

## FlightGear Short Reference

*FlightGear* is a free flight simulator developed collectively over the Internet under the GPL. For more information see <http://www.flightgear.org/>

**Program Start:** Linux/UNIX via fgfs under FlightGear/

Mac OS X via FlightGear.app under /Applications/

Windows via the *FlightGear* wizard fgrun.exe under \Program Files\FlightGear\bin\Win32\

**Engine Start:** Set ignition switch to BOTH (“}” three times). Set mixture to 100%. Set throttle to about 25%. Operate starter using the “s” key. Once the engine has started, set throttle back to idle. Release parking brake (“B”), if applied.

### Keyboard controls:

Table 1: *Directional controls (activated NumLock)*

Key	Action
9 / 3	Throttle
4 / 6	Aileron
8 / 2	Elevator
0 / Enter	Rudder
5	Center aileron/elevator/rudder
7 / 1	Elevator trim

Table 2: *Engine controls*

Key	Action
!	Select 1st engine
@	Select 2nd engine
#	Select 3rd engine
\$	Select 4th engine
~	Select all engines
{	Decrease magneto on selected engine
}	Increase magneto on selected engine
s	Fire starter on selected engine(s)
M / m	Lean/Enrich selected engine mixture
N / n	Decrease/Increase selected propeller RPM

Table 3: *Miscellaneous aircraft controls*

Key	Action
b	Apply all brakes
, / .	Apply left/right brake (useful for differential braking)
l	Toggle tail-wheel lock
B	Toggle parking brake
g/G	Raise/lower landing gear
Space	Push To Talk (PTT)
- / _	MP text chat menu/entry
[ / ]	Retract/extend flaps
j / k	Retract/extend spoilers
Ctrl-B	Toggle speed brakes

Table 4: *General simulator controls*

Key	Action
p	Pause simulator
a / A	Simulation speed up/slow down
t / T	Clock speed up/slow down
Ctrl-R	Instant replay
F3	Save screen shot
ESC	Exit program

Table 5: *View controls (de-activated NumLock)*

Numpad 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

Table 6: *Autopilot controls*

Key	Action
Backspace	Toggle autopilot
Ctrl-A	Toggle altitude lock
Ctrl-G	Toggle glide slope lock (NAV 1)
Ctrl-H	Toggle heading hold
Ctrl-N	Toggle NAV 1 lock
Ctrl-S	Toggle autothrottle
Ctrl-T	Toggle terrain follow (AGL) lock
Ctrl-U	Add 1000 ft. to your altitude (emergency)
F6	Toggle autopilot heading mode
F11	Autopilot altitude dialog
8 / 2	Altitude adjust
4 / 6	Heading adjust
9 / 3	Autothrottle adjust

Table 7: *Display controls*

Key	Action
P	Toggle instrument panel on/off
c	Toggle 3D/2D cockpit (if both are available)
S	Cycle panel style full/mini
Ctrl-C	Toggle panel/cockpit hotspot visibility
h	Toggle HUD
H	Change HUD brightness
i / I	Minimize/maximize HUD
x / X	Zoom in/out
v / V	Cycle view modes forth and back
Ctrl-V	Reset view modes to pilot view
z / Z	Increase/Decrease visibility (fog)
F10	Toggle menu on/off
Shift-F10	Toggle fullscreen mode on/off

**Mouse controlled functions:** There are three mouse modes, which can be swapped between by using the Tab key on your keyboard.

1. In **normal** mode (pointer cursor), the panel and cockpit controls can be operated using the mouse. To change a control, click with the left/middle mouse button on the corresponding knob/lever. Generally, the left side of the control decreases the setting, while the right side increases the setting. The left mouse button makes small changes while the middle button makes larger ones. Some controls can also be manipulated by holding down the left mouse button and dragging them, or by using the mouse scrollwheel. You can change the view direction by holding down the right mouse button and moving your mouse. Press Ctrl-c to view panel/cockpit hotspots.
2. In **control** mode (cross hair cursor), the mouse is used to directly control the aircraft in the absence of a joystick. Moving the mouse controls the aileron (left/right) and elevator (forwards/backwards). Holding the left mouse button down allows control of the rudder (left/right), while holding the middle mouse button controls throttle (forwards/backwards). The scrollwheel controls elevator trim. Using auto-coordination (`--enable-auto-coordination`) is recommended. You can change the view direction by holding down the right mouse button and moving your mouse.
3. In **view** mode (arrow cursor), you can control the view direction using the mouse. Clicking the left mouse button resets the view direction. Holding the middle button down while moving the mouse shifts the viewpoint. The scrollwheel may be used to control the field of view.