



DIGITAL COMBAT SIMULATOR

# UH-1H **HUEY**



## QUICKSTART MANUAL

**Bell**  
Helicopter

A Textron Company

OFFICIAL LICENSED PRODUCT  
68-7213-35445



THE FIGHTER COLLECTION



Eagle Dynamics

# Health Warning

*Please read before using this computer game or allowing your children to use it.*

A very small proportion of people may experience a seizure or loss of consciousness when exposed to certain visual images, including flashing lights or light patterns that can occur in computer games. This may happen even with people who have no medical history of seizures, epilepsy, or “photosensitive epileptic seizures” while playing computer games.

These seizures have a variety of symptoms, including light-headedness, dizziness, disorientation, blurred vision, eye or face twitching, loss of consciousness or awareness even if momentarily.

**Immediately stop playing and consult your doctor if you or your children experience any of the above symptoms.**

The risk of seizures can be reduced if the following precautions are taken, (as well as a general health advice for playing computer games):

- Do not play when you are drowsy or tired.
- Play in a well-lit room.
- Rest for at least 10 minutes per hour when playing the computer game.

# INSTALLATION AND LAUNCH

Place the Setup.exe file and all .bin files in the same folder and double click on the Setup.exe file to begin installation. Then follow the on-screen instructions.

*Note: You will need to be logged into Windows with Administrator rights in order to install the game.*

## Starting DCS: UH-1H Huey

After installation, you will have two icons on your desktop, DCS World and DCS World Multiplayer.



DCS World is the PC simulation environment that the UH-1H Huey simulation operates within. When you run DCS World, you in turn launch DCS: UH-1H Huey.

The DCS World icon starts the game in single-player mode, and the DCS World Multiplayer starts the DCS multiplayer interface.

As part of DCS World, the Su-25T Frogfoot attack aircraft is also included for free.

After executing the DCS World icon on your desktop, the DCS World Main Menu page is opened. From the Main Menu, you can read DCS news, change your wallpaper by selecting either the UH-1H Huey or Su-25T Frogfoot icons at the bottom of the page, or select any of the options along the right side of the page. To get started quickly, you can select Instant Action and play any of the missions listed in the UH-1H Huey tab.

## Game Problems

If you encounter a problem, particularly with controls, we suggest you back up and then delete your *Saved Games\User Name\DCS\Config* folder, which is created by DCS on your operating system drive at first launch. Restart the game and this folder will be rebuilt automatically with default settings, including all of the controller input profiles.

If problems persist, we suggest consulting our online technical support forums at <http://forums.eagle.ru/forumdisplay.php?f=251>

## Game Manuals

Additional documentation for the UH-1H simulation, including the complete Flight Manual and a key commands guide can be found in the *Mods\aircrafts\UH-1H\Doc* folder of the game installation directory.

## Useful Links

### DCS Homepage:

<http://www.digitalcombatsimulator.com/>

### DCS: UH-1H forum:

<http://forums.eagle.ru/forumdisplay.php?f=251>

### DCS Wiki:

[http://en.wiki.eagle.ru/wiki/Main\\_Page](http://en.wiki.eagle.ru/wiki/Main_Page)

## ACTIVATION AND DEACTIVATION

Using the activation number provided (on back of Quick Start Guide or provided by online store), you will be required to activate your game purchase prior to flying a mission. During the Activation process, the copy protection system will create a hardware profile of your system and compare that to your current system each time you start the game. If there has been a significant change to your computer, like replacing significant hardware items or changing your Operating System, you may be required to reactivate your purchase.

Each game license (disk) has 10 activations and 10 deactivations. You can activate your game up to 10 times. The number of installations is unlimited!

This game also allows Activations Automatically (“AAA”) technology that enables you to create a new activation once every 31 days. This ensures that you can still play the game, even if Eagle Dynamics no longer exists someday. This function is enabled after all 10 default activations have been used.

If the copy protection system detects changes to your computer hardware/software as described below, an activation will be required. It's important to note that deactivations are utilized to save your activations when altering your PC hardware/software. Before conducting a PC upgrade/OS re-install, you can deactivate the product and when complete, reactivate without a loss of activations. Again though, you can install the game as much as you wish.

<http://www.star-force.com/support/users/deactivate/>

An activation will be required if the hardware/software changes exceed 12 points as rated below:

CPU ID: 13

Windows PID: 3

Computer Name: 3

Hard drive volume serial number: 3

MAC address: 6

RAM amount: 6

If you just uninstall the game and then reinstall it again on the same PC **without** reinstalling your operating system or changing hardware, you do not need to use a deactivation.

For further details on the copy protection system, please see the StarForce FAQ:

<http://www.star-force.com/support/users/group2.php>

In addition, a step-by-step (de)activation guide is available below:

<http://www.star-force.com/support/users/group4.php#6>

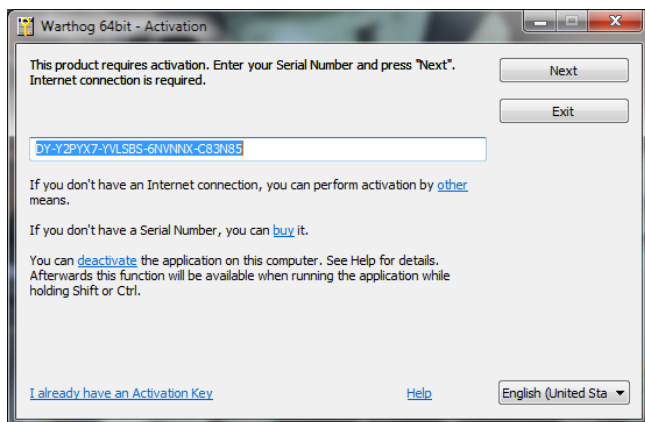
## Automatic Activation

The Automatic Activation method is the preferred method; an Internet connection is necessary.

Install the game to your computer. Launch it and fly a mission.

The Activation window will be displayed. Please follow the directions.

Enter your Activation Number which is printed on the DVD Quick Start Guide sticker or was provided to you via e-mail. Press the **Next** button.



The Automatic Activation is now complete.

## OTHER ACTIVATION METHODS

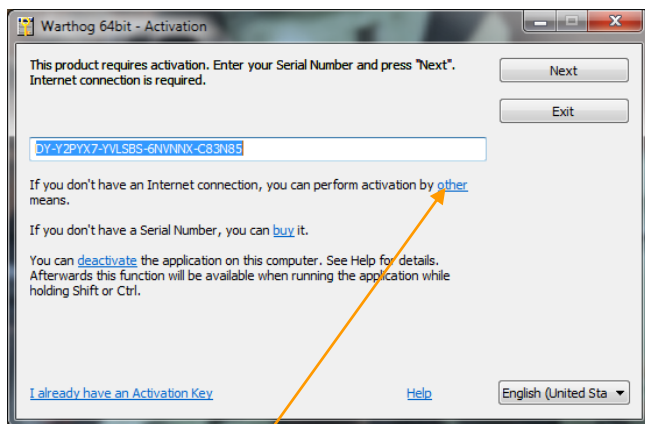
If the automatic process fails, you may use one of two other activation means (Internet connection is necessary for both):

**Activation via E-mail.** Using this activation, you will be provided a hardware code that can be sent to the provided e-mail address for activation.

**Activation via ProActive Web-site.** A hardware code will be entered into the ProActive Web-site for activation.

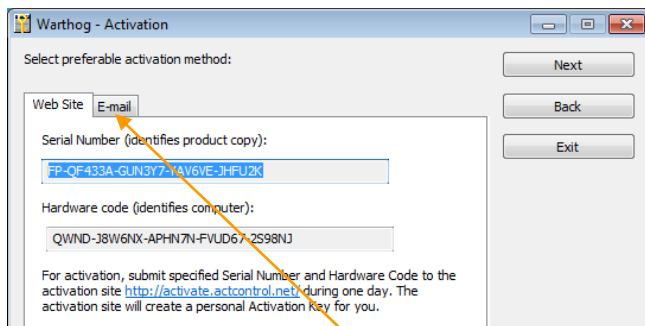
## Activation via E-mail

If the automatic activation fails, press the **Other** link just below the edit-box.



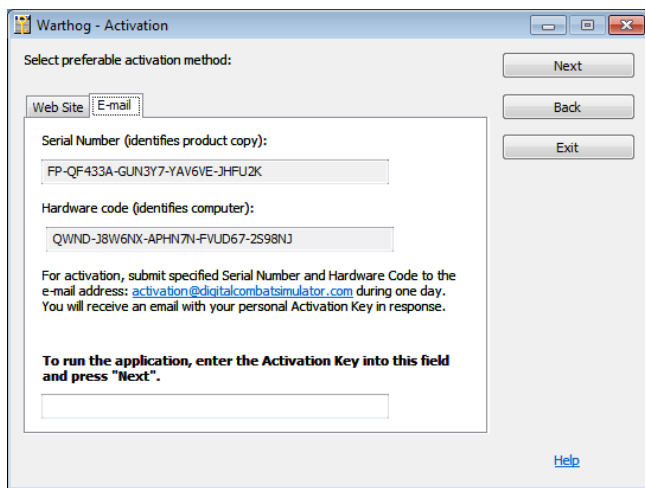
Press the **Other** link

Press the **E-mail** tab in the Information window.



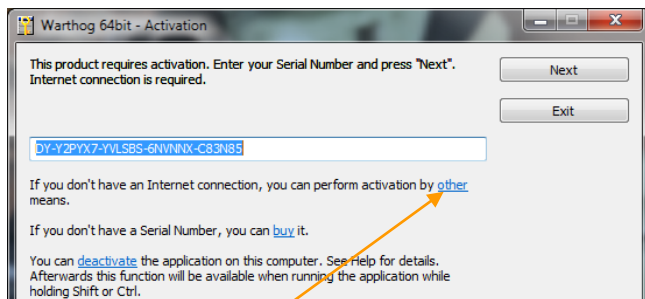
Press the **E-mail** tab

If you cannot send an e-mail now, copy your Serial Number, Hardware Code, and e-mail address shown in the Information window.



When convenient, open your e-mail and send your Serial Number and Hardware Code to the indicated e-mail address. You will be sent an Activation Key shortly afterwards. Enter your Activation Key to the Activation field and press the **Next** button. Activation by e-mail will now be complete.

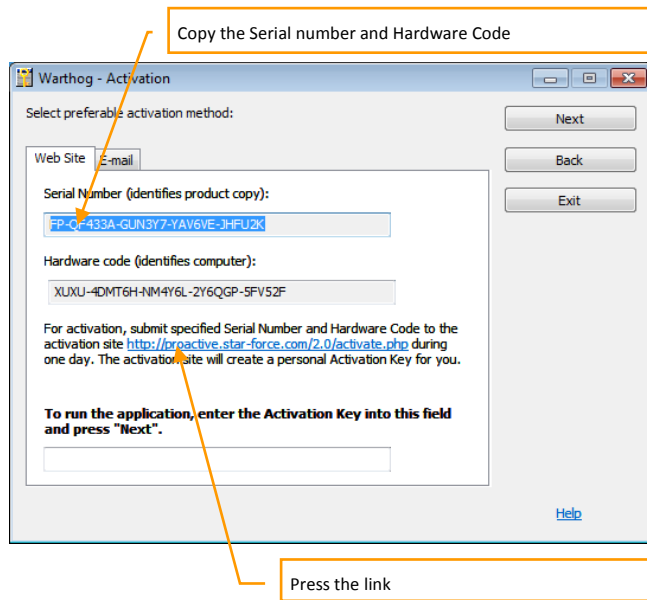
Activation via ProActive Web-site. If the automatic activation fails, press the **Other** link in the Activation window.



Press the **Other** link

Your Hardware Code is then displayed in the Activation window. Copy the Serial number and Hardware Code and save them to a safe location.





Press the [proactive.star-force.com/2.0/activate.php](http://proactive.star-force.com/2.0/activate.php) link in the Activation window. In case your computer is not connected to the Internet, you can save your Serial Number and Hardware Code and go to the link using another computer.

Enter the Serial Number and the Hardware Code to the corresponding fields of the ProActive Web-site and press the **Get Activation Key** button.

Enter the Serial Number

Enter the Hardware Code

Press the button

ProActive®

Product activation

Obtain an Activation Key to run and use the product on your computer. To obtain the key, you will need a Serial Number for the product and a Hardware Code generated automatically by the application at startup. To restore the deactivated product license, specify additionally a Deactivation Code obtained during deactivation of the product. If you have any questions, please contact the product technical support.

Serial Number:  
Enter your Serial Number for the product.

Hardware Code:  
Enter a Hardware Code

Deactivation Code:  
To reactivate the product on your computer, enable this field and enter a Deactivation Code obtained during deactivation of the product.

Get Activation Key

Copyright © Protection Technology, 2003-2009. All rights reserved.

You will then be provided your Activation Key. Copy it to a safe location.

ProActive®

Product activation

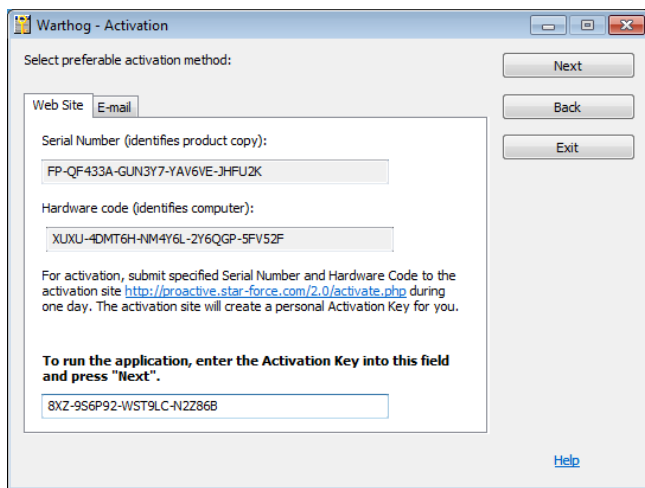
The Activation Key has been successfully generated. Write it down or save to a file for further input when running the application. Activation Key:

License parameters:  
Activations left: 7

If you have questions regarding product activation/deactivation, refer to the "Information" section or contact product technical support.

Copyright © Protection Technology, 2003-2009. All rights reserved.

Enter the Activation Key to the Activation field and press the **Next** button.



Activation via ProActive Web-site is now complete. If restrictions on game usage have been implemented, the Activation window will display the details. Press Ok to launch the game.

## Deactivation

To avoid using a product Activation, you may first Deactivate your installed game, make your changes, and then Activate again. You are provided 10 Deactivations.

You can launch the deactivation procedure by one of the two means:

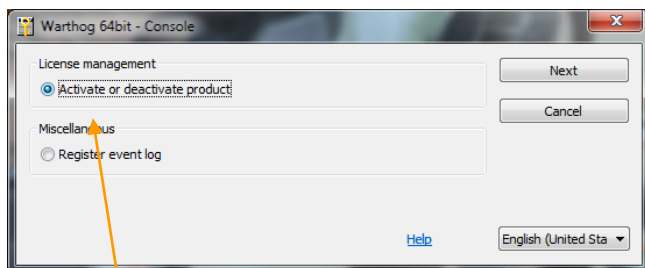
The Automatic Deactivation

Deactivation via ProActive Web-site

### The Automatic Deactivation

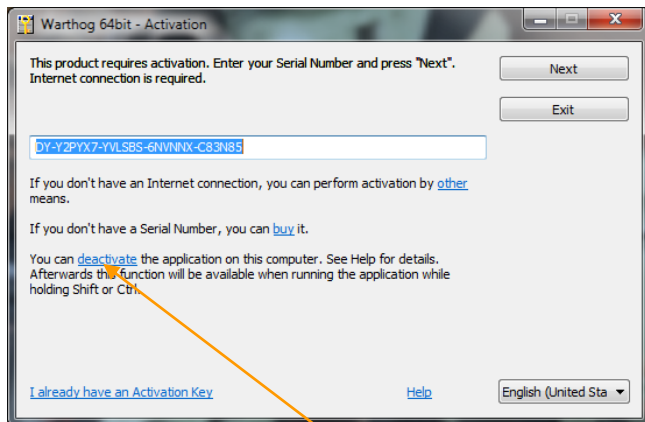
Run the **<aircraft name>\_protect.exe** file, which is located in associated aircraft folder into DCS World\Mods\aircrafts folder. For example, the P-51D Mustang: DCS World\Mods\aircrafts\P-51D\bin\x86\_64\p51\_protect.exe

Select the **Activate or deactivate application** command as displayed in the window, then press the **Next** button.



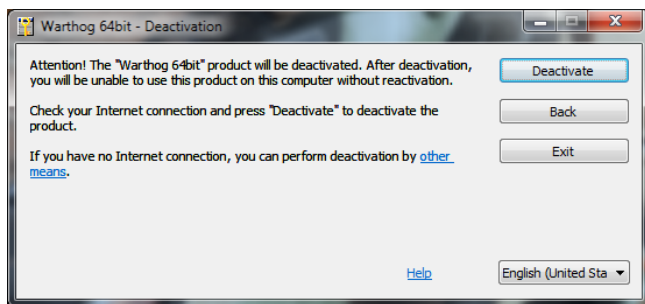
Select **Activate or deactivate product**

Press the **Deactivate** link in the displayed window (the Serial Number used to Activate the application is indicated in this window by default).

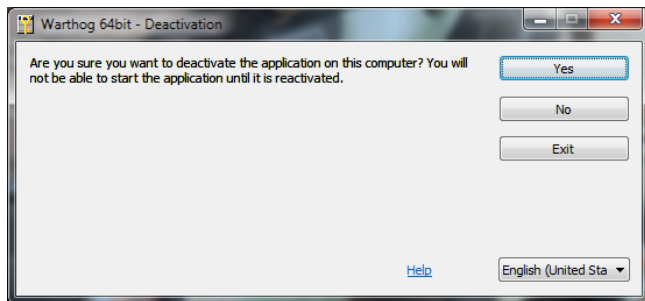


Press the **Deactivate** link

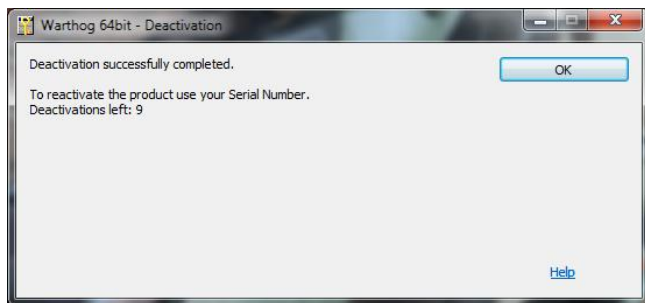
After pressing the **deactivate** link a window requesting deactivation confirmation is displayed.



Press the **Deactivate** button; the following message is then displayed.



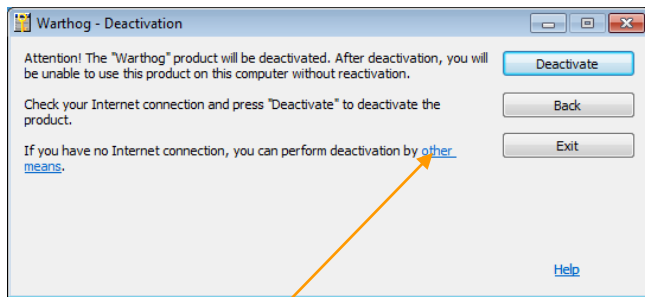
Press **Yes** button to begin the deactivation process.



Confirm the application deactivation with the **OK** button.  
**The Automatic Deactivation is now complete.**

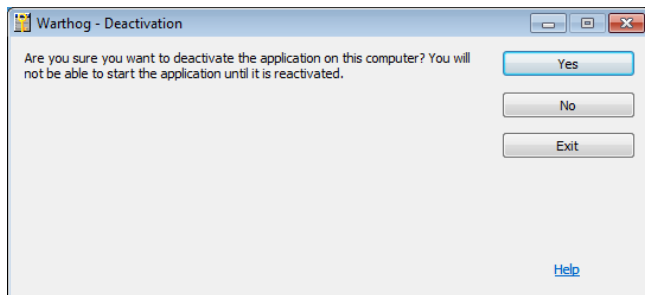
## Deactivation via ProActive Web-site

If automatic deactivation failed, or your computer is not connected to the Internet, a window suggesting deactivation appears. You click **other means** link in the Deactivation window.

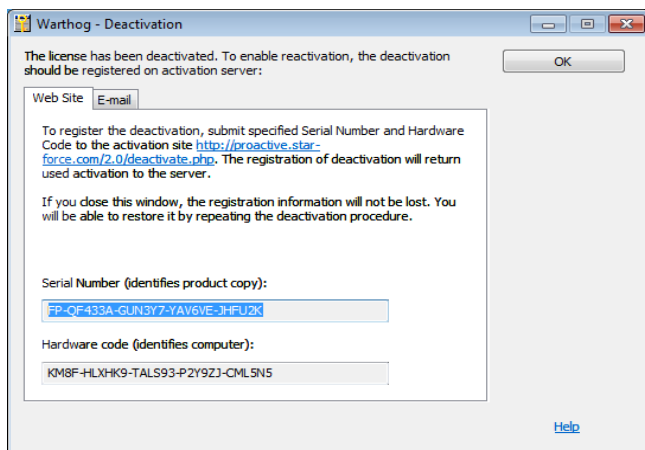


Click **other means** link

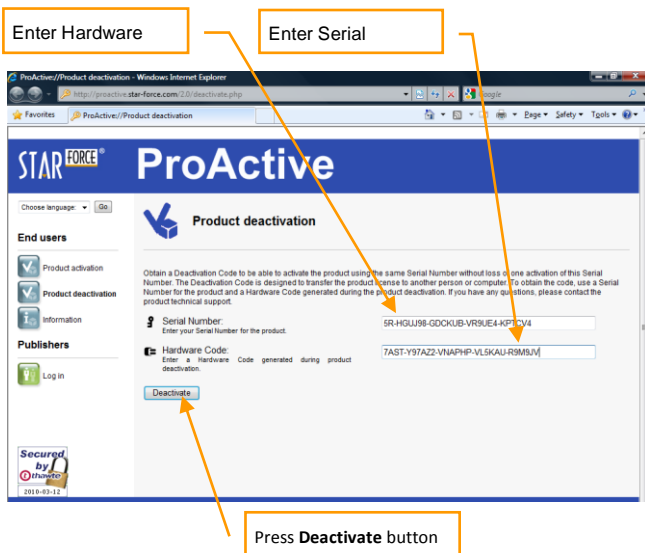
Press **Yes** button to begin the deactivation process.



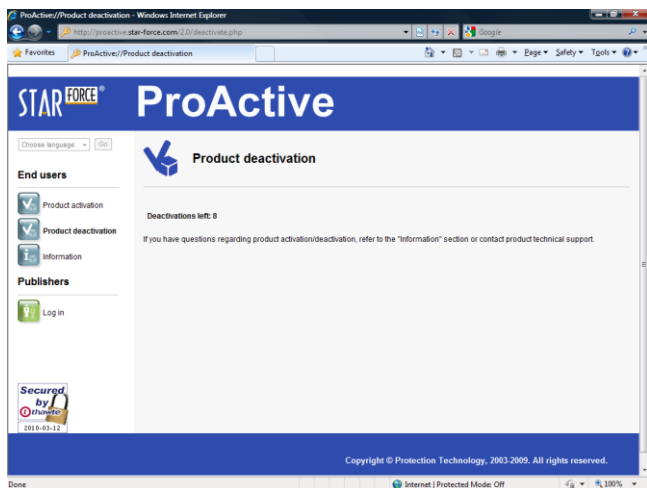
In the next window you should click <http://proactive.star-force.com/2.0/deactivate.php> link to go to ProActive Web-site.



Copy your Serial Number and Hardware Code shown in the window. When you get to the ProActive Web-site enter the indicated Serial Number and Hardware Code in the corresponding fields of the ProActive Web-site. And press the Deactivate button.



After that the following window with deactivation information will be displayed.



Deactivation via ProActive Web-site is now complete.

LAN and Internet play require Internet Authorization



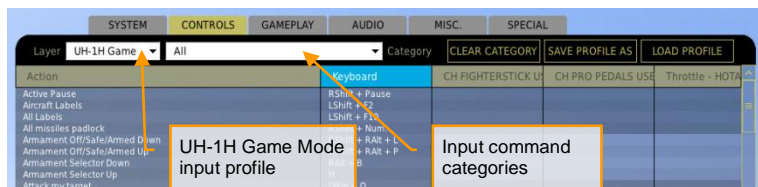
# GAME MODES

DCS: UH-1H Huey offers two “game mode” options: Game Flight Mode and Game Avionics Mode, which together turn this realistic simulation into an easy to play flying action game. Game modes can be selected in the OPTIONS – GAMEPLAY tab from the main menu using either the individual option bullets or the PRESETS buttons at the bottom of the menu.

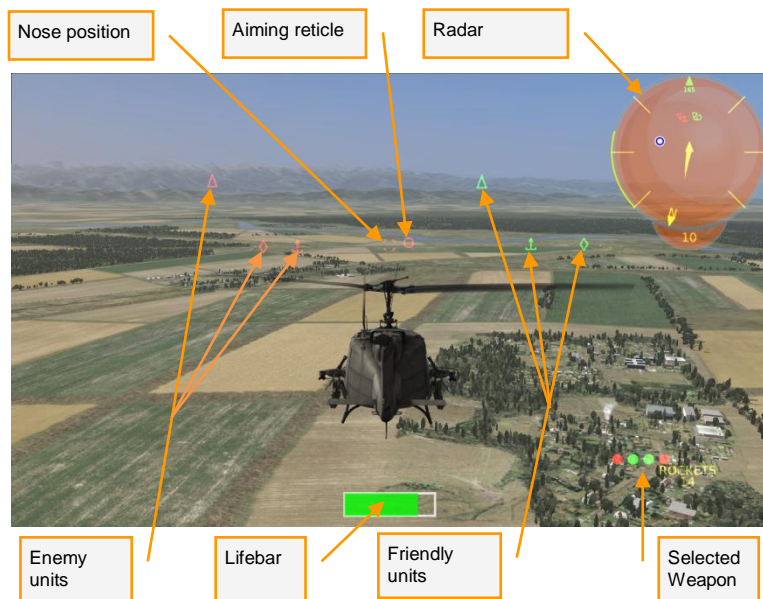


Game Flight mode makes the helicopter much easier to fly. This mode is especially recommended for beginners and users without a joystick. Game Avionics mode adds arcade-type indication to the screen and simplifies target detection, weapons selection and firing.

**Game Avionics mode uses a separate input profile from Simulation mode. See the OPTIONS – CONTROLS – “UH-1H Game” input profile for a full list of input commands when using Game Avionics mode.**



Game Avionics mode includes the following special indicators:



**NOSE POSITION.** The line of sight of the aircraft (direction of the nose).

**AIMING RETICLE.** The aiming point for the selected weapon.

**RADAR.** The 360 degree radar screen displays all of the units around your aircraft. You can cycle the scale of the display between 1, 5, 10, 20 or 50 km. The blue and white circle indicates your landing airfield.

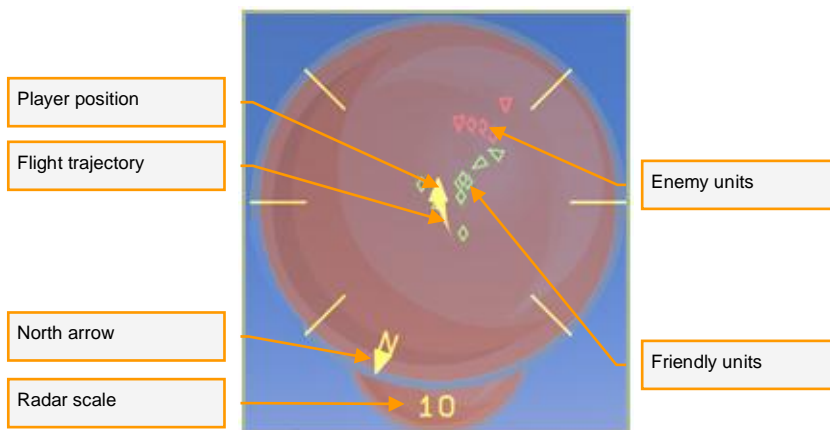
**ENEMY UNITS (RED).** Units belonging to the enemy coalition.

**FRIENDLY UNITS (GREEN).** Units belonging to the friendly coalition.

**LIFEBAR.** The lifebar of the helicopter indicating the amount of damage taken.

**SELECTED WEAPON.** Indicates the currently selected weapon and amount of ammunition remaining.

When playing in Game Mode, you can jump into the cockpit view by pressing **F1**. To return to the external Chase view, press **F4**.



	Red	Nose position
	Red	Aiming reticle
	Green	Current waypoint
	Red	Enemy Air Defense Unit
	Green	Friendly Air Defense Unit
	Red	Enemy ground unit
	Green	Friendly ground unit
	Red	Enemy aircraft
	Green	Friendly aircraft

## Common Game Avionics Mode Key Commands

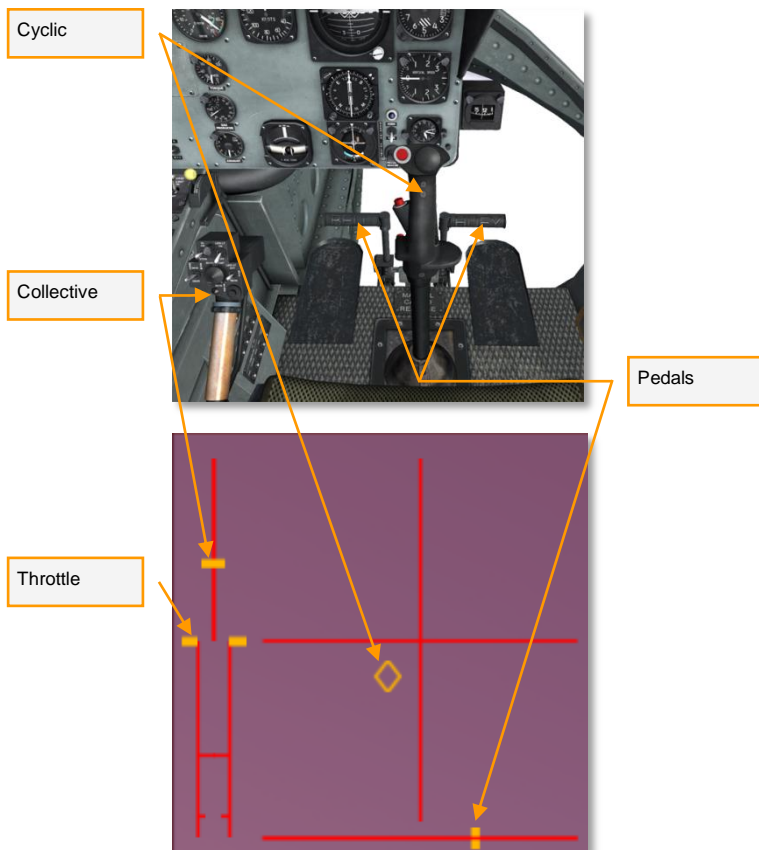
Below is a list of essential commands used when flying the UH-1H in Game Avionics Mode:

Nose down (accelerate)	[↑]
Nose up (decelerate)	[↓]
Turn (roll) left	[←]
Turn (roll) right	[→]
Nose left (yaw)	[Z]
Nose right (yaw)	[X]
Climb	[Q]
Descend	[A]
Automatic aircraft start	[LWIN + HOME]
Cockpit view	[F1]
Chase view	[F4]
Select crew position (pilot, copilot, gunners)	[1], [2], [3], [4]
Toggle mouse pan mode	[LALT + C]
Select weapons	[D]
Fire selected weapon	[SPACE]
Padlock view on center unit	[NumDel]
Release padlock	[NumLock]
Easy Radar, increase scale	[=]
Easy Radar, decrease scale	[-]
Toggle Controls Indicator (cockpit view)	[RCTRL + ENTER]
Toggle game pause	[PAUSE]

# HELICOPTER CONTROLS

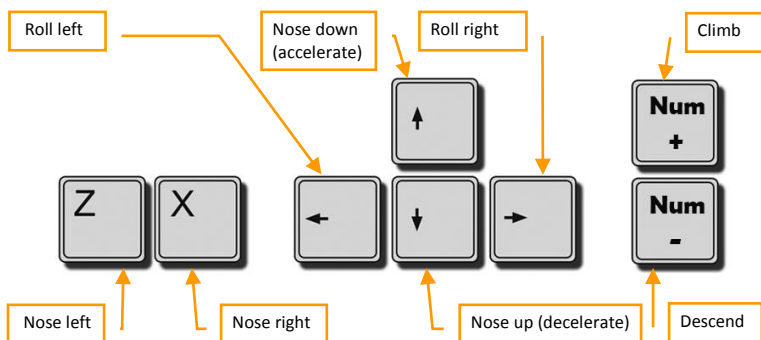
Primary helicopter flight controls include the cyclic control stick, collective control lever, and anti-torque pedals. The cyclic is the equivalent of a joystick and is used to raise or lower the nose and roll the helicopter left and right for turns. The collective is positioned by the pilot's side and is moved up and down to control the amount of lift being generated by the main rotor, essentially used to gain or lose altitude (climb/descend). The pedals are used to turn (yaw) the nose left or right along the horizon with minimal roll and can be used to rotate the helicopter when hovering.

When flying from the cockpit, you can toggle the Controls Indicator display by pressing **RCTRL + ENTER** to see a visual reference of the positions of your flight controls.



*Flight controls seen in the cockpit and indicated on the Controls Indicator*

You can control the helicopter by either joystick or keyboard. However a joystick with a rudder axis or separate rudder pedals is recommended. We have provided a sample control configuration for both joystick and keyboard below.



Helicopters are generally unstable and require constant and coordinated control input. A change in one of the controls will always require corresponding adjustments in the other controls. If you find the Simulation flight model too difficult or if you lack sufficient flight control hardware to fly it effectively, Game Flight Mode will offer the same flight physics, but with increased stability and controllability.

Pressing Climb **Num+** or Descend **Num-** on the keyboard will increase and decrease the amount of lift being generated by the main rotor, resulting in a gain or loss of altitude.

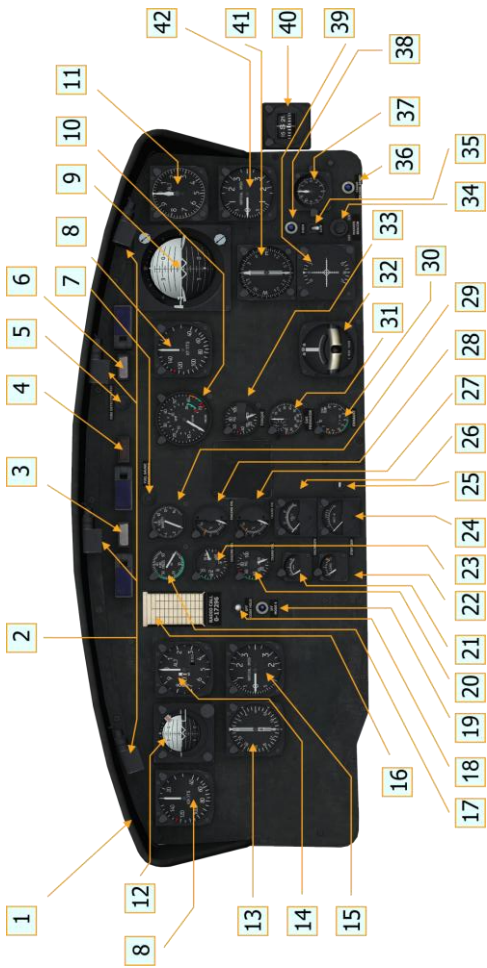
Pressing Nose Down **↑** on the keyboard or pushing the joystick forward will lower the helicopter's nose and begin forward acceleration. Pressing Nose Up **↓** on the keyboard or pulling the joystick back will raise the nose and slow the helicopter down or make it fly backwards from a hover.

Pressing Roll Right **→** or Roll Left **←** on the keyboard or pushing the joystick to the sides will cause the helicopter to roll and begin a turn in the direction of roll. The greater the roll angle, the faster the rate of turn. To stop the turn and return to level flight, roll the helicopter in the opposite direction of the turn until the horizon is level again.

Pressing Nose Left **Z** or Nose Right **X** on the keyboard will cause the helicopter to turn its nose to the left or right (yaw) with minimal roll, similar to turning the wheel in a car. The amount of yaw available is limited and depends largely on airspeed. When flying fast, the oncoming airflow makes it difficult for the helicopter to yaw against it. Yaw control is primarily used to control the helicopter's direction in a hover and maintain straight and level flight when flying at higher speeds.



INSTRUMENT PANEL



1. Glareshield
2. Secondary lights
3. Master caution
4. RPM warning light
5. Fire detector test switch
6. Fire warning indicator light
7. Fuel gage test switch
8. Airspeed indicator
9. Attitude indicator
10. Dual tachometer
11. Altimeter indicator (AAU-31/A)
12. Attitude indicator
13. Radio compass indicator
14. Altimeter indicator (AAU-32/A)
15. Vertical velocity indicator
16. Compass correction card holder
17. Fuel pressure indicator
18. IFF code hold switch
19. IFF code hold light
20. Transmission oil pressure indicator
21. Main generator loadmeter
22. Standby generator loadmeter
23. Engine oil pressure indicator
24. AC voltmeter
25. Compass slaving switch
26. DC voltmeter
27. Transmission oil temperature indicator
28. Engine oil temperature
29. Fuel quantity indicator
30. Exhaust gas temperature indicator
31. Gas producer tachometer indicator
32. Turn and slip indicator
33. Torquemeter indicator
34. Marker beacon volume control
35. Marker beacon Sensing Switch
36. Cargo release armed light
37. Clock
38. Marker beacon light
39. Omni indicator
40. Magnetic compass
41. Radio compass indicator
42. Vertical velocity indicator

# STARTING THE HELICOPTER

The automatic start-up procedure can be activated by pressing **LWIN + HOME**.

Automatic shut down can be activated by pressing **LWIN + END**.

## 1. Overhead switches and circuit breakers:

- AC POWER switches:
  - PHASE switch-AC. **LSHIFT + R**
  - INVTR switch-OFF. **LSHIFT + I**
- DC POWER switches:
  - MAIN GEN switch-ON and cover down. **LSHIFT + Q**
  - VM selector-ESS BUS. **LSHIFT + H**
  - STARTER GEN switch-START. **LSHIFT + X**
  - BAT switch-ON. **LSHIFT + P**



## 2. Center pedestal switches:

- GOV switch-AUTO. **G**
- FUEL switches:

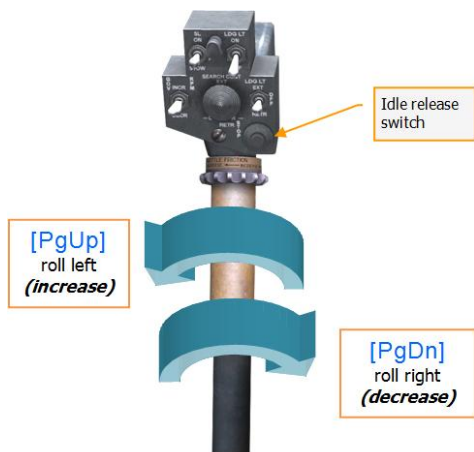
- MAIN FUEL switch–ON. **F**
- All other switches–OFF.



- HYD CONT switch–ON. **LALT + I**
- FORCE TRIM switch–ON. **LALT + U**
- CHIP DET switch–BOTH.



- Throttle – set to IDLE for engine start:
  - Press and hold **PgUp** to increase throttle from FULL CLOSE to FULL OPEN.
  - Press and hold **PgDn** to decrease throttle from FULL OPEN to the IDLE STOP position.



1. FULL CLOSE position

2. IDLE STOP position

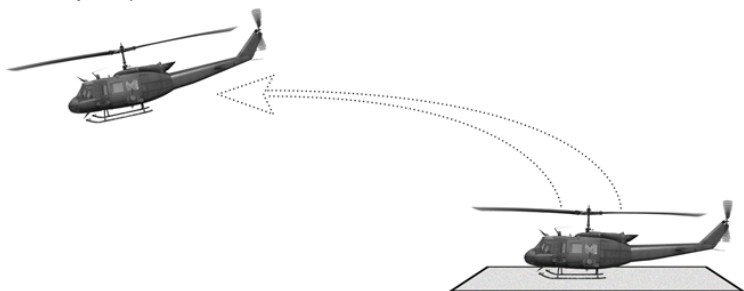
#### 4 Engine:

- Start switch - press **and hold**; note start time. **HOME**
- Main rotor – Check that the main rotor is turning as Gas Producer speed reaches 15%. If the rotor is not turning, abort the start.
- Start switch – Release at 40% Gas Producer speed or after 40 seconds, whichever occurs first.
- Throttle — Slowly increase to set normal RPM. **PgUp**
- INVTR switch – MAIN ON. **LSHIFT + U**

# FLYING THE HELICOPTER

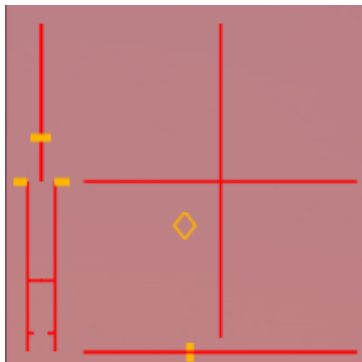
## Takeoff

Because the UH-1 undercarriage uses skids instead of wheels, takeoffs are normally performed using a vertical “pickup” from the ground into the air, followed by forward acceleration and climb to transition into forward flight. Performing a vertical takeoff can be challenging at first, especially when playing in Simulation mode, as it requires coordinated, continuous, and smooth inputs of the cyclic, pedals, and collective.



To begin the takeoff, gently raise the collective (**Num+**). The cyclic will generally need to be pulled back and to the left (about 20% in each direction) to maintain a stable attitude. The left pedal will also need to be pressed in about 30% of the way to prevent the helicopter from yawing to the right. Continue to **slowly** raise the collective and use careful stick and pedal inputs to maintain the position of the nose and prevent any sliding along the ground. When done correctly, the helicopter will slowly lift off the ground and into a stable, low altitude hover with minimum changes in position and direction.

Here is an example of the approximate positions of the flight controls during a vertical takeoff, hover, and vertical landing:

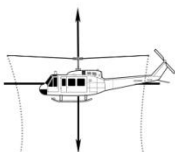


After lifting off to an altitude of a few feet off the ground, lower the nose slightly by releasing some back pressure on the stick to begin accelerating forward. Slightly increase collective as you move the stick forward to prevent a loss of altitude as the nose lowers.

To accelerate forward, keep the helicopter's nose slightly down. To slow down, raise the nose up (pull the stick back). If you keep the helicopter's nose raised after it stops moving forward, it will begin to fly backwards. Use the collective (**Num+** / **Num-**) to increase/decrease the amount of lifting power being generated by the rotor and control altitude as the nose is raised or lowered.



Forward flight



Hover





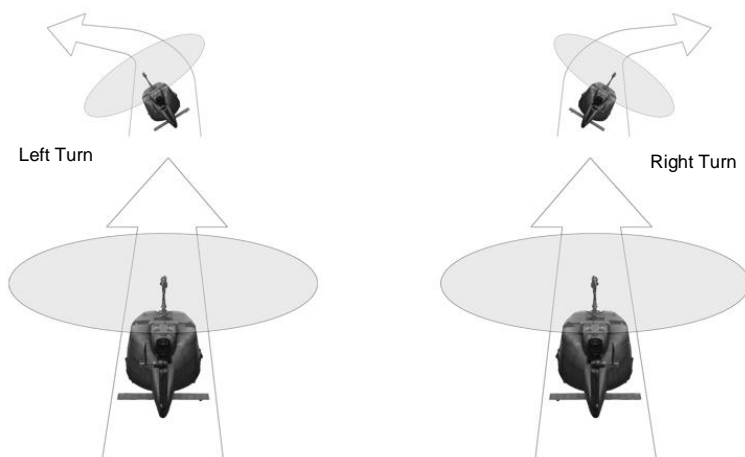
Reverse flight



As your airspeed builds, the nose will tend to rise up. Anticipate this and compensate for it by pushing the cyclic forward. As you transition from a hover into forward flight above 30 knots, the cyclic will move from a back-and-left position to an approximate forward-and-center position. Similarly, as airspeed builds the amount of pedal input required will be reduced. At fast airspeeds, such as above 80 knots, the helicopter will tend to roll left, so increasing cyclic to the right will also be necessary to maintain level flight.

## Turning

If the helicopter is in forward flight, turn by rolling in the direction of the turn

( /  or cyclic to the left/right). Turn rate can be increased with some additional pedal input into the turn and a slight pull of the cyclic.



In a hover or at very low airspeeds, the helicopter can be turned using the pedals ( / ) to rotate the nose along the horizon.

## Hover

One of the essential skills of helicopter control is hovering. Like takeoff, hovering requires careful, smooth, and coordinated control input.

To enter a hover from forward flight, you will need to first reduce your airspeed without losing altitude. To do so, simultaneously raise the nose up about 20 degrees by pulling the cyclic back and **decrease** collective to prevent altitude gain. Keep a careful eye on the vertical velocity and airspeed indicators. As your speed bleeds off to below 50 knots, be ready to **increase** collective and lower the nose to attain a near hovering position at a low airspeed. Timely increase of the collective is critical as your airspeed bleeds off to below 30 knots in order to



avoid entering a vortex ring state (VRS), where the helicopters gets “sucked” into its own downwash and begins to plummet toward the ground.

Keep in mind that increasing and decreasing collective will always require corresponding adjustments in cyclic and pedals in order to maintain stable flight. In general, *increasing* collective will tend to also pull the nose *right*, requiring additional *left* pedal input to compensate. Conversely, *decreasing* collective will tend to pull the nose to the *left*, requiring increased *right* pedal input to compensate.

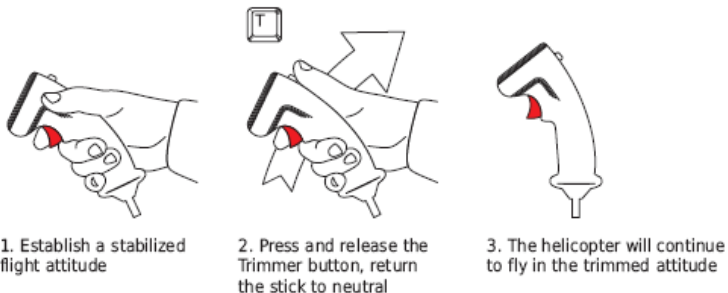
## Landing

To perform a landing, begin a stable descent toward the landing point. Keep your airspeed around 80 knots and rate of descent under control by using the collective and cyclic controls. Try to enter a hover over the landing point and then carefully reduce collective to lower the helicopter to the ground.

A run-on landing is also possible, where the helicopter lands with some forward speed and skids to a stop on the ground.

## Trim

The helicopter is rarely flown with either the cyclic or pedals in the neutral position. In the real helicopter, the pilot is able to press a trim button on the cyclic to set the controls in their current position. However, because most PC controllers don't have a similar trim capability, a special trim function is available in the simulation. To trim the controls in their current position, press and release the Trimmer button **T**, then quickly return the stick and pedals to the neutral



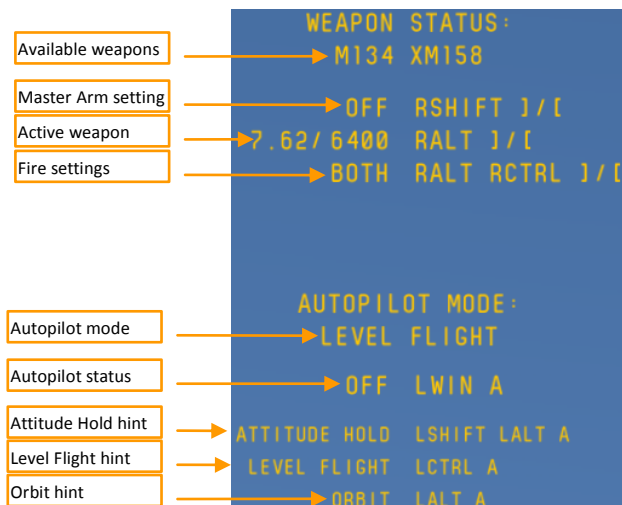
position. You can cancel trim at any time by pressing **CTRL + T**.

# WEAPONS EMPLOYMENT

The DCS UH-1H is equipped with the M23 armament system, M21 armament sub-system, and M93 armament sub-system. The M23 armament system includes two swiveling M60D machine guns operated by the door gunners. The M21 armament sub-system includes the M134 miniguns and rocket launchers attached to the external weapon stations of the helicopter. The M93 armament sub-system includes two M134 miniguns on a similar swiveling mount as the M60D guns of the M23 armament system, but providing much more firepower.

## Weapon Systems and Autopilot Status Indicator

DCS: UH-1H includes a special weapon systems and autopilot status indicator on the right side of the screen to help quickly assess the status of your weapon systems and autopilot modes, as well as get quick hints of the keyboard commands required to operate them. The display can be turned on and off by pressing **LCtrl + LShift + H**.



**AVAILABLE WEAPONS.** Displays the weapons currently loaded on the helicopter.

**MASTER ARM SETTING.** Displays the position of the Master Arm switch (OFF/SAFE/ARMED) and the keyboard commands used to change it. Needs to be set to ARMED to fire weapons.

**ACTIVE WEAPON.** Displays the currently selected (active) weapon system, rounds remaining, and the keyboard commands used to change weapon systems.

**FIRE SETTINGS.** Displays the fire settings for the selected weapon and the keyboard command used to change them. When the M134 gun system is active, the fire setting can be set between the left, right, and both guns, each on one side of the helicopter. When rocket launchers are active, the fire setting indicates the maximum number of pairs of rockets to be released while the weapons trigger is depressed.

**AUTOPILOT STATUS.** Displays the status of the autopilot (ON/OFF) and the keyboard command used to change it.

**AUTOPILOT MODE.** Displays the currently selected autopilot mode (ATTITUDE HOLD/LEVEL FLIGHT/ORBIT).

**ATTITUDE HOLD HINT.** Displays the keyboard commands used to selected ATTITUDE HOLD autopilot mode.

**LEVEL FLIGHT HINT.** Displays the keyboard commands used to selected LEVEL FLIGHT autopilot mode.

**ORBIT HINT.** Displays the keyboard commands used to selected ORBIT autopilot mode.

## M23 and M93 Armament Systems

To use the side door guns of the M23 or M93 armament systems, simply press **3** or **4** to take the position of the desired side door gunner.



To aim the gun, press **ALT + C** to enable mouse pan control mode. Once turned on, you can aim the gun using the mouse and fire by pressing **SPACE**. You can use the mouse wheel or the **Num\*** and **Num/** keys to zoom the view in and out, as well as adjust the 3D position of the view by holding the mouse wheel down while moving the mouse.

When you switch to a gunner's position, the autopilot turns on automatically to fly the helicopter according to the set autopilot mode. Autopilot can be turned on and off at any time by pressing **LWIN + A**.

## M21 Armament Subsystem

The M21 armament sub-system consists of two M134 6x barrel 7.62mm high rate of fire machine guns and two 7 tube M158 2.75 inch aircraft rocket launchers.

### M134 7.62mm “Minigun”

The M134 automatic guns can be fired in either Stowed or Flexible modes. In Stowed mode, the guns are kept pointing straight and are aimed by pointing the nose of the helicopter directly toward the target. In Flexible mode, the guns can be steered horizontally and vertically using the left pilot's flexible aiming sight to point at the target, allowing the right pilot to fly the helicopter away from the target while the left pilot engages.

The left pilot can fire the 7.62mm subsystem automatic guns from the Stowed or Flexible position, while the right pilot can only fire the subsystem from the Stowed position.

### Stow Mode

The guns may be stowed in a predetermined position and fired as a fixed weapon by the left or right pilot. This permits straight-ahead firing in an emergency by use of the firing switch on the pilot's or gunner's cyclic stick. To fire the automatic guns in the stow position, the armament selector switch is moved to "7.62" (**RALT + J** / **RALT + I**) and the OFF-SAFE-ARMED switch to ARMED (**RSHIFT + J** / **RSHIFT + I**).





The pilot uses the XM60 infinity sight for stow fire by turning the elevation depression knob until the sight reticle pipper coincides with the strike of the bullets. Press **RSHIFT + M** to lower/raise the sight and **RCTRL + M** to turn the reticle lamp on/off.



### Flexible Mode

To employ the guns in Flexible mode:

- Disengage the sighting station from its stowed position. **M**

- Aim by moving the sighting station using the Numpad  /  /  /  keys or enable mouse pan mode by pressing **LALT + C** to aim with the mouse.
- Fire by pressing the **SPACE** key.

When Flexible Mode is engaged, the “Flexible Mode Active” indication is added to the Weapon Systems and Autopilot Status Indicator.

When you are in the left pilot's position and have Flexible Mode active, the autopilot turns on automatically to fly the helicopter according to the set autopilot mode. The autopilot can be turned on and off manually by pressing **LWIN + A**. The autopilot engages when the following conditions are all true:

- Flexible Mode Active
- OFF-SAFE-ARMED switch is in the ARMED position





### M158 2.75" Unguided Rockets

The 2.75-inch rocket launchers are fixed to the support assembly and can only be fired from the Stow position. When the armament selector switch is positioned at "2.75", the primary subsystem mode is rocket firing by means of cyclic stick firing switches.

To employ unguided rockets:

- Prepare the XM60 infinity sight for rocket fire. Press **RSHIFT + M** to lower/raise the sight and **RCTRL + M** to turn the reticle lamp on/off.
- Set the armament selector switch to "2.75". **RALT + ]** / **RALT + [**
- Set the rocket PAIR SELECTOR switch (to the desired number of rocket pairs to be fired. **RCTRL + ]** / **RCTRL + [**
- Position the OFF-SAFE-ARMED switch to ARMED and check to see that the SAFE indicator light goes out and the ARMED indicator light illuminates. **RSHIFT + ]** / **RSHIFT + [**
- Using the sight reticle pipper as a reference aiming point, acquire the target by flying a target collision course, changing the attitude of the helicopter as necessary to align the sight reticle on the target.



- When the proper sight picture has been developed, fire the rockets by depressing the firing switch on the cyclic control stick. **SPACE**

## AI Gunners Control and Status

The left pilot, left and right door gunners can be set to autonomously engage targets of opportunity. The left pilot engages targets with the M134 miniguns in Flex mode, while the door gunners engage targets using either the M134 door gun or the M60D door gun, depending on the payload profile. Turning on AI gunners requires setting the Rules of Engagement (ROE) mode for the desired gunner. In addition, the firing burst length can be set between Short and Long burst. These and other parameters can be monitored on the CREW STATUS panel.

CREW STATUS:			
HEALTH	ROE	AMMO	BURST
PILOT	PLAYER	-	-
CO-PILOT	HOLD	100%	SHORT
LH GUNNER	RET. FIRE	100%	LONG
RH GUNNER	FREE FIRE	100%	LONG

To cycle the ROE setting, press **LCTRL + 2**, **LCTRL + 3**, **LCTRL + 4** for the left pilot, left door gunner, and right door gunner, respectively.

The burst setting can be cycled between SHORT and LONG by pressing **LSHIFT + 2**, **LSHIFT + 3**, **LSHIFT + 4** for the left pilot, left door gunner, and right door gunner, respectively.

## M130 Flares Dispenser

The M130 Flare Dispenser M130 will dispense up to 2x30 decoy flares as a countermeasure to infrared seeking missiles. To deploy flares two at a time (one from each side of the fuselage), press **LCTRL + C**.



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