

## FlightGear Short Reference

**FlightGear** is a free flight simulator developed collectively over the Internet under the GPL.

**Main Web site:** <http://www.flightgear.org/>

**Program Start:** Linux/UNIX via the script `runfgfs` under `/FlightGear`,  
Windows via the Batch file `runfgfs.bat` under `/FlightGear`

**Engine Start:** Put ignition switch to "BOTH". Set mixture to 100 %. Set throttle to about 25 %.  
Operate starter using the SPACE key. Set throttle back to idle after starting the engine. Release parking brake, if applied.

### Keyboard controls:

Tab. 1: Main keyboard controls on the numeric keypad with activated NumLock. [U.S. keyboard uses "." instead of ","]

| Key      | Action                         |
|----------|--------------------------------|
| 9/3      | Throttle                       |
| 4/6      | Aileron                        |
| 8/2      | Elevator                       |
| 0/.<br>5 | Rudder                         |
| 5        | Center aileron/elevator/rudder |
| 7/1      | Elevator trim                  |

Tab. 2: View directions accessible after de-activating NumLock on the numeric keypad.

| Numeric Key | View direction |
|-------------|----------------|
| Shift-8     | Forward        |
| Shift-7     | Left/forward   |
| Shift-4     | Left           |
| Shift-1     | Left/back      |
| Shift-2     | Back           |
| Shift-3     | Right/back     |
| Shift-6     | Right          |
| Shift-9     | Right/forward  |

Tab. 3: Display options.

| Key         | Action  |
|-------------|---|
| P           | Toggle instrument panel on/off                      |
| c           | Toggle 3D/2D cockpit (if both are available)        |
| s           | Cycle panel style full/mini                         |
| Shift-F5/F6 | Shift the panel in y direction                      |
| Shift-F7/F8 | Shift the panel in x direction                      |
| Shift-F3    | Read a panel from a property list                   |
| i/I         | Minimize/maximize HUD                               |
| h/H         | Change color of HUD/toggle HUD off forward/backward |
| x/X         | Zoom in/out   |
| v/V         | Cycle view modes forth and back                     |
| Ctrl-c      | Set view modes to pilot's view                      |
| W           | Toggle full screen mode on/off (3dfx only)          |
| z/Z         | Change visibility (fog) forward/backward            |
| F8          | Toggle fog on/off                                   |
| F2          | Refresh Scenery tile cache                          |
| F4          | Force Lighting update                               |
| F9          | Toggle texturing on/off                             |
| F10         | Toggle menu on/off                                  |

Tab. 4: Autopilot and related controls.

| Key      | Action  |
|----------|---|
| Ctrl + A | Altitude hold toggle on/off                       |
| Ctrl + G | Follow glide slope 1 toggle on/off                |
| Ctrl + H | Heading hold toggle on/off                        |
| Ctrl + N | Follow NAV 1 radial toggle on/off                 |
| Ctrl + S | Autothrottle toggle on/off                        |
| Ctrl + T | Terrain follow toggle on/off                      |
| Ctrl + U | Add 1000 ft. to your altitude (emergency)         |
| Enter    | Increase autopilot heading                        |
| F6       | Toggle autopilot target: current heading/waypoint |
| F11      | Autopilot altitude dialog                         |
| F12      | Autopilot heading dialog                          |

Tab. 5: Special action of keys, if autopilot is enabled.

| Key   | Action              |
|-------|---------------------|
| 8 / 2 | Altitude adjust     |
| 0 / , | Heading adjust      |
| 9 / 3 | Autothrottle adjust |

Tab. 6: Engine control keys

| Key   | Action                              |
|-------|-------------------------------------|
| SPACE | Fire starter on selected engine(s)  |
| !     | Select 1st engine                   |
| @     | Select 2nd engine                   |
| #     | Select 3rd engine                   |
| \$    | Select 4th engine                   |
| {     | Decrease Magneto on Selected Engine |
| }     | Increase Magneto on Selected Engine |
| ~     | Select all Engines                  |

Tab. 7: Miscellaneous keyboard controls.

| Key       | Action   |
|-----------|--|
| B         | Toggle parking brake on/off                                  |
| b         | Apply/release all brakes                                     |
| g/G       | Toggle landing gear up/down                                  |
| ,         | Left gear brake (useful for differential braking)            |
| .         | Right gear brake (useful for differential braking)           |
| l         | Toggle tail-wheel lock                                       |
| ]/[       | Extend/Retract flaps   |
| p         | Toggle pause on/off  |
| a/A       | Speed up/slow down (time acceleration)                       |
| t/T       | Time speed up/slow down                                      |
| m/M       | Change time offset (warp) used by t/T forward/backward       |
| Shift-F2  | Save current flight to <code>fgfs.sav</code>                 |
| Shift-F1  | Restore flight from <code>fgfs.sav</code>                    |
| F3        | Save screen shot under <code>fgfs-screen.ppm</code>          |
| Shift-F4  | Re-read global preferences from <code>preferences.xml</code> |
| Shift-F10 | Toggle data logging of FDM on/off                            |
| ESC       | Exit program   |

**Mouse controlled functions:** There are three mouse modi. In the usual mode (pointer cursor) panel's controls can be operated with the mouse. To change a control, click with the left/middle mouse button on the corresponding knob/lever. While the left mouse button leads to small increments/decrements, the middle one makes greater ones. Clicking on the left hand side of the knob/lever decreases the value, while clicking on the right hand side increases it. Right clicking the mouse activates the simulator control mode (cross hair cursor). This allows control of aileron/elevator via the mouse in absence of a joystick (enable `--enable-auto-coordination` in this case). Right clicking the mouse another time activates the view control mode (arrow cursor). This allows changing direction of view via the mouse. Right clicking the mouse once more resets it into the initial state.