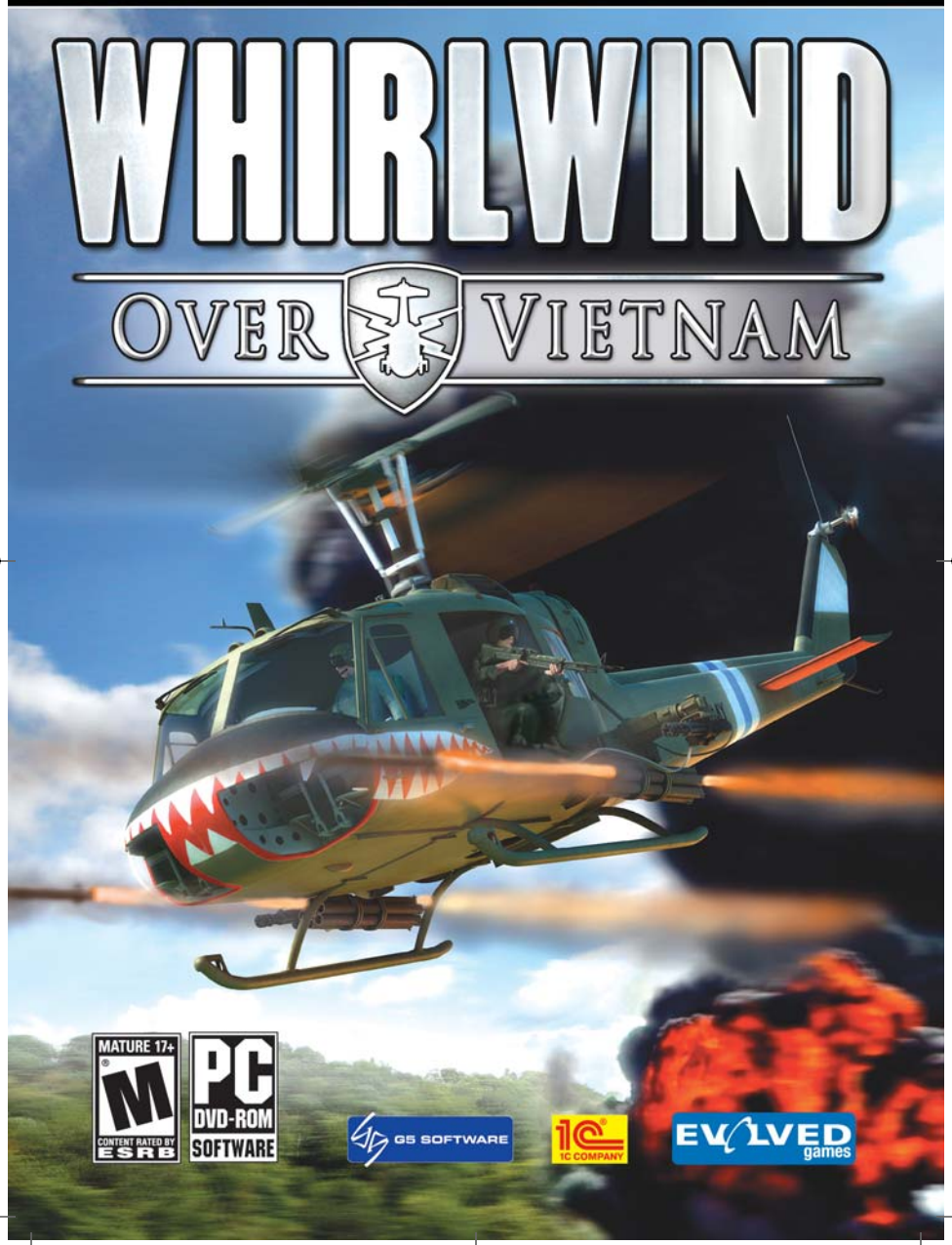
INSTRUCTION MANUAL

WHIRLWIND OVER VIETNAM



Technical Support

If you encounter problems while playing the game before you address the technical support of your publisher make the following:

- Choose "Run" in the "Start" menu.
- Type "dxdiag" in the dialog window and press "Enter" to run Microsoft DirectX Diagnostic Tool.
- Pass all tests.
- Having passed the tests, press "Save All Information".
- Send the obtained text file and description of your problem to the technical support service.

Also please provide the following information:

- Game version (installed updates)
- Operating system
- Processor brand, type and clock speed
- RAM volume
- Sound card type
- Video adapter model and parameters
- CD-ROM drive type
- Mouse type and driver version
- DirectX version
- Detailed description of the problem that you faced.

Evolved Games takes every care to ensure that our product is problem free. If however, you encounter a problem with the software, you may contact our technical support professionals who will make every effort to solve your problem.

For support in the US you can contact technical support at:
EVOLVED GAMES
800 East Broward Boulevard
Suite 700
Fort Lauderdale, FL 33301
954-767-2161
techsupport@evolvedgames.com

HOURS OF OPERATION

Monday through Friday, 12:00 to 8:00 pm Eastern Standard Time; except Holidays.

In the unlikely event that you find a fault with one of our products, please return the title to the retailer where it was purchased for a full product exchange. Please refer to your local retailer for the conditions governing the exchange of purchased products.

HEALTH PRECAUTIONS

Certain people experience epileptic seizures while viewing flashing lights or specific patterns in our daily environment. These persons can also experience epileptic seizures while watching TV or playing computer games. Even gamers, who have never experienced any seizures, may nonetheless have an undetected epileptic condition. Consult your doctor if you, or a member of your family, have an epileptic condition. When you experience any of the following symptoms, stop the game immediately: Dizziness, altered vision, eye or muscle twitching, mental confusion, loss of awareness of your surroundings and/or convulsions.

Content

System Requirements

To run the game 'Whirlwind Over Vietnam: your system should comply with the following system requirements:

Minimum System Requirements:	
Operating System:	Windows XP
CPU:	Pentium IV 2.0 GHz
RAM:	512 MB
Video:	nVidia GeForce 6600 / ATI Radeon 9600 or similar in output, with video memory 128MB
Sound:	DirectX compatible sound card
HDD Free Space:	2 GB
CD-ROM:	8x speed
Extra software:	Microsoft DirectX 9.0c or a later version
Controls:	Keyboard, mouse and joystick

Recommended System Requirements:	
Operating system:	Windows XP
CPU:	Pentium IV 3.2 GHz
RAM:	1,024 MB
Video:	nVidia GeForce 6800GT / ATI Radeon X1600 or similar in output, with video memory 512 MB
Sound:	DirectX compatible sound card
HDD Free Space:	2 GB
CD-ROM:	x32 speed
Extra software:	Microsoft DirectX 9.0c or a later version Keyboard, mouse and joystick

Installing Game

To install the game 'Whirlwind Over Vietnam' you need to insert Disk 1 of the game into CD drive. If the 'Auto insert disk notification' option is on in your system the installation menu will be displayed on your screen. Follow guidelines of the game installation wizard. If 'Auto insert disk notification' is off double click the icon My Computer on Windows Desktop. In the window that will open double click on CD-drive icon and then double click the icon of Setup.exe file. Then follow guidelines of the game installation wizard. During installation game files will be copied to the hard disk drive and on the Start button menu the game's program group will be created. It will contain shortcuts for running and deleting the game and visiting its web resources.

Before you start the game you need to insert the game disc into the CD/DVD drive.

Running Game

To run the game select the shortcut 'Whirlwind Over Vietnam' in the program group 'Evolved Games / Whirlwind Over Vietnam' (unless you specify other name during installation) on the 'Start' button menu.

You can also use command 'start game' on the start menu that appears on the screen when you insert the game's disc into CD/DVD drive (if 'Auto insert disk notification' option is on).

If you selected Create shortcut on Windows Desktop option in the installation wizard during the installation process you can run the game using this shortcut.

After you finish installation of the game insert Disc 1 (marked with title 'Disc 1') into CD-drive and run the game selecting the shortcut 'Whirlwind Over Vietnam' on the program menu of the respective program (Evolved Games / Whirlwind Over Vietnam by default). To start a new game click the 'Campaign' button on the game's main interface. If the <Create icon on Desktop> was selected during installation of the game, you can run the game using shortcut on the Desktop.

Menu

In any submenu the 'Back' button always has a single function of jumping back to previous menu and the 'Apply' button serves for saving settings.

Main Menu

Campaign Menu

In the Campaign menu you can create your own campaign with your game settings or select a previously created campaign for playing. By selecting a campaign and clicking <Load> button the player starts to play next mission.

When a campaign is selected a briefing of the next unperformed sortie of the campaign is loaded. It enables the player to learn about mission tasks and to begin completing them.

If no campaigns are listed or the player wants to play a campaign end-to-end with his own difficulty settings he needs to click <New> button.

When a new campaign is being created a campaign selection window with difficulty settings will be invoked.
When a campaign is being created the player can introduce a campaign marker (his call sign, for instance) or apply current game difficulty settings to his campaign. To make navigation easier the player can quickly select standard settings for low, medium and high difficulty without entering game settings menu. On default current game difficulty settings from menu <Settings> - <Game settings> will be applied.

Settings Menu

From the settings menu you can jump to game difficulty settings, video settings, music and sound settings as well as control settings.

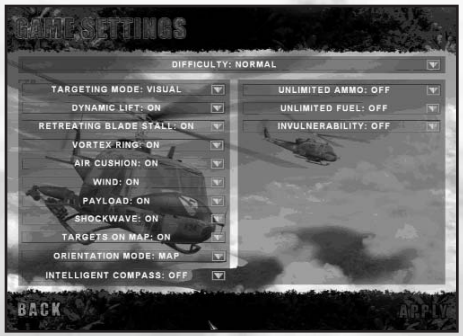
Game Settings

This menu enables you to adjust settings of flight pattern factors such as:

- Dynamic lift
- Blade stall
- Vortex ring
- Air cushion
- Wind
- Payload
- Shockwave

Also you can enable such extra options like show target markers on landscape map, show markers on flight map, first-person compass view.

Besides to make your progress in missions easier you can enable such settings as unlimited ammo reserves, unlimited fuel reserve and invulnerability.



Video Settings

The video settings menu enables you to adjust imaging settings such as:

- Game resolution and screen update rate
- Terrain detail
- Forest detail
- Textures detail
- Grass detail
- Water detail
- Shadow detail
- Render detail

Also this menu serves for setting use of low quality textures in low output systems, enabling or disabling window mode.

Sound and Music Settings

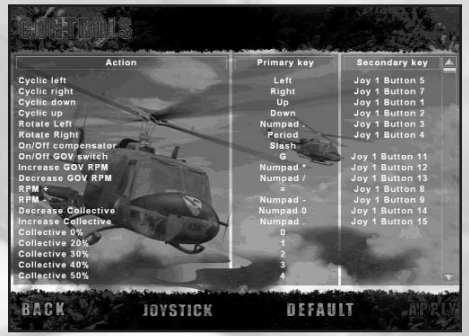
This menu enables you to adjust sound and music volume and to control in-built sound track player.

Specify location of sound tracks for the in-built player as a folder with .wma files on the local disk. During the game by managing the in-built player you will navigate between tracks selected in this menu.

Control Settings

This menu enables you to set your own keyboard layouts taking into consideration usage possibilities for a pair of controls. Also from this menu you can jump to joystick, axes, actions and sensitivity settings menus.

Use mouse to select action and control type (primary/additional). After doing so click the button required to set a new control.



Joystick Settings

This menu enables you to adjust settings for action joystick axes and to set response areas, sensitivity and dead zones for each axis. Also you can set inversion separately for each axis used.

If the joystick is equipped with a feedback system you can set feedback sensitivity, enable or disable this function.

To adjust settings for axes use mouse to select action. Then move joystick controls to set a new axis.

If several joysticks are available in your system you can choose a device to de used for connection or setting.

Game Screen

First-Person View

To switch this view press Ctrl-F1 key in default settings to enable this view. Selection of position in the helicopter crew is done by pressing <C> key.

Pilot

From the pilot's seat you can control the helicopter's flight and suspended weapon systems.
The main devices displayed on your screen enable you to control the following flight parameters:

- Barometric altitude
- Climbing speed
- Thrust
- Horizontal speed
- Fuel volume
- Gyro horizon

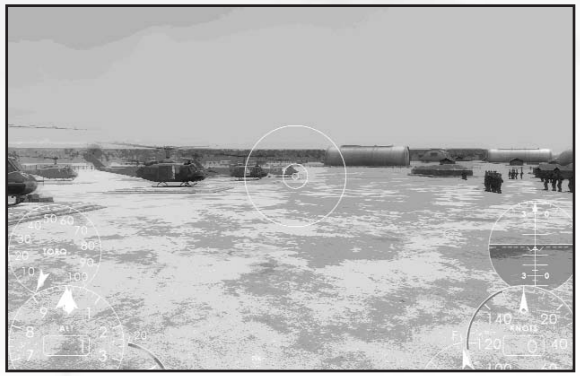
In the middle of the screen the eye-sight from the pilot's seat is displayed. When you press <M> button the flight map or the helicopter diagram enable you to control status of components and systems displayed. Damaged parts are marked in yellow and destroyed parts are highlighted in red.

Co-pilot

From the co-pilot's seat you can control the helicopter's flight and suspended weapon systems.
The main devices displayed on your screen enable you to control the following flight parameters:

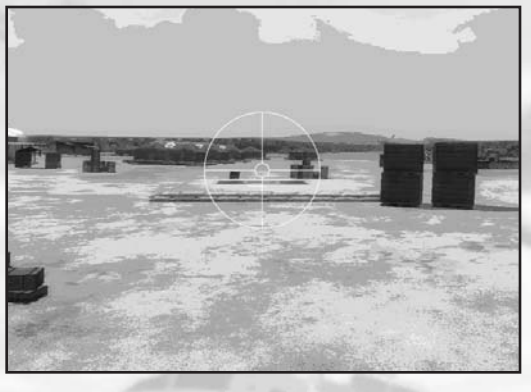
- Barometric altitude
- Climbing speed
- Thrust
- Horizontal speed
- Fuel volume
- Gyro horizon

In the middle of the screen the co-pilot's eye-sight is displayed. It can be controlled by pressing keys <O>, <K>, <L>, <;> or HAT joystick (if adjusted).
Similar to pilot's mode pressing <M> button the flight map or the helicopter diagram enable you to control status of components and systems displayed. Damaged parts are marked in yellow and destroyed parts are highlighted in red.



Gunner

It is impossible to control the helicopter's flight or suspended weapon systems from the gunner's seat.



When you select the gunner's position the autopilot switches on automatically. This mode enables the player to control firing direction from the gunner's position.

Cockpit View

To enable this view press F1 key in default settings mode. Selection of position on the helicopter crew is done by pressing the <C> key.

Pilot

From the pilot's seat you can control the helicopter's flight and suspended weapon systems.

Readings of the instrument panel devices enable you to control the following flight parameters:

- Barometric altitude
- Echo height
- Engine RPM
- Horizontal speed
- Climbing speed
- Gyro horizon

Also in the cockpit view the player can control systems using a virtual finger. If you press <Tab> button down in the default layout mode a pointer will appear. It will take shape of a hand if placed on controls. This means that clicking will change status of a device or a system that depends on this control device. The central console contains a lamp box that signals failures in certain systems of the helicopter.

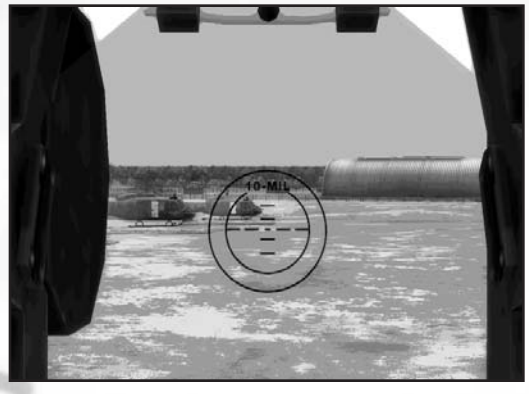
View control is done by moving Mouse manipulator or by view control buttons on keypad or HAT joystick.

Use the central console to:

- Switch the main power supply on/off
- Turn replay of radio messages on/off
- Switch to free-flight rockets launch mode and back

In the pilot's mode you can also use <R> button to drop eye-sight, which serves to aim and deliver fire from weapon systems on outer suspensions.

Also the precise aiming mode is available when view is focused through the eye-sight. This mode is enabled by pressing the key combination <Shift+F1>. In this mode you cannot control view.



Co-pilot

From the pilot's seat you can control the helicopter's flight and suspended weapon systems.

Readings of the instrument panel devices enable you to control the following flight parameters:

- Barometric altitude
- Horizontal speed
- Climbing speed
- Gyro horizon

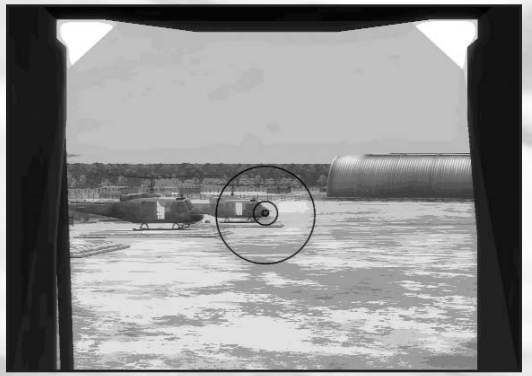
View control is done similar to the pilot's mode by moving Mouse manipulator or by view control buttons on keypad or HAT joystick.

From the co-pilot's seat the same operations with the central console are available as from the pilot's seat.

In the co-pilot's mode you can also use <R> button to drop eye-sight, which serves to aim and deliver fire from weapon systems on outer suspensions.

Note that guidance of free-flight rockets depends on the helicopter course. You can control firing directions for mounted machine-guns in limited angle range using <O>, <K>, <L> and <;> keys.

Also the precise aiming when your sight is focused through the eye-sight is available. This mode is enabled by the key combination <Shift+F1>. In this mode you cannot control view. It is possible to control direction of the eye-sight jointly with machine guns.



Gunner

In the gunner's mode you cannot control the helicopter flight.

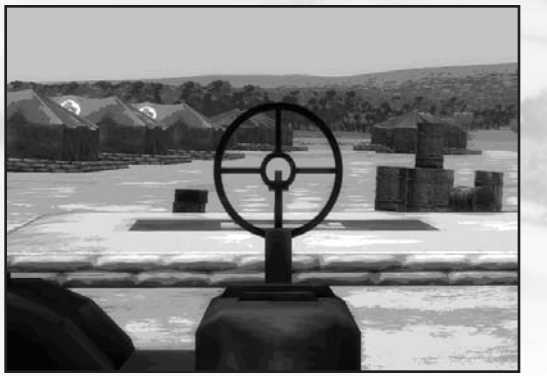
If you switch into the gunner's position the autopilot takes control automatically. Guided by the mission's key objectives the autopilot controls en-route flight.

Controlling view is carried out by Mouse manipulator and is combined with aiming that's why in view mode sight moves together with the machine-gun. Look-up and guidance angles are limited to avoid a possibility of damaging your own helicopter.

Firing is controlled by the left button of Mouse manipulator.

Also precise aiming mode may be available.

This mode enables you to jointly control view and aiming using Mouse manipulator or the keyboard.



External Camera View

To enable this view press F2 key in default settings mode. Selecting position in the helicopter crew is done by pressing the <C> key.

In this mode you can control the helicopter and weapons without precise control of devices' reading.

The camera moves around the helicopter. It is controlled by Mouse manipulator or by the keyboard. Moving the camera to and from the helicopter is done by the Mouse Wheel.

Control

Take-off and Thrust Control

To start-up engine in default settings mode you need to press the key <I>. After the start-up the engine will set at the lowest RPM speed value. Use <+> / <-> keys to increase or decrease the desired revolution per minute value. The key <*> serves to set the highest possible shaft speed value. If you reach a certain revolutions speed the GOV system switches on that depending on the load keeps revolutions in 'green zone' of the velocity gage

On default the collective pitch is controlled by the slider axis of the set joystick. After the pilot gains warmup speed he can gradually increase collective pitch to control thrust until the GOV system switches on (the alarm lamp signaling low revolution speed goes off).

To take-off and gain height you need to gradually increase height.

Helicopter Flight Control

The direction of flight is controlled by inclining thrust vector forward/backwards and leftward/rightward. Inclinations of aircraft control handle in joystick default control settings correspond to this operation. Additionally, keyboard pointer control arrows may be used.
When the helicopter is gaining horizontal speed turning the control handle leftward/rightward enables you to control helicopter's roll and its turns. You can also control turning of the helicopter by joystick Rudder Control. Note that at horizontal speed the (approach flow) tends to straighten the helicopter out.

To make helicopter's control easier you can use automatic altitude hold mode that automatically keeps barometric altitude during the flight. Press "Q" button to enable this mode. This system functions properly only as part of the flight model. I.e. if you select pitch or bank angles beyond the set limits it will cause a stall of the helicopter as it will start lacking power characteristics to hold altitude.

Navigation Control

Navigation is controlled by means of radio beacons on the landscape. On the instrument panel there is an analog navigation device.

One of its arrows always points at the radio beacon of the base, from which the helicopter operates. The other arrow points at the selected radio beacon used in the mission. Selecting the radio beacon is done in default layout by pressing <N> key.

Also pressing the key <M> you can invoke the flight map to confirm approach and retire routes and your location or to orient yourself on the terrain.

Weapon Control

The armament of the helicopter consists of a pair of seven-tube HAP rocket launchers and two six-barrel quick firing bow machine-guns.

The rocket containers and the machine guns are installed symmetrically from both sides of the helicopter main body and may be control from pilot's and co-pilot's seats.

The pilot can control rocket weapon and machine-guns. He can assign the order for launching HAP from rocket-tubes. HAPs are launched in pairs depending on the pilot's choice:

- one pair at a time
- by a series of 3 consecutive launches

When the pilot controls bow machine guns he can deliver burst fire only along the course of helicopter.

Controlling the bow machine the co-pilot may change direction of fire leftward/rightward, upwards/downward relative to the helicopter's axis. Using default control keys <O>, <K>, <L> and <;> you can control the bow machine guns from the co-pilot's seat.

Gunners are armed with a machine-gun mounted on the turret. The firing direction is controlled by Mouse manipulator or control keys <O>, <K>, <L> and <;>.

Landing

To land you need to decrease the horizontal speed down to the minimum controlling the thrust vector and by gradual reducing of the collective pitch to take the helicopter close to the ground or landing area. Once the touchdown occurs you need to fully switch off collective pitch and reduce the number of shaft revolutions.

Radio Talks Control

Sound corresponding to radio talks is simultaneously played on the earphones and the speakers. Also text captions are displayed in top/left part of the screen. The key <T> bans or allows display of text captions.

You can enable or disable playback of voice messages by earphones or speakers. In the cockpit mode select radio switch on the central console keeping the button <Tab> pressed down.

Controlling Sound Track Player

You can switch the player on or off using <S> key on the default layout. In this case the game will refer to the folder on the local disc which stores sound tracks and will start playing the first track. To select next track press <F>, to play previous track press <D>.

To increase volume use the key <W>, to lower volume down press <Y>.

All operations with the sound track player are duplicated in the status bar in the top/left part of the screen.

Controlling Game Time

During the game you can speed the game time up or slow it down using keys <]> and <[> respectively. To quickly restore normal lapse of time use the button <'>.

The game is paused by pressing the key <Pause>

Piloting Features

Vortex ring. The vortex ring effect is induced in case of a drastic loss of altitude due to a reduction in rotor's revolution speed or lowering the collective pitch. In that case a relation between rate of descent and downwash airflow speed emerges. Downwash airflow whirls up and gets caught up with the main rotor blades again. This results in a sharp reduction of lift and the helicopter settles down into the newly created 'funnel'.

To escape the 'funnel' it is not enough to simply increase rotation speed and collective pitch of the main rotor. By active maneuvers you need to gain airspeed in a certain direction leveling your aircraft out at the same time.

Air cushion. The air cushion effect is produced when a helicopter is in the close proximity to the ground. Air thrown down by the rotor blades causes a local air pressure build-up below rotor disk's increasing the helicopter's lift force.

Dynamic lift. When a helicopter is gaining horizontal speed approach flow produces aerodynamic lift on fuselage surfaces as in case of an airplane. Moreover, this approach flow impacts downwash air on the main rotor, which also contributes to a higher lift while rotation speed and collective pitch are the same.

Blade stall. A helicopter has a limitation on its maximum horizontal flight speed. Such limitation is not caused by its power limit but by the main rotor's aerodynamics. Increase of the horizontal speed finally ends in a situation when downwash air speed gets equal to approach air speed. Accordingly the main rotor stops to perform effective work and the stall is produced at first on rotating blades. At the same time the rotor loses its carrying function although lift can still be retain due to airflow along surfaces of the fuselage. The helicopter's lateral control becomes more difficult and it starts to lose altitude.

To prevent undesired effect you need to lower airspeed at the same time leveling the aircraft out in order to avoid getting into a vortex ring.

Helpful Tips

Take-off is done as follows: start up the engines, wait till the main rotor rotates quickly enough to lift-off. Smoothly increase RPM enhancing collective pitch at the same time. If you increase collective pitch too sharply then at the moment when blades will start to generate lift power, rotor will slow down and the helicopter will go some meters down. As by that time the helicopter is likely to gain some altitude such fall may have the most severe consequences.

During take-off helicopters are subject to a slight rotation in the main rotor rotation direction. If RPM is high it should be compensated by tail rotor rudder pedals. If RPM is slow it will stop by itself as soon as the tail rotor synchronizes with the main rotor. It is essential to avoid jerking the control handle or the rudder pedals during take-off.

Helicopters have no problems with forward flight. They quickly gain speed and have low drag and accordingly can be maneuvered both by tail rotor and by rolling the main rotor. A helicopter has a limitation on its flight speed. It has nothing to do with the fuselage's aerodynamics but is caused by features of the main rotor blades operation. If the helicopter exceeds a certain flight speed limit the downwash airflow speed gets equal to the speed of approach flow. This results in the so-called blade slap effect. The lift force lowers and the helicopter starts to respond to roll control with a big delay. If no measures to reduce speed are taken the helicopter will start to lose height and will hit the surface at a high speed.

During landing we need to smoothly throttle down, pull the control handle backwards killing horizontal speed. When horizontal speed falls down, start to reduce vertical speed adding up thrust. Then start to gradually reduce thrust to gain touchdown and switch the engine off. A sharp reduction of RPM may lead to a situation when the main rotor will mechanically develop thrust cutting it off at a certain point causing the helicopter to go down. This may create a danger of passing into a vortex ring when the downwash air flow whirls up and gets caught back by the main rotor. The lift force drops and the helicopter sinks down into the newly created 'funnel'. In this case increasing collective pitch will only aggravate situation as it will speed up rotation in the vortex ring. This condition can be corrected by trying to gain horizontal speed as it will lead to an aerodynamic lift breaking the vortex ring.

Don't forget to check fuel left aboard. It is quite possible for a fully serviceable helicopter with complete ammo stock to suddenly fall down due to lack of fuel.

Credits

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