots of Hobbes' caliber. With his brilliant piloting and dogfighting skills, as well as his loyalty and dependability as a wingman, he is the epitome of everything a fighter pilot should be. I incorporated him in the simulation program because Hobbes' example will teach you the merits of an accomplished and loyal wingman and show you the gifts of a rare pilot.



Angel

Angel, Captain Jeannette Devereaux, has flown countless missions for the Terran Confederation. She is one of the steadiest, most consistent fighters we have put in the field. She has never failed to loyally protect her wing commander and has always managed to keep her head in even the most heated dogfight. She is also an exceptionally beautiful and mysterious woman, but that is another matter…. I flew many missions with her before we were separated at my request. Becoming emotionally involved with your flying partner can cloud your judgement in the heat of battle. Flying with Angel in the simulator will show you why she is one of the most successful pilots in the Terran Confederation. Her level-headed approach and her unwavering loyalty to her commander have kept her alive through all the difficult missions she has flown.



Lightspeed

I included Lightspeed in the simulator as a tribute to my brother, Bryan Lombard, who flew to his death barely three months after graduating from the Academy. Eager, impulsive and trigger-happy, he and his wing commander unexpectedly ran into a Kilrathi force on a routine reconnaissance mission. Lightspeed presumably panicked and chased after an enemy *Sartha*. He didn't realize he was being lured away from his commander so the Kilrathi could finish off both ships separately. He didn't stand a chance against the experienced enemy fighters. As a wing commander in the simulator, you should learn how to protect an inexperienced wingman like Lightspeed and give him orders that are feasible for him to follow. If I had had the chance to train my brother in this simulator, he might have been more prepared for the Kilrathi when they came after him that fateful day.

ONLINE SERVICES AND BULLETIN BOARDS

Many of the most popular online services provide access to ORIGIN company news, product updates, release dates, technical support and game hints. In addition, ORIGIN has established its own electronic bulletin board as a customer service.

America Online. You can e-mail Customer Support at ORIGIN CS or Marketing at OSI. To reach our Customer Support board in the Industry Connection, press CTRL-K for "Go to Keyword." Then type ORIGIN in the Keyword window. In addition to reading messages, you can download files from the "Origin Software Library." For membership information and a free starter kit, you can call America Online toll-free at 1-800-827-6364.

CompuServe. To reach our Customer Support board in the Game Publishers Forum, type GO GAMAPUB at any "!" prompt. Then select Origin Section (2). In addition to reading the messages, you can download files from the "Library (Files)" menu. To reach our Customer Service department by e-mail, our address is 76004,2612 (or you can post a message in the Origin Section). For membership information and a free starter kit, you can call CompuServe toll-free at 1-800-848-8199 and ask Representative #361 for your free introductory membership and $15 usage credit.

CREDITS

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Dallas Snell

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Music
Kirk Winterrowd, John Tipton

Sound Effects
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Quality Assurance
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Russell Byrd, Jerrold Harrington, Andrew Hofmann,
Starr Long, Marshall Andrews

Quality Assurance Leader
Perry Stokes

Documentation
Kirsten Vaughan

Editing
David Ladyman

Documentation Design
Al Carnley

Cover Art
Chris Douglas, Jake Rodgers

Box Design
Jennifer Davis

THE WINGMAN'S CREED

Together we fight, united by a bond —
A bond of courage,
A bond of daring,
A bond of friendship.
Without my wingman I am nothing,
Without me my wingman is nothing.
Only together can we achieve
What our cause has called us to
Complete.
For our beliefs we fight
Against the menace that has risen.
My wingman is my guardian,
And I am my wingman's guardian.
With my wingman by my side,
I will not fear death or destruction,
I will not feel the eyes of hate
Resting upon us.
I will fly my ship strong and straight
Never doubting that my wingman
Is there to protect me.

WING COMMANDER®

ACADEMY™

INSTALL GUIDE

Welcome to *Wing Commander Academy*. The following includes quick installation instructions, for users familiar with the process, and a more detailed, step-by-step guide to installing the game. If you experience any difficulty, consult Troubleshooting (pp. 3-4). To avoid compatibility or memory problems, please take a moment to confirm that your machine matches the system requirements. Remember, you may safely quit and start over at any time!

Note: Wing Commander Academy *has been fully tested with the* Double Space *disk compression utility that shipped with MS-DOS version 6.0. We cannot guarantee the compatibility of our games with other disk compression utilities.*

QUICK INSTALLATION

1. Turn on your computer and wait for the DOS prompt. Some machines boot directly to *Windows*, or a different shell environment. Be sure to exit your *Windows* or shell program, and install directly from the DOS command prompt (C:\>).
2. Insert Disk 1 of *Wing Commander Academy* into a floppy drive.
3. Type the name of that floppy drive (A: or B:), then press ↵.
4. Type INSTALL and press ↵.
5. When prompted, follow the instructions in the installation program.

For more details, see Installation Menus, below.

ON-LINE HELP

Help with the installation process is available at any time by pressing F1.

MEMORY REQUIREMENTS

A 2 meg machine is required. (However, we recommend 4 megs of memory to play *Wing Commander Academy*.) A minimum of 5MB hard drive space is required. By typing MEM at the DOS command prompt (C:\>), you can see how much memory is available on your computer. The game needs 586K (600,064 bytes) of DOS memory available (3rd line reported by mem) and 800,000 bytes of available EMS memory.

Some sound cards require additional EMS memory. Sound Blaster, Sound Blaster Pro and Ad Lib require no additional EMS memory. Using a Roland card requires 848K (868,352 bytes) of available EMS memory (total, not additional). When you use a Roland card for music and a Sound Blaster (or Sound Blaster Pro) for speech, you must have 913K (934,912 bytes) of available EMS memory (total, not additional).

Note to 2 meg owners: If you have a 2 meg machine, you will not be able to free enough EMS memory to use both a Sound Blaster Pro and a Roland. You must choose between the Sound Blaster Pro and the Roland.

INSTALLATION MENUS

The installation process is menu-guided. Use ↑ and ↓ to select among the options on each screen, then press ↵. If the install program detects a condition that will prevent installation (e.g. not enough disk space), the program will stop and notify you of the nature of the problem. You must fix the problem before installation can succeed.

Main Menu

After an introductory screen, the main menu appears. From here you can select an install option:

Install the game. This option attempts to install the game onto the hard drive or drive partition you specify.

Change the hardware configuration. Run this option of the install program any time you change the hardware configuration of your machine after *Wing Commander Academy* has been installed, so that the game can use the new configuration. Once you have given the specifications and have verified that they are correct, you are finished. You can now exit the install program.

Abort installation. This option allows you to cancel the install process. (You may also abort the installation process at certain other points while the files are being copied to the hard drive by pressing ESC.) You will be asked to verify all abort requests, giving you a chance to change your mind and continue with the installation.

Machine Specifications

After you have selected an install option from the main menu, the install program will attempt to determine some specifics about your machine. What it finds will be displayed as defaults to the left of the screen. If the defaults are incorrect, you can change them with the following menu options (after answering NO to the question "Are you satisfied with the current configuration?"):

Source drive. This is the drive (A: or B:) that currently contains *Wing Commander Academy* Disk 1. You can only install the game from either the A: or B: drive of your computer.

Destination drive. This should be the hard drive (or partition) onto which you are installing *Wing Commander Academy*. It must have at least 5MB of space free for installation.

Destination directory. If you are not satisfied with the default directory (\WCA), select NO, and enter your preferred directory. The directory will be created if it does not already exist.

Sound card. A list of possible sound cards is displayed. Choose the card that most closely matches the one in your machine. For example, if you have a 100% Sound Blaster compatible card, you would choose SOUND BLASTER. The auto-detect feature will only detect sound cards at their default settings. If your sound card is not at its default setting, the installation program will detect it as AD LIB. In this case you should answer NO to the question: "Are you satisfied with the current configuration?" Then manually select the appropriate sound card from the option menus described below. If you have trouble with the installation that the on-line help (F1) or information in this guide cannot help you with, please contact ORIGIN Customer Service (see Troubleshooting, pp. 3-4).

The following menus handle sound card configuration information:

I/O port setting. This setting defaults to 220H. Other possible values are 210H, 230H, 240H, 250H and 260H.

IRQ setting. This menu gives you a choice of 3, 5 or 7 (7 is the default for most, but not all, Sound Blaster cards).

For more information on these settings, see your Sound Blaster documentation.

Note to Sound Blaster Pro Users: IRQ 10 is not supported due to technical constraints.

INSTALLING THE GAME

If you are installing the game, you will be prompted to insert various *Wing Commander Academy* disks. Insert the disks as prompted and press any key to continue with the installation until it is complete.

OPTIMIZING YOUR SYSTEM

If you are experiencing problems running *Wing Commander Academy*, it might help to create a separate boot disk or decrease the number of memory-resident programs (TSRs) you have loaded.

Creating a Boot Disk

To create a separate boot disk, insert a blank high density disk in your A: drive. From the DOS prompt, type:

```
FORMAT A: /S ↵
```

Modifying CONFIG.SYS

When the DOS prompt returns and the format is complete, type:

```
EDIT A:\CONFIG.SYS ↵
```

When the new screen appears, determine which memory management system you are using (if any) from those listed below, and type the commands shown under that system:

CONFIG.SYS using QEMM

```
FILES=15
BUFFERS=15
DEVICE=C:\QEMM\QEMM386.SYS
DOS=HIGH,UMB
SHELL=C:\DOS\COMMAND.COM /P
```

CONFIG.SYS using DOS 5's EMM386.EXE

```
FILES=15
BUFFERS=15
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE 1024 RAM
DOS=HIGH,UMB
SHELL=C:\DOS\COMMAND.COM /P
```

CONFIG.SYS using DOS 6.0's EMM386. EXE

```
FILES=15
BUFFERS=15
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE 1024 RAM
DOS=UMB
DOS=HIGH
SHELL=C:\DOS\COMMAND.COM /P
```

CONFIG.SYS using DOS 6.0's EMM386.EXE and Double Space

```
FILES=15
BUFFERS=15
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE 1024 /I=B000-B7FF RAM
DOS=UMB
DOS=HIGH
DEVICEHIGH=C:\DOS\DBLSPACE.SYS /MOVE
```

Exiting CONFIG.SYS and Modifying AUTOEXEC.BAT

After typing these lines, you should exit and save your file. Do so by typing:

ALT-F
X
Y

Next you need an AUTOEXEC.BAT file on your boot disk. Type:

EDIT A:\AUTOEXEC.BAT ↵
PATH=C:\DOS
PROMPT PG
C:
CD\(*Wing Commander Academy* drive)
WCA

(The AUTOEXEC.BAT file does not vary with different memory drivers.)

"*Wing Commander Academy* drive" should be the directory in which you installed *Wing Commander Academy* — for example, if you installed the game in the default directory we suggested, the fifth line you typed would read:

CD\WCA

Exit and save this file by typing:

ALT-F
X
Y

Disk Cache Set-Up

If you have a 4 Meg machine or greater, you can install SMARTDRV.EXE (a disk cache program). We recommend you allocate 1024K of memory to the disk cache. We also recommend using the SMARTDRV versions from *Windows* 3.1 or DOS 6.0. If you decide to install SMARTDRV, you need to add the following line to the beginning of your AUTOEXEC.BAT file:

C:\DOS\SMARTDRV.EXE 1024

Mouse Set-Up

For ease of gameplay, we recommend the use of a mouse in addition to a joystick. Be sure that you are using a 100% Microsoft-compatible mouse driver. If you're using a boot disk, this driver must be loaded within your boot disk configuration. Since the command line may differ from mouse to mouse, consult your hard drive's AUTOEXEC.BAT or your mouse user's guide. One *example* is:

C:\MOUSE\MOUSE.COM

Be sure to include your specific mouse driver line to the beginning of the AUTOEXEC.BAT file of your boot disk. When you want to play *Wing Commander Academy*, insert this boot disk in the A: drive and start or restart your computer.

Installation Fails

In the unlikely event that installation fails, an error message should tell you the nature of the problem. See Troubleshooting (below) for solutions to some common problems.

TROUBLESHOOTING

Q: My mouse is not working with WCA. *My mouse works with all of my other software applications; why not with* WCA*?*

A: If your mouse is not working with *WCA*, you should first check to see if your mouse has been loaded in DOS (in your AUTOEXEC.BAT file) or onto the boot disk you are using to play the game. *Windows* and many other "multi-tasking" environments load their own built-in mouse driver. These mouse drivers will not operate outside of their shell environment. Loading a mouse driver into the DOS environment can be as simple as typing MOUSE ↵ at the command prompt. For example:

C:\>MOUSE ↵

This command can differ from mouse driver software to mouse driver software. Please consult your mouse user's guide and Mouse Set-Up (above) for further details.

Q: Why doesn't my joystick work correctly? It works with WC *and* WCII.

A: Be sure that your joystick has been calibrated correctly. Once within a mission, press J or SHIFT-J to recalibrate your joystick. Also, because of the close interaction between the mouse and the joystick, be sure that your mouse driver is 100% Microsoft-compatible. Please consult your mouse user's guide and Mouse Set-Up (above) for further details.

Q: When I boot the game, it says "Expanded memory not detected," but I have two megs of RAM. What's wrong?

A: First, not all types of extra RAM are equal. There are two basic kinds — exTENded and exPANded. If you have no expanded memory, you must configure your extended memory as expanded memory. If you have expanded memory but *WCA* still won't acknowledge it, most likely some other piece of software, such as a disk cache or RAM disk, is using up all your expanded memory. Check your CONFIG.SYS and AUTOEXEC.BAT files for such programs, and consult the documentation that came with those programs to find out how to reduce their memory consumption. Also consult Optimizing your System (above).

Q: WCA *threw me out to DOS. It said I had an "Out of memory error". When I tried to re-start, it did it again.*

or

Q: My copy of WCA *is defective. Every time I play, it throws me to DOS with a Memory Allocation Error.*

A: Both are trying to play with less than 586K (601,000 bytes) free. If the game does this, use the DOS command CHKDSK and read the last line of output. It should say "XXXXXX bytes free." This is the amount of free RAM available. If this number is less than 601,000 bytes, modify your AUTOEXEC. BAT and CONFIG.SYS files.

You may want to use a system boot disk instead of modifying the CONFIG.SYS and AUTOEXEC.BAT files on your hard drive. Please refer to Optimizing your System (above) for instructions on making a system boot disk for the *WCA* game.

Q: The game still doesn't work after I modified my AUTOEXEC.BAT and CONFIG.SYS files.
A: Copy down the information the computer provided when it dumped you to DOS, then see ORIGIN Customer Service (below).

Q: My game runs slowly and occasionally locks up.
A: You may be loading other software that is not compatible with *WCA.* First, try running your game from a system boot disk. Refer to Optimizing your System (above) to create a boot disk. The *WCA* game is only compatible with Microsoft DOS versions 5.0 or higher. This software is not compatible with 286 PCs. Please use a 386 or 486 PC.

Q: Why does my computer crash when I try to play WCA *while I am logged into our LAN (local area network)?*
A: LAN software often tries to take over the same system resources that *WCA* uses. Sometimes the two can coexist, but often they can't. If you have strange problems with *WCA* while your LAN drivers are loaded, try booting from a clean boot disk that does not load your LAN drivers. Please refer to Optimizing your System (above).

Q: Why does my computer crash when I try to play WCA *through Microsoft* Windows *(or OS/2,* Desqview *or DOS 5.0* Task Swapper*)?*
A: "Multi-tasking environments" — *Windows, Desqview, Software Carousel,* DOS 5.0 *Task Swapper,* and so forth — often conflict in their use of memory and other system resources with *Wing Commander Academy.* We do not recommend playing WCA under these circumstances. Even if you do run the game under a multi-tasker, do not swap to another application while playing. Your system will crash if you try to suspend *WCA* to run another program. In general, we recommend that you log out of *Windows* (or similar applications) and play from the DOS prompt.

Q: I have a 100% compatible sound card, but I'm not getting any sound. Why not?
A: Your sound card may have to be put into "SB" (Sound Blaster) emulation through its software or a switch setting on the card. Consult your sound card manual or its manufacturer.

WING COMMANDER®

ACADEMY™

REFERENCE CARD

Console Commands

Select	ENTER	*Selects feature currently under cursor*
Next	TAB	*Moves to next command button*
Clear	C	*Clears action sphere*
Ship	P	*Selects ship*
Wingman	W	*Selects wingman*
Load	L	*Loads game*
Save	S	*Saves mission*
Execute	X	*Runs mission*
Escape	ESC	*Returns to simulator room*

Spaceflight Commands

TO FIRE

Gun/Tractor	G	*Cycles through guns (or tractor beam)*
Weapon	W	*Cycles through weapon systems*
Targeting Comp.	T	*Selects targeting computer/changes target*
Lock Target	L	*Locks targeting computer (or activates ITTS, if available)*
Chaff	ALT-ENTER	*Fires chaff pods*

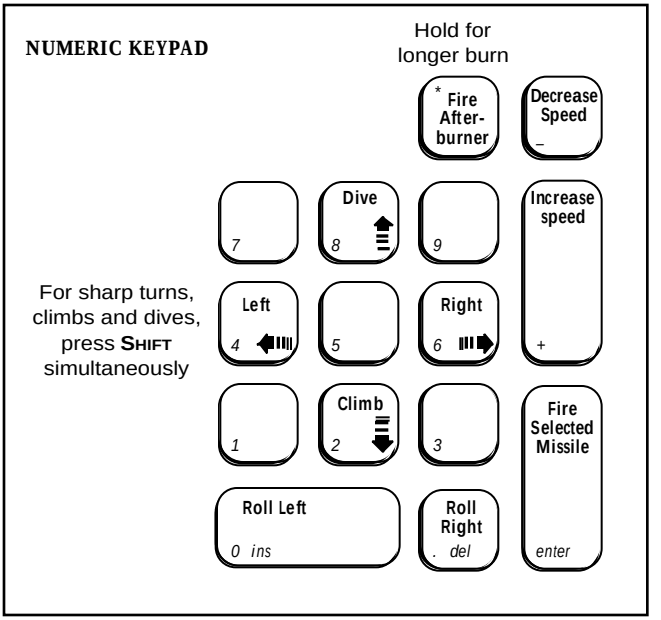
TO FLY

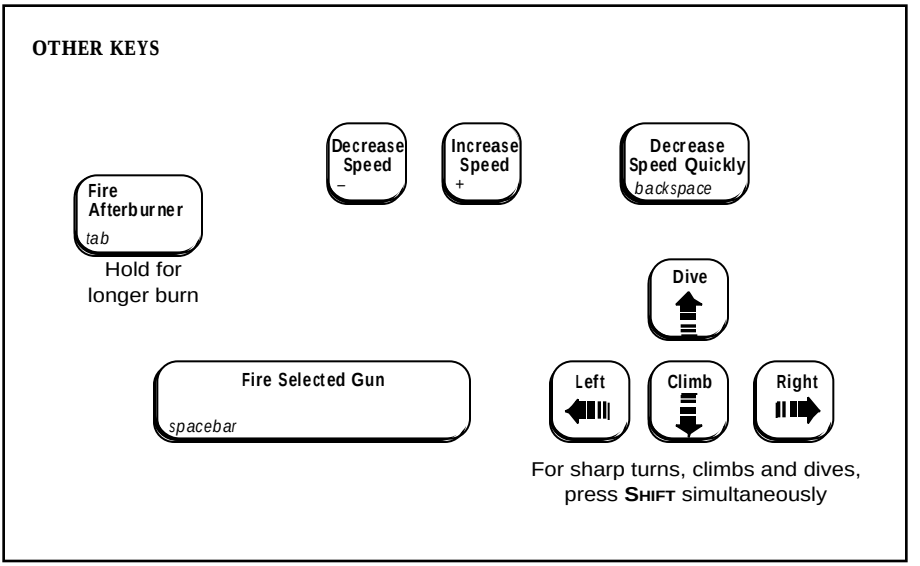
Afterbumers	TAB	*Fires afterburners for as long as key is pressed*
Stop	BACKSPACE	*Brings ship to immediate stop*
Autopilot	A	*Engages autopilot*
Damage	D	*Displays ship's damage screens*
Communications	C	*Selects communications panel (or clears incoming communication)*
Video	V	*Enables or suppresses comm video*

Using a Keyboard

Between Missions.
Use ↓, ↑, ← and → (or the numeric keypad) to move the arrow pointer. When the pointer's shape changes into a cross, press ENTER to select functions.

In Space.
Both the numeric keypad (with NUM LOCK off) and arrow keys are active for controlling flight.





Simulator Options

Message Duration	M	*Changes message duration*
Music	Ctrl-M	*Toggles music on / off*
Sound	Ctrl-S	*Toggles sound effects on / off*
Score	S	*Displays score (in gauntlet mode) on right VDU*
Pause	P	*Pauses game*
Slower	Alt-+	*Slows speed of game*
Faster	Alt-–	*Increases speed of game*
Exit	Alt-x	*Exits to DOS*
Eject	Ctrl-E	*Ejects from ship and returns to simulator room*

Camera Views

Front	F1	*Front view*
Left	F2	*Left view / go to left turret if available*
Right	F3	*Right view / go to right turret if available*
Rear	F4	*Rear view / go to rear turret if available*
Chase	F5	*Chase plane view*
Battle	F6	*Battle view*
Tactical	F7	*Tactical view*
Missiles	F8	*Missile camera view*
Tailing	F9	*Tailing view; cycles through ships*

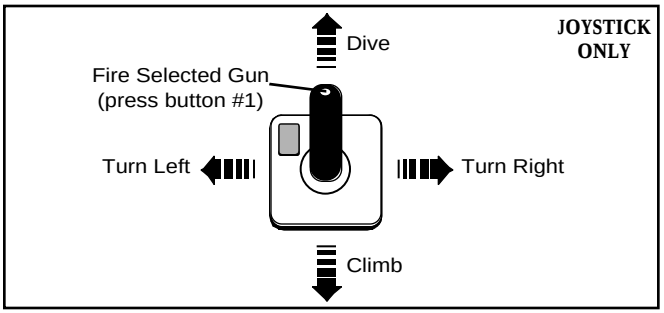
Messages

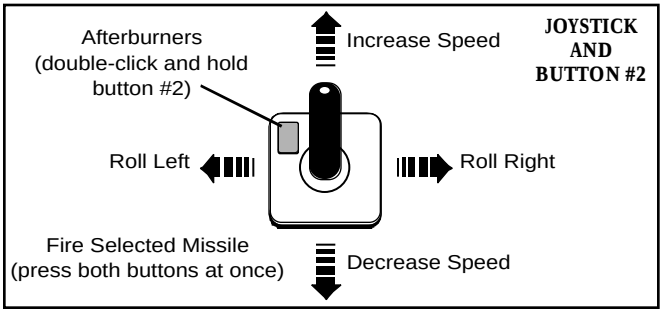
“Attack my target.”	Alt-A
“Break and attack.”	Alt-B
Request wingman damage report.	Alt-D
“Keep formation.”	Alt-F
“Form on my wing.”	Alt-F
“Help me out here.”	Alt-H
Random taunt to targeted enemy.	Alt-T

Using a Joystick

Between Missions. Move the joystick to maneuver the arrow-shaped pointer around the on-screen picture. When the pointer's shape changes into a cross, press button #1 to select functions.

In Space. The diagrams on the right show the movements of the joy-stick and the use of the joystick buttons for basic flight control.

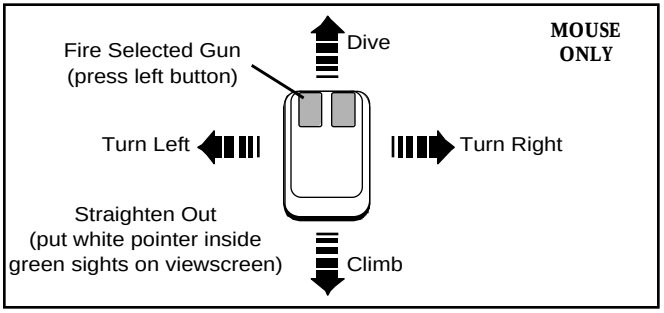


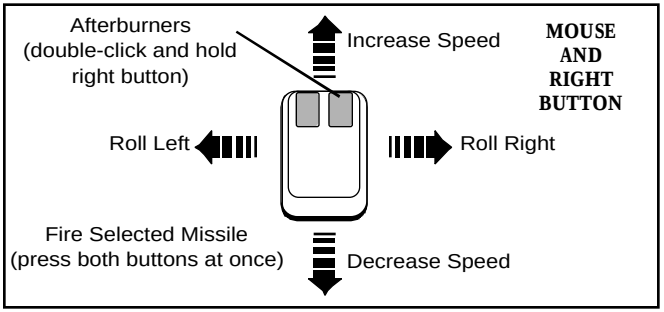


Using a Mouse

Between Missions. Move the mouse to maneuver the arrow-shaped pointer around the on-screen picture. When the pointer's shape changes into a cross, press the left mouse button to select game functions.

In Space. When you move the mouse, a white, circular pointer appears in the view-screen. Your ship homes in on the pointer. Maneuver by moving the mouse until the pointer is where you want to go. You travel in that direction until you move the mouse to a new position.





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