HARRIER STRIKE MISSION™

MILES Computing

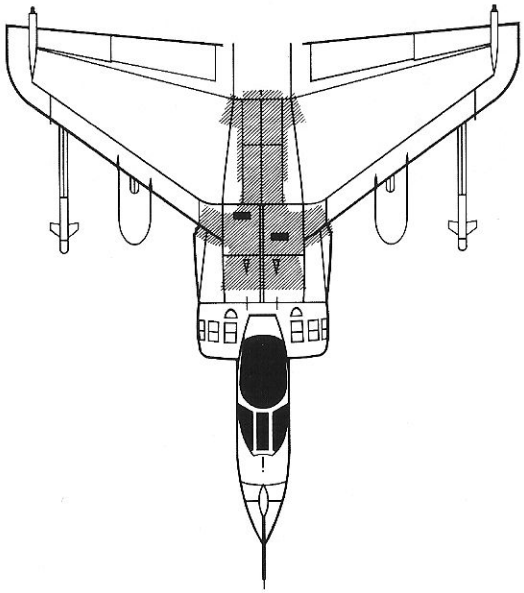
HARRIER STRIKE MISSION™

Program written by Timothy Hays.
Documentation written by Timothy Hays and Thomas Hennefer.

>>> CAUTION <<<

HARRIER STRIKE MISSION™ can only be run by "booting" the disk (turning your Macintosh off and then on again), and inserting the HARRIER STRIKE MISSION™ disk in the internal disk drive. Our game is self-starting and cannot be run any other way. Do not attempt to play HARRIER STRIKE MISSION™ by first booting from another disk as this will not work. HARRIER STRIKE MISSION™ is copy-protected. If you attempt to copy the disk, or disturb the desktop (directory) file, you may destroy the file structure and the game will not run at all. If you should destroy the game, return only the injured disk along with $5.00 (shipping and rewrite fee) to Miles Computing, Inc.

Be sure you include *your* address with the disk.



STORE OWNERS:

Harrier Strike Mission™ has a built in demo mode which is easily operated by turning on the Mac, inserting the game disk into the disk drive and leaving the Mac alone. No other assistance is necessary since the game will automatically start & run continuously through the demo mode.

CONTENTS

OPERATIONS ORDERS

****..... TOP SECRET YOUR EYES ONLY.....****

Good Morning, Commander. Since our aircraft carrier has arrived safely three miles off the enemy coast we now can inform you of your primary mission:

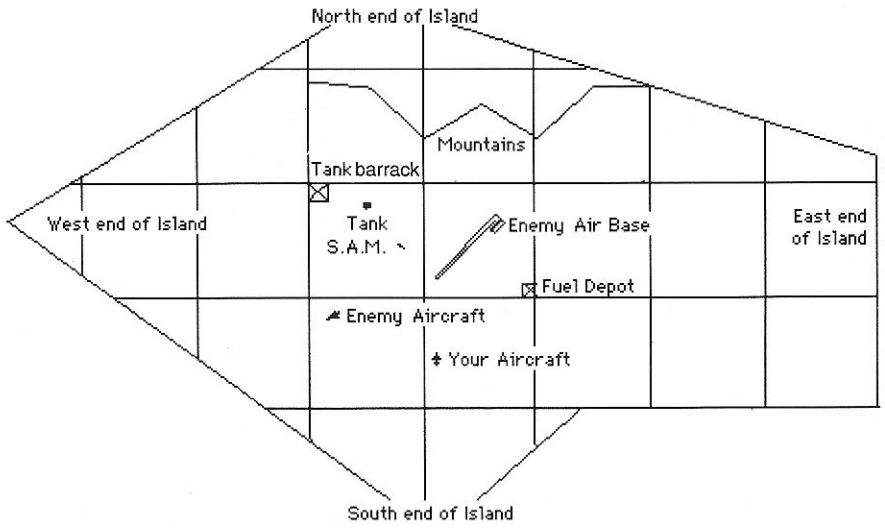
Intelligence reports the enemy has based on the island five of its most sophisticated fighter aircraft. These aircraft are armed with heat-seeking missiles, and can maintain an impressive speed delivery ratio very comparable to your own craft.

These fighters are based at the enemy's airbase located on the island, and one aircraft is always on constant patrol.

Current reports show that the enemy has a ground defense consisting of ten "light armored" tanks for close support of the enemy airbase. These tanks are stationed in a Tank barrack located to the west of the airbase. These tanks are armed with surface-to-air missiles (S.A.M.'s), and one tank will always be on patrol. The enemy has also positioned a large fuel depot near this airbase.

Your orders Commander, are to take control of the island, destroy the enemy ground forces and aircraft, also any and all military facilities located on the island, and either land and hold the island or return to land on your aircraft carrier. See intelligence photo of the island for a readout of your targets. The aircraft carrier is located directly south of this island.

Good luck, Commander.



YOUR HARRIER JUMP JET

While playing Harrier Strike Mission™, you will be piloting one of the most advanced modern fighter aircraft ever designed, the Harrier Jump Jet.

Not only does your Harrier have the ability to fly at speeds up to Mach 1 (Mach 1 is the speed of sound, approximately 740 mph), but has V/STOL (Vertical/Short Takeoff and Landing) capabilities which allows the Harrier to maneuver much like a helicopter. This action also includes a hovering technique which combines stability with versatility unlike any conventional fighter craft.

Your Harrier's Armament:

30mm Aden Cannon: Your Harrier has two 30-millimeter Aden Cannon, one of today's most powerful aircraft weapons. They are used to destroy other aircraft as well as ground targets. The cannon CANNOT shoot down enemy missiles. The cannon fires in burst rounds. To fire the cannon just press & hold down the mouse button. You will see tracers from both sides of your undercarriage representing the path of your shots. There is no set maximum number of shots on your cannon. Your cannon has a limited effective range of about 1 mile. If you have multiple targets lined up in your sights, it is possible to destroy several targets with a single shot. The accuracy of your cannon varies depending on your firing angle/distance as well as the incremental movement of the enemy. This means that your shots will not always make a direct hit, or may require two or three hits to destroy a target. This also means that your shots may drift and hit a target slightly out of your firing zone.

Sidewinder Missiles: Your Harrier is armed with three Aim-9 "Sidewinder" air-to-air missiles mounted in triangulation on the undercarriage of your Harrier. These missiles are infrared heat-seekers and guide themselves to the nearest extreme heat source which in this case is your enemy's jet exhaust.

Missiles are deployed one at a time. You do not have to aim the missile, just press the "M" key to launch a Sidewinder and kiss the enemy aircraft goodby. When the missile is launched, the box marked "MISSILES" (on the bottom of your control panel) will update and flash. When the last of the three missiles have been deployed, this indicator box will turn black, and additional presses of this key will have no effect. Sidewinder missiles generally have a range of about 20 miles (36 km),

however the enemy aircraft is always within this range, so you effectively don't have a limited range on your missiles.

While your own missiles will not seek your exhaust because of a radio coding device (Identify Friend-Foe, eg. IFF), be advised that surface-to-air and ground-to-air missiles fired at you are just as accurate as your own and should be avoided at all costs.

Flare Deployment: Flares are used when your enemy has launched a heat-seeking missile at you.

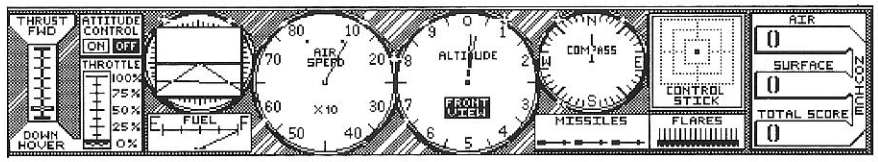
When these flares are launched (you have 16 total), they emit a tremendous heat signal (infrared source) which attracts the enemy's missile to the flare rather than to your Harrier. Flares are deployed one at a time. Dropping a flare is initiated by pressing the "Space Bar". This will update and flash the box marked "FLARES" (on the bottom of your control panel) until the flare has hit the ground. When you have deployed all your flares, and the last flare has reached the ground, this box will turn black and additional presses of this key will have no effect.

The relative distance of the enemy from your aircraft will determine the reaction time you are allowed in which to commit an evasive act, and will vary between a few seconds, and zero.

If you do not launch a flare in time, you will be destroyed by an in-coming missile. However, if you launch a flare too soon at a low altitude, the flare will hit the ground and disappear before the missile has reached the flare. When this happens, the missile will now track your Harrier. You CAN launch another flare, but this method will just waste your flares in a hurry. It is therefore recommended to make sure you have plenty of altitude to efficiently evade a missile by deploying a flare.

When the enemy fires a missile at point blank range, you will receive little or no advanced warning. Our best advice is to conserve your flares and try to maintain a comfortable distance between the enemy and yourself.

When you have successfully evaded a missile using a flare, the message "MISSILE EVADED" will flash on the top of the screen (H.U.D, Heads Up Display), the flare and missile will disappear, and the score box will update giving you 25 (air) points for evading a missile with each flare. If you have another in-coming missile alert, you must deploy another flare.



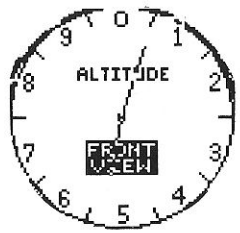
Your Instrument Panel: Your Harrier Jump Jet is equipped with the latest in high-technology instrumentation which enables you to be informed of situational variations the instant they occur.

The Harrier informational center is projected on the famous "Heads-up display" (H.U.D.) currently used in all state-of-the-art aircraft. The H.U.D allows you the pilot to direct full attention on the objective target while maintaining a constant monitoring of the Harrier's vital aerial statistics.

Air Speed Indicator:

This instrument tells you the current speed of your aircraft from 100 to 800 miles per hour. The readout shows 10 to 80, simply multiply this number with 10 to get your airspeed.

Since this indicator functions by measuring the air velocity passing your aircraft, it is not accurate at speeds under 100 mph. Your aircraft has a top speed of 800 mph (1.12 Mach). This indicator is therefore pinned at 100 and 800 mph. Notice also that the word(s) "DEMO MODE" or "PRACTICE" may appear on this indicator if the game is in one of these two modes.

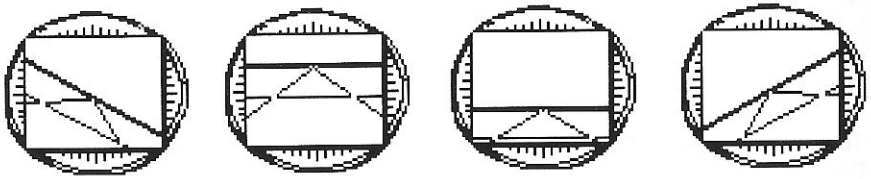


Altimeter:

This instrument informs you of your present altitude in thousands of feet, with a maximum ceiling of 10,000 ft. It also indicates from which direction the screen is currently being viewed: FORWARD, AFT, RIGHT, LEFT or TOP (Top-Down).

Compass:

Shows your aircraft's current heading. If you're heading North and you pull up in a loop, your heading will switch to South as soon as you head over the top into an inverted attitude. You can easily see this by watching the compass as you pull back on the control stick. The compass will let you know when you have reached a "straight-up" attitude by flipping the needle over 180 degrees. The compass indication will constantly change as your Harrier advances through a turn (change of heading). This is an electronic compass and therefore has no lag or error due to high-G forces or vertical attitudes. Unless you have radically flown off course, the island will generally be to the north of you (if you are between the aircraft carrier and the island), and the aircraft carrier will be to the south. The compass is useful if you have flown off one of the ends of the island. It is also useful to indicate when to pull out of a turn once your aircraft has turned around 180 degrees.

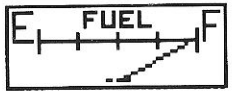


Attitude Indicator (Artificial Horizon):

This indicator shows your present attitude (which way your plane is facing relative to the earth). This is best shown by watching the indicator as you "bank" or "pitch" your aircraft.

The solid line in the middle represents the horizon. This indicator is useful when you are not sure where the ground is relative to your plane, or when you are in a steep dive and may not be able to see any ground. When in a steep dive the attitude indicator will flash grey until you have pulled out of the dive.

The artificial horizon is as realistic as is possible in this type of simulation, and has the same graphic display features as the fully electronic artificial horizon found in the new Tigershark by Northrop.



Fuel:

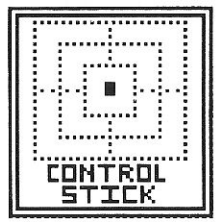
Indicates fuel remaining in tanks. Fuel is normally indicated in aircraft as pounds, but this indicator has been simplified using "E" denoting "Empty", and "F" for "Full". Make sure you have enough fuel to

return and land on your aircraft carrier (1000 bonus points for Novice and 1500 for Expert). If you decide that you don't have enough fuel to return to the carrier, attempt a landing on the island and receive 500 bonus points for Novice or 1000 in the Expert mode.

When you run out of fuel this indicator will flash and the throttle will drop rapidly. It is possible to make an emergency landing as long as you are at a low altitude. Since your Harrier's powerplant (engine) powers the attitude control and the hydraulics, you will lose all control over the aircraft when the throttle power output drops to 25% or less. This is also true if you manually lower the throttle. Remember that the higher your throttle, the faster you will exhaust your fuel supply.

Missiles:

At the start of the mission you receive three heat seeking missiles. When the indicator turns black, you are out of missiles. Use your missiles with prudence and restraint for maximum scoring.



Control Stick:

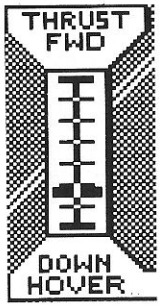
Your Macintosh's mouse acts as the control stick of your Harrier Jump Jet. Whenever we refer to the "control stick" in this manual, we are referring to the movement of the mouse. You may also use a joystick as discussed later. Moving the mouse back is the same as pulling back on a control stick, which causes your plane to climb. Moving the mouse to the right is identical to moving the control stick to the right, and so forth.

The "feel" (simulation) of the mouse in the Novice mode is different than the "feel" in the Expert mode. The Novice mode uses coordinated rudder/aileron flight and the Expert mode is a simulation of actual flight where you must bank over and pull back on the control stick to make a turn.

For a more in-depth explanation about flying read the section entitled: "FLIGHT CONTROL USING THE MOUSE".

Flares Indicator:

Represents the number of your flares your plane has remaining. You start your mission with 16 flares. Pressing the spacebar launches one flare at a time and the indicator will turn black when you are out of flares .



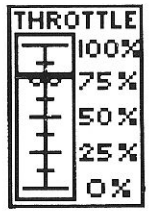
Thrust:

The THRUST control must not be confused with the THROTTLE control. The Harrier has four jet nozzles which in normal operating mode face downwards causing the thrust of the jet to maintain a hovering attitude, but can also be redirected aft which causes the Harrier to be propelled forward. Pressing the ">" key will direct your nozzles to the rear for forward thrust. Pressing the "<" key will direct your nozzles down for vertical (hovering) operations. These two control keys will have the immediate effect of being a speed control. Thus, the further advanced your thrust control, the higher your airspeed will be. This is not really a speed control, but a "thrust vectoring" control. You can move your nozzles from the full down position to the full aft (rear) position, causing full forward thrust. At this position you will now have implemented your full capable forward speed. Moving the thrust back to the down position will have the effect of slowing down the aircraft and initiating a hover. The nozzles are used in this manner to redirect the thrust and give you the capability of maneuvers that are impossible for any other conventional aircraft.

When executing a takeoff, the capabilities of the Harrier allow you to determine your angle and direction of movement. This action is initiated by increasing the throttle (the "}" key) to 75% and then advancing the forward thrust (the ">" key) until the Harrier has achieved the desired rate of speed. You can only advance your thrust vector if the throttle is advanced to 50% power or greater. This is because your aircraft requires more than 50% power to maintain a hover.

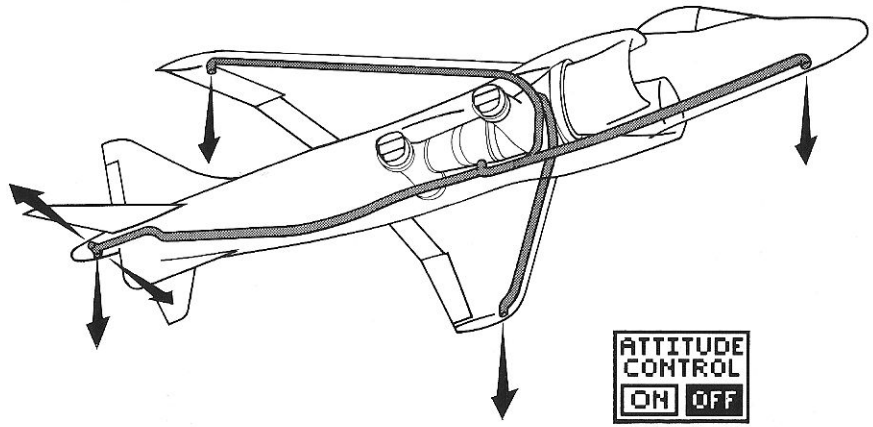
An inadequate combination of thrust and throttle may result in a loss of sufficient altitude and cause your Harrier to explode before you have cleared the carrier.

If you are flying upside down, do not lower your thrust control until you have turned over (right side up), or you will end up thrusting your Harrier straight down toward the ground.



Throttle:

The THROTTLE control must not be confused with the THRUST control. The throttle control panel readout designates the percentage of power engaged at the present time. During normal (conventional) flight your throttle should be at 75% power. You may want to raise your throttle more than this when you are first learning how to fly. This will have the effect of compensating for the lost altitude when you are in a turn, but will increase your altitude when you are flying straight and level at low airspeeds. The higher your airspeed, the less apparent effect the throttle will have on your vertical lift. A higher rate of throttle advancement will reflect in the total amount of fuel consumed.



Attitude Control:

The attitude control and hold system is actually easy to use, but requires a thorough understanding of what it is in order to take advantage of it's abilities.

If your four thruster nozzles are aimed downward you will then initiate a hovering position and will be technically under attitude control (indicator displays "ON"). This means that whenever you are in a hover, you are AUTOMATICALLY under attitude control. Attitude control is AUTOMATIC and will keep the aircraft in a steady position in space and

still allow you to pitch and turn the aircraft. This is useful if you wish to stop dead in space and turn around to take pot shots at the enemy. Be advised though that this also makes you an easy target.

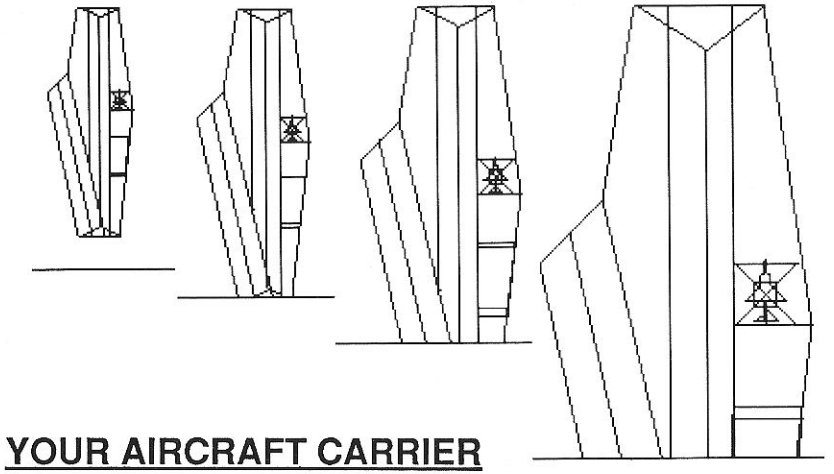
If you are maintaining a hover, and then advance your forward thrust control (the ">" key) you will now be moving forward at the speed shown on your air speed indicator. During this episode any movement of the mouse will effect the pitch or yaw attitude of the aircraft in relation to the desired targeted area. Therefore, once you have moved out of attitude control (indicator "OFF") you can bank, yaw and pitch the aircraft since you are now in conventional flight.

If you are currently in conventional flight (forward motion) and you move the thrust control down (the "<" key) you will automatically switch into attitude control as soon as you have stopped forward motion (maintaining a hover). Once the attitude control system switches in, your aircraft will automatically level-out (roll-over) into a non-banked attitude. You can easily see this by the starting practice mode. Bank your aircraft a few degrees, then press the "<" key to turn the thrust down and initiate hovering attitude control; you will immediately notice the horizon straightening out and the aircraft will now be level in relation to the forward horizon. You may still pitch up & down and turn left & right all you like, but attitude control will keep the aircraft from drifting and rolling (banking-over).

Once the attitude control has been engaged, and you are hovering at least 20 feet over the ground, the following will occur: when you move your control stick to the left or right, the aircraft will turn (change heading) in that direction. Your aircraft will NOT bank until attitude control is disengaged (you have forward movement). You can spin around all you like, this is useful for aiming your Harrier in the desired direction without rolling. Pushing your control stick forward will pitch your nose down, but you will not lose altitude since the attitude hold system is in effect. You can pitch down approximately -86 degrees. When you are pitched over, you can also turn the aircraft right or left, but the attitude hold system will not allow you to pitch over more than about -86 degrees. The same goes for pitching up. For example, if you were able to pitch over (either direction) more than 90 degrees you will turn upside-down, and obviously you cannot hover in an upside-down attitude. This is why the attitude control & hold system will limit you in the amount you can pitch up or down. If you pull back on the control stick while under attitude control, you can only pitch up to about +86 degrees. If you try to engage the attitude control system (put your aircraft in a hover) while upside-down, you will quickly fall to the ground and destroy your Harrier.

The attitude control and hovering system also has other side effects which can be used to your advantage. With a little skill, it is possible to perform tail skids by moving slowly forward as you are hovering with a nose-up attitude. Also, if your thrust is aimed mostly down (but you are still moving forward), and you pull up into a climb, you will quickly lose altitude unless you redirect your thrust forward (press the ">" key).

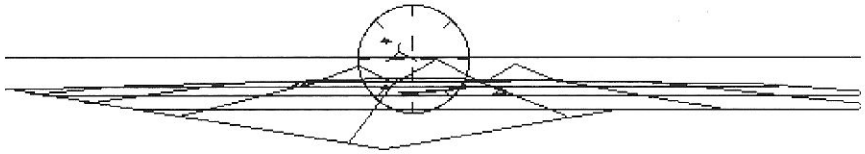
Attitude control is necessary for vertical takeoffs and landings.



YOUR AIRCRAFT CARRIER

As a pilot, the carrier becomes your home base. At the start of your mission you'll begin on the deck of the carrier, then take off and fly to the island, carry out your primary mission and finally return safely to the aircraft carrier. Sounds easy doesn't it? It takes a lot of practice!

You may land anywhere on the aircraft carrier using any angle of attack you desire. You can land using the standard "Flare-Out" technique, or using any of the several V/STOL landing techniques, it is all up to you. Be sure to conserve enough fuel to allow for last minute maneuvers in and around the carrier. It's a shallow victory to total up lots of points and then run out of gas on the way home. Not to mention explaining it to the First Sea Lord!



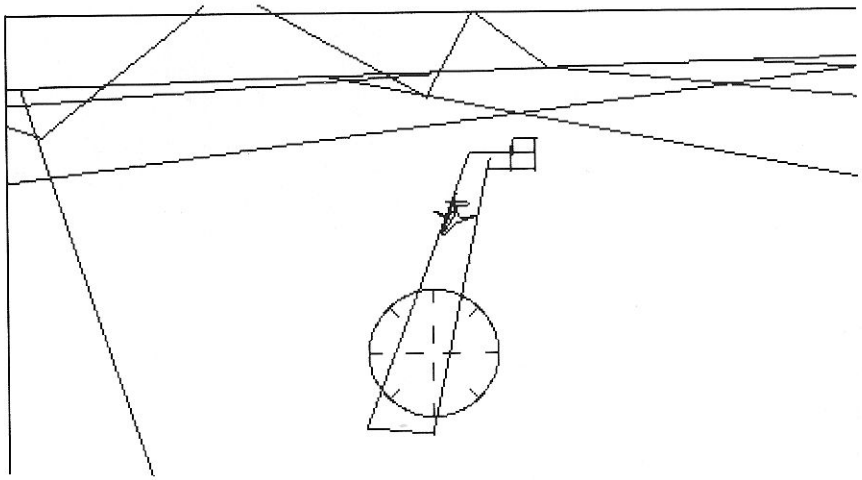
THE ISLAND:

The island is about 3 miles due north of your aircraft carrier. You must fly to the island and destroy as much of the enemy's ground and air forces as possible. Then you must return to your aircraft carrier. The island is about four miles across, three miles long and has three mountains near its northern perimeter.

As you progress in your ability to control your Harrier and to strike back at the enemy you will most likely perfect your favorite approach to the island. For the novice, may we suggest gaining sufficient altitude and increasing throttle to enable maximum flexibility while decreasing the risk of pilot error. You thrill seekers may apply the full thrust flat-on-the-deck approach at an altitude of not more than 600 ft.

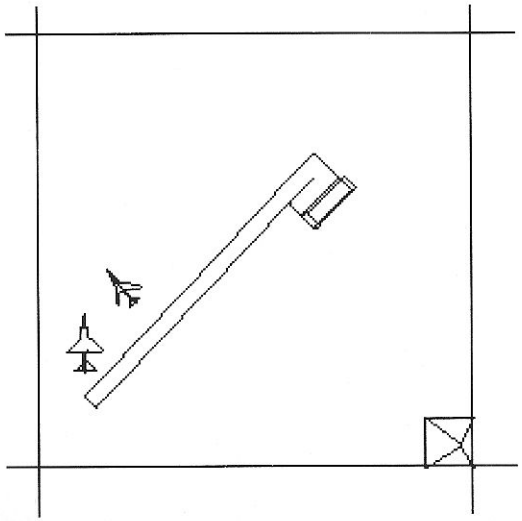
The Enemy's Forces:

The enemy forces on the island will shoot first without warning, and are very accurate. It is your mission to terminate these forces as quickly and safely as possible.

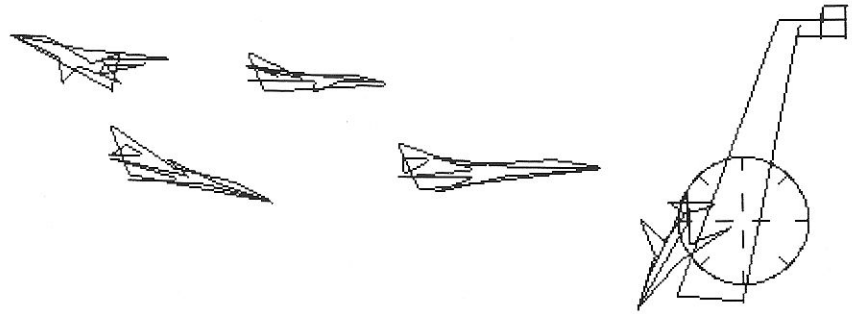


Airstrip and Headquarters: The enemy airstrip and headquarters are located near the center of the island next to each other. Inside the hangar are housed five fighter planes and the island's General Headquarters (G.H.Q.).

The building doesn't attract missiles, so the headquarters must be destroyed with your Aden Cannon. You will get 100 points for destroying this building, but to gain more points do not destroy the G.H.Q. until all of the enemy's fighters have been deployed. This same guideline applies to the tanks and their deployment also.



FUEL DEPOT: The enemy fuel depot is located about half a mile south-east of the head-quarters/airstrip. This depot is located in a tent (pyramid shaped) and you receive 75 points for destroying it.

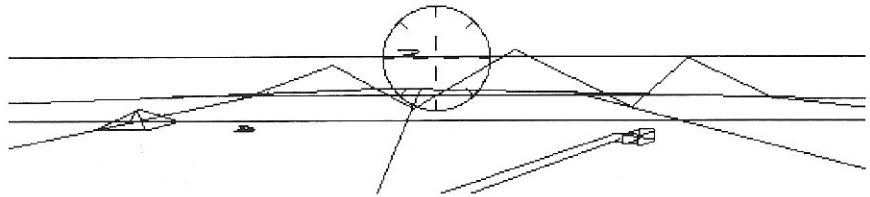


Five Enemy Interceptors: Since the enemy has detected your aircraft carrier's presence, they have scrambled their island's forces. So "heads up" because one of their planes will be in the air most of the time, and these pilots have only one thing in mind--to find you and flame your tail!!

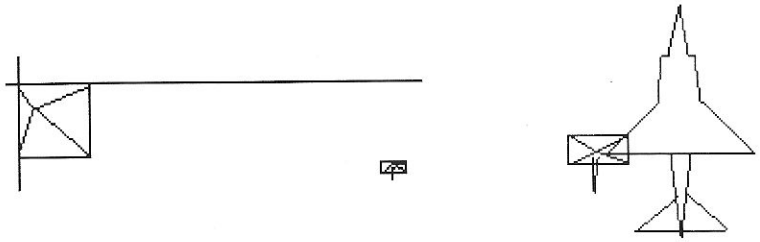
Remember that the enemy's aircraft is as sophisticated as your own, and will detect your presence from the moment you start playing the game. The enemy planes will constantly monitor your Harrier's course and trajectory and will open fire at the most opportune time. Also keep in mind that the enemy's planes carry heat-seeking missiles which are a little bit slower than yours and have a limited range of approximately 6.5 miles.

Obviously you must destroy the enemy's planes as soon as possible. If you destroy an enemy aircraft while it's taking off from the airstrip you get just 50 points, but if you destroy an enemy plane in combat you receive 100 points for a missile hit or 200 points for using your cannon.

It may seem tempting to attack and destroy the hangar/G.H.Q. early in the game, but remember that more points may be earned if you destroy all the enemy planes first, and then the hangar.



Tank Barrack: Located about three quarters of a mile west of the airstrip is the enemy's second line of defense. This station holds up to 10 of the enemy's "light armored" tanks.



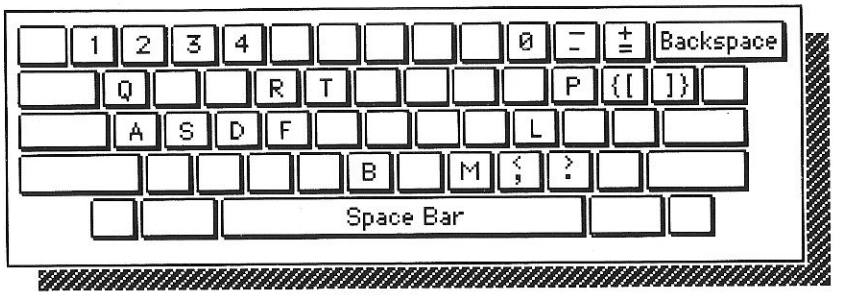
Tanks: As one tank is destroyed, the next will appear out of the tank barrack (as long as the tank barrack is not destroyed). Tanks will move slowly along the ground to the east or west, tracking the direction of your aircraft. The tanks are armed with S.A.M. (Surface-to-Air-Missile) heat-seeking missiles which are a bit slower than the standard air-to-air missiles but are very effective at close range. When the missile is launched, the message "GROUND MISSILE ALERT" will flash.

The ground-launched S.A.M. missile has a limited range of about 5.5 miles, this range is just short of the distance to your aircraft carrier. If you are still on the aircraft carrier (or otherwise out of range) when the S.A.M. is launched, the missile will die off and disappear before it reaches you, at this point the warning "GROUND MISSILE ALERT" will stop.

If you are within the missile's range, you most likely stand a chance of being destroyed unless you evade a missile by deploying a flare, or initiating a S.A.M. break. (more on this technique later).

You will receive 50 points for each tank you destroy, and 75 points for destroying the tank barrack. The same game theory applies to the tank barrack as it did for the aircraft hangar. If you destroy the tank barrack then you have destroyed the tanks within it, and therefore won't have any more tanks to contend with. But since the point theory applied to the tanks and the barrack is the same as the airstrip/G.H.Q. you'll end up with a lot more points by destroying all ten tanks before destroying the tank barrack. Still with us? GREAT!

KEYBOARD CONTROLS



Make sure the Caps Lock key is not locked down.

Only one keyboard command will work at a time.

Backspace Resets the HARRIER STRIKE MISSION™ game.

0 **1** **2** **3** **4** Volume controls. Default is 1.

Q Quit game. This function EJECTS the disk. Inserting another disk will reset the computer.

F Forward View. **A** Aft View.

R Right View. **L** Left View.

T Top View. **-** **+** Zoom IN & OUT respectively when in the Top View mode

D Day/Night mission toggle switch.

P Pause mode. Press any key or **Click** to continue.

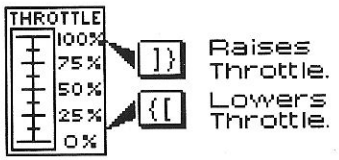
S Score. Displays point breakdown & PAUSE mode.

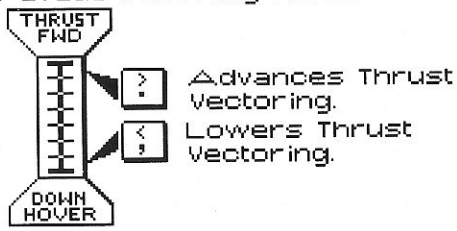
B Brakes. Use this key when landing to slow down.

M Missile. Launches 1 Aim-9 Sidewinder missile.

Space Bar Drop 1 Flare to evade incoming missile.

Click Fires cannon.





GAME PLAY

Well, now that you know what your mission is, and what you're up against, are you ready to give it a try?

Put your Harrier Strike Mission™ disk into the Macintosh's disk drive, turn on your Mac, disconnect the phone and get ready for your first Harrier Strike Mission™! (Dramamine and air sick bags are optional).

The game disk will load automatically and start with a short introduction to the game. The game will then ask what type of controller you are using, the "STANDARD MOUSE" that comes with your computer, or a "JOYSTICK ADAPTER".

Once you have selected your controller, you will be greeted with an Options Screen. You can choose "Day Mission"/"Night Mission", "Practice Flight", "Novice"/"Expert" and click the "Start" button to start.

If, at any time during the game, you wish to eject the disk and quit playing Harrier Strike Mission™, just press and hold down the "Q" key and the disk will be ejected (inserting another disk will reset your computer and boot the new disk). The only exception to this is when you are in the "High Scores" function, just use the QUIT in the pull-down menu to eject the disk and end the game (click the "Reset" button on the screen to reset the computer).

Certain keys are only scanned and processed approximately once every fifth of a second (or less, like the "Q" key). This is to allow the graphics to run at the highest possible speed, by not slowing down the processing in scanning the less important keys. This means that you should generally hold down a key until it is processed, rather than just hitting the key (until you become adept at the key timing).

JOYSTICK USE:

When using a joystick rather than a mouse, you'll notice a few differences in the "FEEL" of the controls. The mouse is a direct control device that institutes commands almost the instant they are given. When using the joystick you will notice a slight delay in commands, especially during landing maneuvers. After several missions the use of the joystick will become more natural and even more accurate allowing you to isolate your targets and destroy them with pin-point accuracy.

The joystick is attached to the mouse port located at the rear of the Macintosh with the raised buttons acting as the clicking action on a regular mouse.

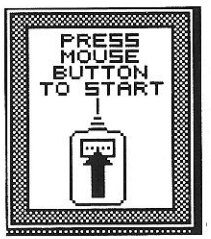
You may use any type of "HARDWARE ONLY" joystick adapter, this means the game will NOT function with joystick adapters that require a software driver. The "joystick adapter" mode basically simulates the use of an "ON/OFF" multiple switch joystick (such as those used on most home computers). If you have a KRAFT QuickStick™ (this is an analog joystick), you can play the game two different ways: if you have selected the "standard mouse" mode--set the switch on the QuickStick™ to the "J" position, if you have selected the "joystick adapter" mode-- set the switch to the "M" position.

D

DAY OR NIGHT MISSION:

Harrier Strike Mission™ gives you two different flight conditions, day or night. To activate a mission during the daylight hours simply do nothing and the program will automatically load daylight conditions, complete with sun. If the sun should assume a position in the center of your screen this will indicate that your climbing angle is 90 degrees (heading straight up). You must advance your thrust greater than 200 knots during this maneuver to keep from stalling out.

If you desire to fly at night, just select the "Night Mission" button while in the game options, and the course will be set for night maneuvers complete with stars to guide you. In case you want to change mid-flight to either of these two modes, a touch of the "D" key will induce change. This key can be used to toggle between "Day Mission" or "Night Mission" at any time during the game.



Demo Mode: If you don't touch your mouse or the keyboard, Harrier Strike Mission™ will automatically go into "DEMO MODE", where Harrier Strike Mission™ plays through an entire mission by itself. If you have touched the mouse or the keyboard to play HARRIER STRIKE MISSION™ then you're pretty brave because we haven't told you how to control your Harrier yet!

You may select either "Day Mission" or "Night Mission" to watch the Demo mode in, just click the proper button and wait a few seconds and the Demo of Harrier Strike Mission™ will start automatically. We recommend watching the demo mode to familiarize yourself with the game while giving special attention to your instrument panel, the enemy planes, tanks, missiles, location of the airstrip/G.H.Q., the use of your own missiles and Aden Cannon in actual combat.

DAY MISSION

OK

NIGHT MISSION

OK

PRACTICE FLIGHT

OK

START

NOVICE

OK

EXPERT

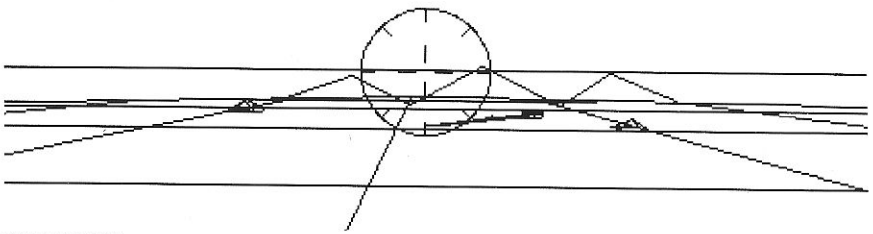
OK

OPTIONS:

LEVEL OF DIFFICULTY:

Harrier Strike Mission™ has two levels of difficulty: NOVICE and EXPERT. The level of difficulty you choose will be shown in the score indicator on the bottom-right of your screen. The NOVICE mode simplifies flying control on the mouse by giving you coordinated flight in all maneuvers. The NOVICE mode does not allow for advantageous moves such as "roll overs" while you are flying. The advanced flying techniques of the EXPERT mode will be discussed later in this section.

As you destroy one enemy aircraft, the next will fly faster and launch missiles more often. The tanks also launch missiles more frequently. If you selected Novice mode, the enemy aircraft will generally fly from slow to medium. In the Expert mode, however, the enemy aircraft will start out fast, and each successive aircraft will have a faster base speed.



PRACTICE:

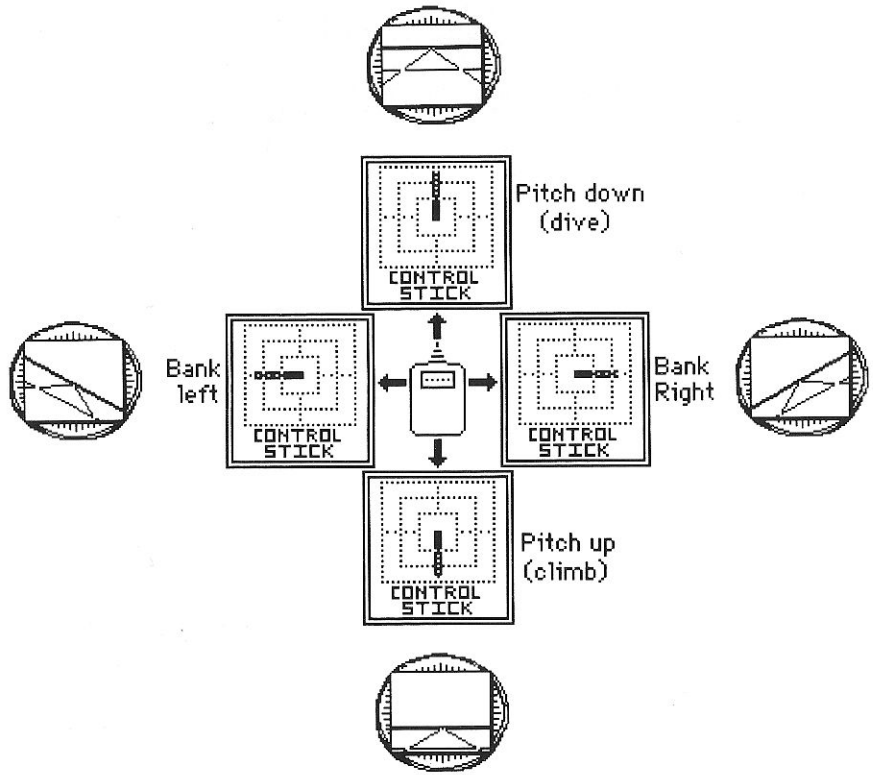
Because of its sophisticated flying ability, the Harrier is more difficult to fly than a conventional fighter aircraft. At first you should select the "PRACTICE FLIGHT" option using the NOVICE mode, which allows for much easier piloting of your aircraft.

Selecting the "Practice" mode will flash "PRACTICE" in the Air Speed Indicator. Playing the game using the "Practice" mode will NOT save your scores on disk. The "Practice" mode allows your aircraft to be destroyed and still allows you to continue playing the game. Your aircraft will continually regenerate itself. When you are destroyed, the message "HARRIER DESTROYED" will flash on the top-left corner of the

screen, and your Harrier will stay at this altitude during the explosion. If you switch to "TOP VIEW" (the "T" key) you will see your aircraft being destroyed, and then your aircraft will re-appear again. If you crash into the ground, your aircraft will simply bounce on the ground and still allow you to pull-up (gaining altitude) and continue. If you cannot get back off the ground, it is probably because you need to advance your throttle and/or thrust controls, or your Harrier is banked and/or pitched over too far. If this happens, and you cannot regain control over your aircraft, you can always reset the game (press the "Backspace" key).

The "Practice" mode will start you out at 550 feet, just above the south end of the island , at 137mph (just above stall speed). This allows you to practice banking & turning and generally getting the "feel" of the game.

The throttle starts out at 75% power, which is the recommended level. Higher throttle at low airspeeds will increase your altitude, lowering your throttle will decrease your altitude.



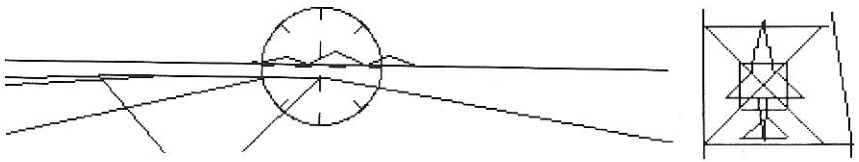
FLIGHT CONTROL USING THE MOUSE:

The NOVICE mode greatly simplifies the standard flying controls by adding an auto-coordinated rudder to the control stick. The mouse is used as your control stick. Just move the mouse forward to pitch your

nose down and put your aircraft into a dive (see illustration). You can see the "CONTROL STICK" on the instrument panel echo the mouse movements. If you move the mouse straight back (toward you) the aircraft will pull up and out of a dive. If you leave the mouse in this position you will pull your aircraft through an inside loop. Whenever you move the Control Stick forwards or backwards, you must center it to come out of the loop. If you move your mouse to the left, you will bank and turn to the left. Thus your rudder and ailerons are both coordinated by your Control Stick. You must move your Control Stick back to the right and then center it in order to come out of the turn. The point is that aircraft controls are pressure rate oriented, and are NOT immediate (absolute) controls as those in your family car. If you bank into a turn, you must bank the opposite direction to pull out of the turn. If you are in "straight and level" (relatively slow) flight, and you bank over more than a few degrees, you instigate a slow downward spiral. This is to point out that you will lose altitude quickly when you are in a bank (or turn) unless you increase throttle & thrust for more lift. The best way to become familiar with this is to try it under the PRACTICE option.

In the EXPERT mode you don't have any control of the rudder. This is the true mode of jet aircraft flying, since the rudder is little more than a stabilizer at high speeds and doesn't turn the aircraft. In order to turn in the EXPERT mode, you must first bank over either right or left and then pull back on the Control Stick (pitch up). Watch the compass and the scenery as you pull through a turn. This mode of flying allows for great aerobatic control. You can do barrel rolls easily, as well as inside and outside loops at any angle! As one pilot said about HARRIER STRIKE MISSION™, "I know the aircraft can do that, but I doubt the pilot would survive!" There are many such maneuvers you can accomplish with this simulator, just make sure you have plenty of altitude first.

If you fly out of the boundaries of the playfield of the game more than about 35 miles from the island, your aircraft will fly off the edge of the universe and appear on the other side. Therefore, if you are flying north past the island, and see the island disappear in the "Aft View" (the "A" key), switch to the "Forward View" (the "F" key). The island will now be in front of you. The same goes for flying off the east end of the playfield: you will appear on the west end of the playfield.



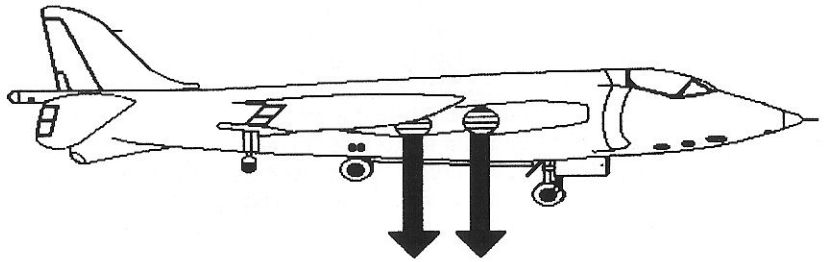
TAKEOFFS:

INFORMATION ABOUT ALL TAKEOFFS:

When you elect to play a game by not selecting the "Practice" option, you will be electing to initiate a takeoff. Once you click the "Start" button, you will see the forward view of your Harrier as you sit on top of the aircraft carrier. To get a better idea of this, just switch to the "Top View" (the "T" key) and zoom in (press the "-" key) to see your Harrier on

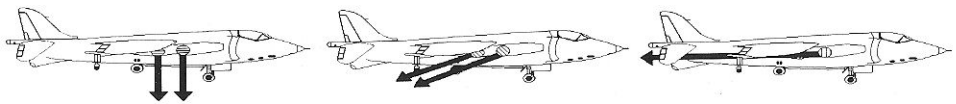
the center of the helicopter takeoff/landing pad. Shift back to the "Forward View" (the "F" key), and you will note the 3 mountains on the island approximately 3 miles in the distance.

You start out with the engine on and the throttle at zero. To initiate a takeoff, you must first advance the throttle (the "}" key). As soon as you have advanced the throttle, the attitude control system will turn on. However, you do not have enough engine output for the attitude control system until you have advanced the throttle to at least 25% power. At 25% power or above, the attitude control system will allow you to rotate (turn) around on the deck of the aircraft carrier. This is so you can taxi (ground steering) to another takeoff point, but your harrier will only move forward when you have at least 50% throttle and advance the thrust control (the ">" key) at least one unit. Once you have forward movement (to taxi or take off), the attitude control system will turn off, and you can now takeoff.



PERFORMING A VERTICAL TAKEOFF (V/STOL):

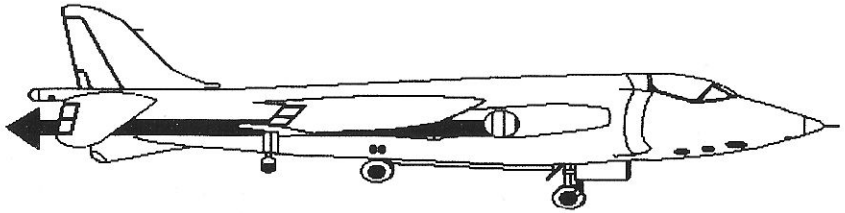
This is the most simple type of takeoff to perform. Start anywhere on the deck of your aircraft carrier. Make sure that your control stick is centered. Do not advance the thrust control. Just advance the throttle (the "}" key) to greater than 75% power. You will immediately be lifted up into the air. You are now technically hovering over your aircraft carrier, and you are also gaining altitude. At this point, you may continue gaining altitude until you want to move forward. When you first advance your thrust control (the ">" key) you will still be gaining altitude. You can leave the throttle at this level to compensate for altitude lost during banks and other maneuvers, or you can lower your throttle a little (the "<" key) until there is no change in the altitude indicator, this will put you in straight & level forward flight.



PERFORMING A V/STOL ASSISTED FORWARD TAKEOFF:

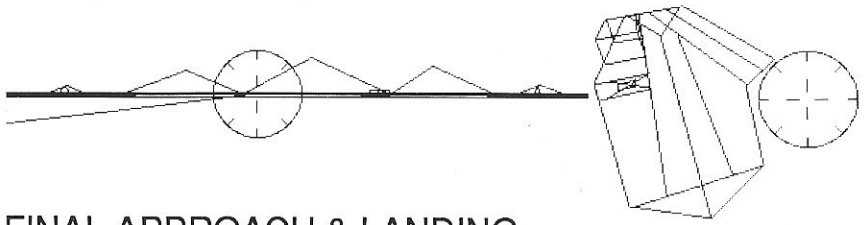
This takeoff maneuver is also very simple. Start anywhere on the deck of your aircraft carrier. Make sure that your control stick is centered. Just advance the throttle and the thrust controls at the same time by holding down BOTH the ">" and "}" keys at the same time. There are only a few key combinations that will accept 2 keys at the same time,

this is one of them. The thrust vectoring will automatically start advancing at the appropriate time. Just keep holding down these two keys until you have cleared the front end of the aircraft carrier. You are now in straight and level forward lifting flight. This is the takeoff maneuver that is most often used in a short takeoff situation.



PERFORMING A "STANDARD" HORIZONTAL TAKEOFF:

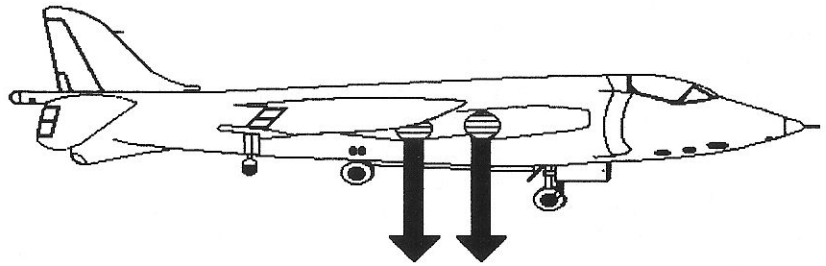
This takeoff maneuver is the method used by most conventional aircraft, except that you still must advance your thrust vectoring control. Start anywhere on the deck of your aircraft carrier. Make sure that your control stick is centered. Now, just advance your throttle (the "}" key) to just under 75% power. If you advance the throttle past the 75% power mark you will be in a vertical takeoff. Now that you are sitting stationary with 75% power, advance the thrust vectoring control (hold down the ">" key) which will immediately start your aircraft moving forward. Make sure you pull back on the control stick (to lift-off and gain altitude) before you clear the edge of the aircraft carrier, or your aircraft will end up destroyed in the ocean. You are now flying with standard forward (slightly elevated) horizontal movement.



FINAL APPROACH & LANDING INSTRUCTIONS

The amount of fuel you have left will affect the maneuvering time allowed over the landing area (either on the aircraft carrier or on the island).

The island's large area allows your calculations to be diverse, but landing on the aircraft carrier will demand a more definitive approach. As you approach the designated landing area you will need to assume a level flight attitude, with the targeting sight level with the horizon. Because you're flying a Harrier you need not approach from any certain direction, but will need to be level on touchdown to avoid being destroyed.



PERFORMING A VERTICAL LANDING (V/STOL):

A vertical landing means you will hover over your landing area (such as the helicopter pad on the aircraft carrier), and then lower your throttle thus losing altitude and gently setting your aircraft down on the ground.

To initiate a vertical landing, switch to the top-down view (the "T" key) to make sure you are directly over the area you wish to land. Switch back to a forward view (the "F" key) and level out your aircraft, the attitude control system will now hold the aircraft in this position. Now, just simply reduce the throttle control (the "{" key) until you are losing altitude. Do not reduce throttle more than necessary in order to lose altitude, you may drop down too fast and land too hard, thus destroying your aircraft. The throttle should generally be greater than 50% to perform a safe landing. Once you have touched down, the final score breakdown will be shown.

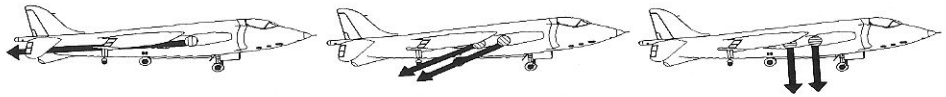
HORIZONTAL LANDINGS:

There are basically two types of horizontal landings you can perform in your Harrier; a "V/STOL assisted" landing, and a standard "flare out" type of landing.

PERFORMING A "FLARE OUT" LANDING:

A "flare out" landing is the standard landing method used in most conventional aircraft, where the aircraft makes a downward sweeping curve over the landing area and then pulls up the nose of the aircraft and lowers the throttle, slowly losing altitude and air speed and landing with the tail landing gear down first. This method of landing is difficult to illustrate and can be harder to perform than the "V/STOL assisted" landing.

If you do use this method, make sure you remember to lower your throttle immediately when you touch-down to insure that you don't "bounce" and end up just initiating a "touch & go". When you have landed, the appropriate message will blink on the screen. At this point you must press the "B" key for ground braking, or the "<" key to lower your thrust vectoring and therefore stop forward motion.



PERFORMING A "V/STOL ASSISTED" LANDING:

A "V/STOL assisted" landing is the same as the landing shown in the demo mode, where you lower throttle and lose altitude while keeping a "straight and level" attitude of your aircraft. This allows the Harrier pilot to see his final touchdown point at all times, and is the method most often used (and preferred) by Harrier pilots. Note that the landing shown at the end of the demo mode illustrates the hardest you can land and not destroy your harrier.

To perform a V/STOL assisted horizontal landing, first line up your target landing area directly in front of you and level out your aircraft. Simply lower your throttle control (the "{" key) until you are losing altitude. Do not reduce throttle more than you need to in order to lose altitude because you may drop down too fast and land too hard, destroying your aircraft. The throttle should generally be greater than 50% to perform a safe landing. If you land and your aircraft bounces and starts moving upwards (or stops moving and hovers), it is because you now have too much throttle to land and you simply need to reduce your throttle a bit more (press the "{" key some more) in order to finish your landing.

An easy way to see this type of landing is to select the "Practice" mode, click "Start" and immediately lower your throttle control (the "{" key) to just above 50% power. Make sure that you have not moved your control stick, keeping your aircraft in straight & level flight. This will gently bring your aircraft lower in altitude until you have touched the ground. You then need to brake (the "B" key) until you have stopped, and you will have just performed a "V/STOL Assisted" landing.

INFORMATION ON ALL TYPES OF LANDINGS:

You do not have to worry about landing gear in this simulation. Just be assured that they are down when you need them.

You must NOT be banked or pitched over more than 15 degrees in any direction when you land or your Harrier will exceed structural limits and be destroyed.

If you land and your aircraft bounces and starts moving upwards (or stops moving and hovers), it is because you now have too much throttle to land and you simply need to reduce your throttle a little bit more (press the "{" key some more) in order to finish your landing.

If you attempt a landing on the aircraft carrier, you do not have to choose a particular spot to land. Anywhere on the surface of the carrier will do fine.

Both landing areas, the island and the aircraft carrier are at the altitude of zero feet (sea level).

Once you are on the ground, moving the control stick left or right will not have any effect, since you cannot bank while stabilized on the ground. Pulling back on the control stick may pull you off the ground if you are over your stall speed. Pushing forward on the control stick may tip your aircraft over on it's nose and therefore destroy your Harrier.

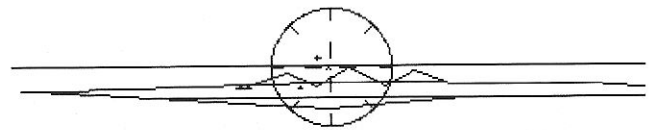
As soon as you have stopped forward motion and have all the

landing gear on the ground, the final scores will be shown along with any bonus points. The "SCORE BREAKDOWN" will show the air and surface points, but not the bonus points. Bonus points are only awarded if you successfully land, and are reflected at the top of the screen. The bonus for landing on the island is 500 points in the "Novice" mode, and 1000 points in the "Expert" mode. The bonus for landing on the aircraft carrier is 1000 points in the "Novice" mode, and 1500 points in the "Expert" mode. If you click the mouse, or press a key on the keyboard, the game will bring onto the screen the top ten high scores. Note, however, that you will NOT record your points in the "High Scores" function if you were playing in the "Practice" mode.

THE HIGH SCORES FUNCTION:

When you have played a game (not in the "Practice" mode), and have seen the scoring breakdown, you will then go to the high scores function. If there are any other scores already saved on the disk, these scores will appear on the screen. This routine saves only the top ten scores. If your score is not within the range of scores on this screen, you cannot save your score, and you must press the "GAME" button to continue. If you wish to quit the game, use the pull down menu option "QUIT" to eject the disk and stop playing (this will not save your score). If your score is one of the top ten, you can either enter your name & click the "OK" button (or press "Return"), or click the "GAME" button to exit this function and not save your score.

If ever you wish to eliminate the record of the scores that have been kept on your disk in order to start from scratch, just do the following: reboot (start up) your system from another disk. When you are in the Finder, eject this startup disk and insert the HARRIER STRIKE MISSION™ game disk. You will see a file called "scores" on the desktop, just drag this file into the trashcan to eliminate it. (Note: this is the only time you should be in the desktop on HARRIER STRIKE MISSION™.) You will see a file called "Reset & 'Boot' disk", you can double-click on this application to restart the game disk, or turn your computer off & back on. The next time you go to the high scores function, the scores will be blank and you will have started all over again.



GROUND MISSILE ALERT!
AIR MISSILE ALERT!

INITIATING A "S.A.M. BREAK":

A S.A.M. break is the method used to break away from an incoming missile. This is an advanced technique which is rather difficult to accomplish. Basically, you must be flying at a speed greater than 550 mph in order to break the path of the incoming missile. An incoming missile will track the shortest distance in order to destroy your aircraft.

You can easily see this by switching to the "Top View" mode (the "T" key) when there is an incoming missile. You may zoom in (pressing the "-" key) to get a closer look, or zoom out (pressing the "+" key) if you want to look at a larger area.

If you wish to try this technique, make sure your speed is at least 550 mph, wait until you see an incoming missile, then accelerate away from the missile. If the missile is still tracking you (upwards for instance), keep accelerating and turn (or pitch) into a 90 degree angle away from the missile and break away from the danger. Once you have achieved your maximum speed (800mph) and are heading away from the missile, you do not have to worry about the missile hitting you, even though the warning will continue to flash.

This techniqe will work for evading both surface-to-air and air-to-air missiles.

THE HARRIER & THE HARRIER II:

The Harrier used in the Royal Navy was originally designed by Hawker Siddeley Aviation (now British Aerospace) of The United Kingdom. The Harrier that is currently in use in the United States is the totally redesigned McDonnell Douglas AV-8B Harrier II. This is to point out that these are two different aircraft. There are still a few HSA Sea Harriers in use, and Spain uses the MD/H AV-8A as well as other countries.

Specifications shown are for the United States Marine Corps AV-8B HARRIER II:

Type:	Single-seat, single engine jet aircraft for close air support and interdiction missions. Based at small fields, remote forward sites ashore; small or large ship operations at sea. Capable of Vertical or Short Takeoffs and Landings (V/STOL).
Powerplant:	Rolls-Royce Pegasus 11 turbofan; Thrust 21,550 pounds; Internal fuel 7,759 pounds.
Length:	46.3 feet (14.1 meters)
Height:	11.6 feet (3.53 meters)
Wingspan:	30.3 feet (9.23 meters)
Wing area:	230 square feet (21.36 sq. meters)
Takeoff Gross Weight:	29,750 pounds (13,490 kg)
Operating Weight Empty:	13,086 pounds (5,935 kg)
Takeoff Distance:	0 - 1,500 feet (0 - 460 meters)
First Flight (Development):	November 1981
Crew:	One (AV-8B) and two (TAV-8B)
Combat Radius:	600-plus nautical miles
Ferry range:	2,000-plus nautical miles

External Stores:	9,200 pounds (4,175 KG) on seven external store stations; 2- 30mm Aden air-to-air/ air-to-ground cannon; 2- AIM-9 SIDEWINDER infrared heat-seeking missiles; up to four 300-gallon fuel tanks.
Max Speed (altitude):	1.12 Mach

HARRIER BACKGROUND INFORMATION:

When a ground commander calls for close air support, he needs it right away. Delays of 30 to 60 minutes could mean the difference between victory and defeat.

To provide flexible, timely close air support to its ground forces, the Marine Corps has turned to V/STOL (Vertical or Short TakeOff or Landing) technology for its close air support aircraft.

No large aircraft carriers or permanent air bases ashore are required for V/STOL operations. All the Marine pilots need are an amphibious assault ship, a clearing large enough for a 72-foot square aluminum mat, a section of two-lane road, or even a damaged "unusable" airfield.

The combat advantages of V/STOL have been proven by the Marine Corps' AV-8A Harrier, built by British Aerospace. Now the Marines have a much more capable, much more advanced version of the Harrier, the AV-8B HARRIER II, built by McDonnell Douglas Corp.

The AV-8B HARRIER II was designed from the ground up to meet the needs of the Marine Corps ground commander. It can fly distances and carry payloads that are comparable to those of conventional fighter aircraft that must operate from fixed runways.

With AIM-9 Sidewinder heat seeking missiles, air-to-air/air-to-ground cannon, and the unique air combat maneuvering ability inherent in V/STOL aircraft, the Harrier is more than capable of defending itself from the enemy.

If the Harrier pilot encounters an enemy aircraft, he has something available to no other combat pilot--the ability to direct his engine thrust during air combat maneuvering. The Harrier's vertical takeoff and landing ability is due to four nozzles--two on each side of the aircraft--positioned around the plane's center of gravity. These nozzles can be rotated from the full-aft position, for forward flight, to the full down position for vertical operations (hovering), and can be used to make the plane decelerate suddenly in the air, changing the Harrier's pursuer into the pursued when he flies past. The 21,550lb thrust Pegasus engine discharges entirely through these left and right pairs of nozzles fitted with deflectors which turn the flow through approximately 90 degrees. This thrust, when directed downward, will lift the Harrier straight up from the ground. All four nozzles are mechanically linked and actuated by a motor and drive shafts to point in the desired direction. The nozzles (along with attitude control jets) can also be used to pitch the aircraft's nose up when aiming the Harrier's cannon or other weapons.

Control at low airspeeds and during hovering is achieved by the use of compressed-air reaction jets at the wingtips, nose and tail. These jets are controlled by the conventional stick and rudder pedals.

When the nozzles are away from the horizontal position, engine bleed air is ducted automatically to the reaction jets to provide attitude control. The only cockpit control additional to those in a conventional fighter is a lever, alongside the throttle, which is moved to rotate the engine nozzles downward for vertical thrust, to rearward-aft for forward thrust. The technique of variable-thrust vectoring permits both vertical and conventional take-off and landing, or any intermediate degree of V/STOL operation. One unique feature of the Pegasus 11 engine is that some parts rotate clockwise, some counterclockwise to prevent gyroscopic effects that could make the aircraft difficult or impossible to control during vertical operations and the transitions from vertical to conventional flight. This single engine also powers the jet reaction control system which allows maneuvering while the plane is operating at zero airspeed.

In conventional aircraft, the pilot changes direction during flight by moving wing, tail and rudder surfaces. High speed airflow makes these surfaces effective in controlling the aircraft.

On the Harrier, however, there is no high speed airflow when the aircraft hovers. So engineers adapted a system from the space program that enables astronauts to change the attitude of their spacecraft. Jets of air "bleed" from the Harrier's engine are sent through nozzles in the plane's wingtips, nose & tail (see drawing).

To further reduce pilot workload, a stability augmentation and attitude hold system keeps the aircraft balanced and held during hovers and controls the transition from hover to conventional flight and then back to hover. All the pilot has to do is move the thrust vectoring control down to hover, and the attitude control system will take over and stabilize the aircraft. If the pilot wants to maneuver the aircraft while hovering (under attitude control), he simply moves the stick as he would during forward flight and air is released through the appropriate nozzles. There are no special controls to operate. This system is so effective that Harrier pilots can land vertically with their "hands-off" the control stick.

GLOSSARY OF TERMS

ALTIMETER: A control panel indicator that registers the altitude of the aircraft.

AILERONS: Controlling surfaces on the trailing edge of the wing that cause the aircraft to roll (bank) from side to side, and thus rotate on its longitudinal axis.

AIRFOIL: The shape of a wing design that produces lift.

ANGLE OF ATTACK: The angle of climb (or dive) in relationship to the lift factor of the airfoil.

AIR SPEED INDICATOR: Shows the speed of the aircraft registered in knots.

AIR-TO-AIR MISSILE: A missile that is fired from one aircraft to seek- out and destroy another aircraft.

ATTITUDE CONTROL: Jet reaction control & hold system that allows the Harrier to maneuver during vertical operations (hovering).

ARTIFICIAL HORIZON: An instrument that gives a reference in relationship to the ground position of the aircraft. Useful when the ground cannot be seen.

AXIS: A reference line passing through a body about which the aircraft rotates.

BANK: SEE ROLL.

CEILING: The maximum altitude obtainable by an aircraft.

COMPASS: Directional (heading) indicator.

CONTROL STICK: Regulates the direction, angle and heading of the aircraft.

COORDINATED TURN: When a turn is implemented using the rudder and the aileron simultaneously to avoid having the aircraft crab in the turn.

ELEVATORS: Control surface areas located on the horizontal stabilizer that increase or decrease the lift capabilities of the airfoil.

FAA: The Federal Aviation Agency, enforces the utilization of airspace within the United States.

FLAPS: Control surface areas that are used to control the amount of lift during takeoff or to impede the speed of the aircraft during landings. Flaps are not used in this simulation.

FLARE: A device that emits an intense heat signal designed to attract heat seeking missiles.

FLARE-OUT: A landing maneuver in which the pilot uses the basic glide approach to the landing zone, places the rear landing gear on the ground first and keeps the nose in a slight upward attitude.

HEAT SEEKING MISSILE: A missile armed with a device that locates a target by the heat emissions produced by exhaust, or by infrared location.

HEADS-UP (H.U.D.) DISPLAY: The visual weapon sight that is displayed on the visor or windshield of an attack aircraft.

HORIZONTAL STABILIZER: The aft appendage parallel to the wings that house the elevators and support the vertical stabilizer.

LEADING EDGE: The part of the airfoil that first encounters wind.

LIFT: Force generated by a moving airfoil.

MACH: The speed of sound, approximately 740 mph. (Mach 1).

PITCH: Movement of an aircraft around its lateral axis.

POWERPLANT: Normally an engine of varying types either jet, rocket, or piston propulsion.

QUICKSTICK™: The joystick manufactured by KRAFT(R) SYSTEMS that allows the Mac user an optional control device other than a mouse.

RATE OF CLIMB: The amount of vertical distance covered by the aircraft over a given period of time.

ROLL: Movement around an aircraft's longitudinal axis.

RUDDER: The movable control surface of the vertical stabilizer .

STALL: Loss of lift due to low speed or too great an angle of attack or both.

STOVL: Short TakeOff or Vertical Landing.

SURFACE-TO-AIR MISSILE (S.A.M): A missile that is launched from the ground at an aircraft.

THROTTLE: A control device that regulates the amount of power given to a power plant.

THRUST: A force or pressure that drives an object.

THRUST VECTOR: The direction of the thrust .

TOUCH AND GO: A flight maneuver in which takeoff immediately follows landing.

TURBOFAN: A turbojet engine in which a fan supplements the total thrust by forcing air diverted from the main engine directly into the turbine exhaust.

VERTICAL STABILIZER: The fixed vertical top fin assembly that houses the rudder.

YAW: A rotation around the vertical axis.

V/STOL: Vertical/ Short TakeOff or Landing.

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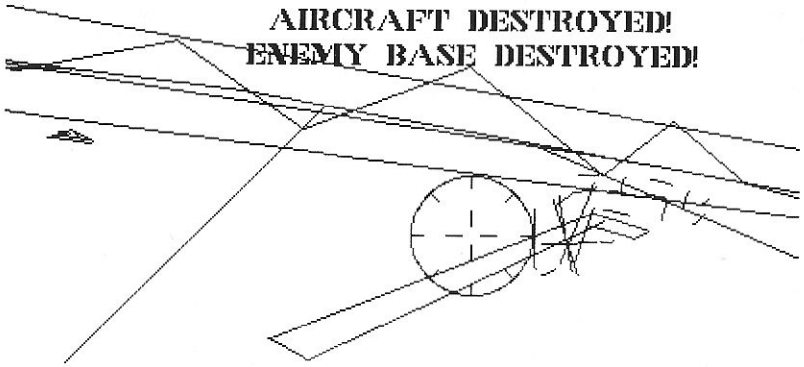

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Miles Computing, Inc.
Entertainment Software Division
21018 Osborne Street, Bldg. #5
Canoga Park, CA 91304
(818) 341-1411 Telex 595863, MILES COMP / TWX 9103337664

Timothy Hays, a brilliant 24 year old programmer from Monrovia, is one of the rising stars at Miles Computing. He began his programming career by writing games for various computers, most notably the Atari and now the Macintosh computer. Tim's strength lies in 3-D graphics programming which he combines with his meticulous sense of detail in creating realistic simulations. His latest effort, Harrier Strike Mission™, is a state of the art implementation of a flight combat simulator. The realistic use of true perspective 3-D graphics heralds a milestone in Macintosh software development. The creator of the now classic MacAttack!™ has put the finishing touches on a breathtaking new high speed 3-D graphics driver, and fans of his can look forward to a series of true 3-D graphics simulations. Look out starfighters, the much rumored space battle game is coming next!

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