

## How to Use the Helicopter Game

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This is an instruction guide to the player on how to use the game in details including all commands needed to be performed and other features have been implemented in the game.

### **How to use the game:**

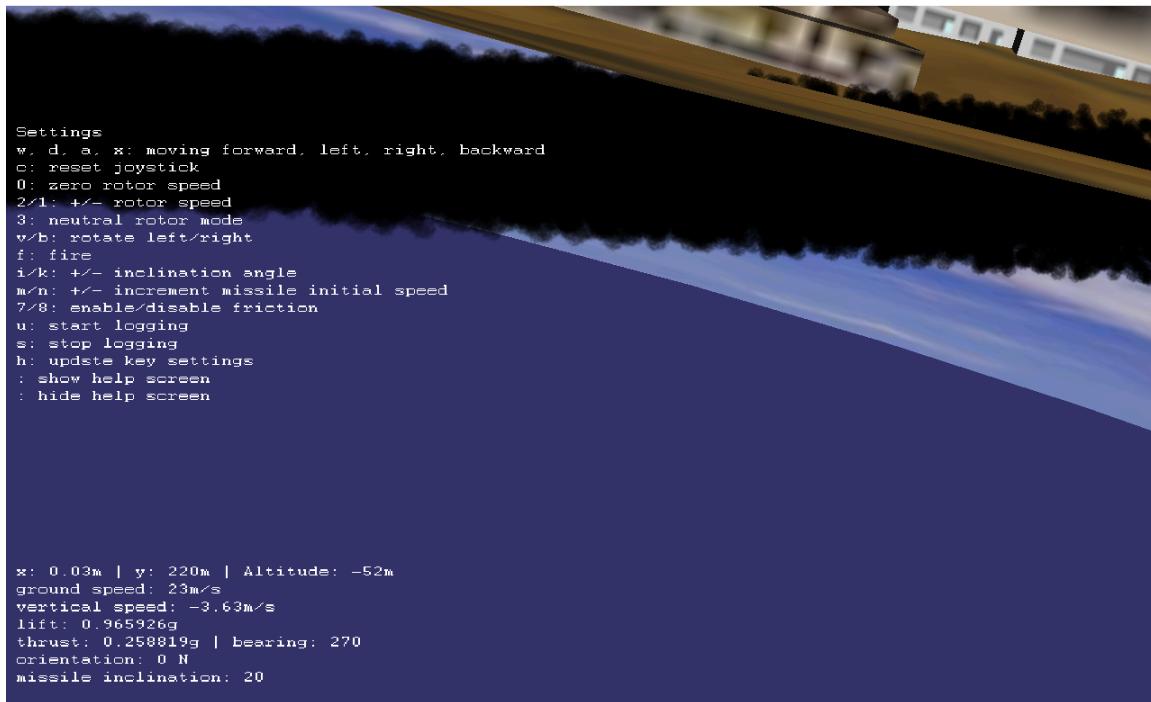
Once the player run the game, the game will display to the user a helicopter, landscape, and some obstacles models such as some higher buildings and Eiffel tower. Also, before the player plays the game, a hud display will be shown on the left side of the screen. The upper screen display, will show to the user the settings including the mouse control the joystick, reset the joystick, increase/decrease the rotor speed, neutral rotor mode, rotates left/right, firing, increase/decrease inclination angle, increase/decrease the missile initial speed, enable/disable the friction, start/stop logging, update key settings, and show/hide help screen. The lower display will show the current position of the helicopter on x, y, z, ground speed, vertical speed, lift on gram, thrust, bearing, orientation N W E S, missile inclination, and the missile initial speed.



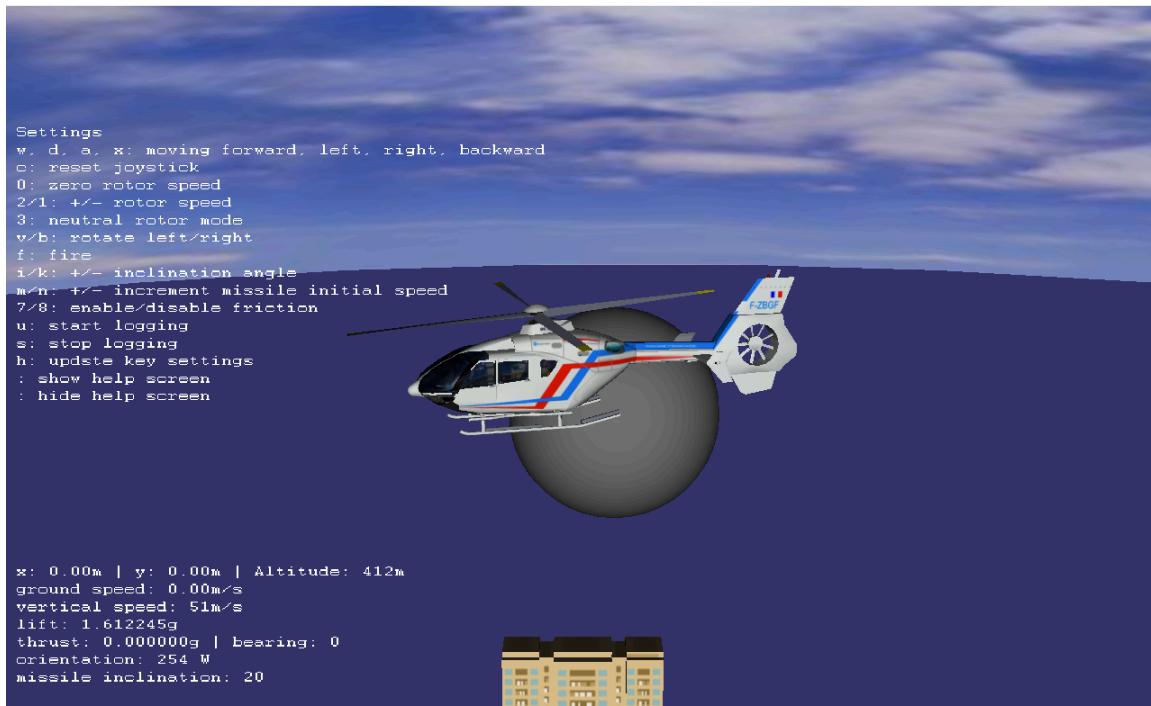
The player has two options to play the game either on the mouse or by using the keyboard. This feature can be done by adjusting the setting.txt file to “true” to use the mouse movement, “false” to use the keyboard movement to rotate the helicopter forward, left, right, backward. The upper hud display will guide the user on how to use the keyboard panel by selection some instructions, for example: “w” moving forward, “d” move to right, “a” move to left, “x” move backward. All these instructions have been displayed to the player on the upper screen of the hud. The upper pop window can be either hide it by pressing “h” or display it by “s”. Firing missiles can be done by pressing “f”, and once it hits an obstacle, the fire missile will become bigger in size.



Also, pressing “v” to rotate the camera with the helicopter to left and “b” to rotate the camera to right with the helicopter. If the player leaves the helicopter to go down below the landscape at vertical speed more than 1.1 m/s, it will explode and display to the player some type of explosion in as smoke.



The player also can activate the friction and deactivate the friction by pressing “7” enable friction, “8” disable friction. If the user press “u” it will update the upper hud window. The player has the ability to increase and decrease the missile speed by pressing “m” to increase the speed of the missile, or “n” to decrease the missile speed. Also, if the user wants a fuel missile, the only thing he needs to set “false”, if he needs to use the initial velocity set it to “true” from the settings.txt file that comes with the project. In addition, the player can also increase and decrease the inclination of the missile by pressing “ i” to increase the inclination angle, and “k” to decrease the inclination angle of the missile. One more thing that the player can use the keyboard playing game, if he presses “c” he the joystick will be reset. If the player press “0” he will reduce the rotor speed to zero, if he press “1” he can decrease the rotor speed, if press “2” he can increase the rotor speed. The player also has the ability to manage the camera view of the helicopter if he wants to just rotate the helicopter without the full scene, then he needs to set auto camera to “false”.



Until this point, the player can play the game either with a mouse movement or by using the keyboard. Now, the player can run the game with some more features on it includes testing, scripting, and help. This can be done by modifying the argument command. If the player want to run a script that will make the helicopter run by itself to amount of altitude and goes down to zero then explode, he just need to write an argument “—script script.txt”. If the user want a real time test , he just modify the argument to “—test r” for a real time test, and “—test s” for a simulation test.