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# Glass Simming Garmin 1000®

*by Bill Stack*

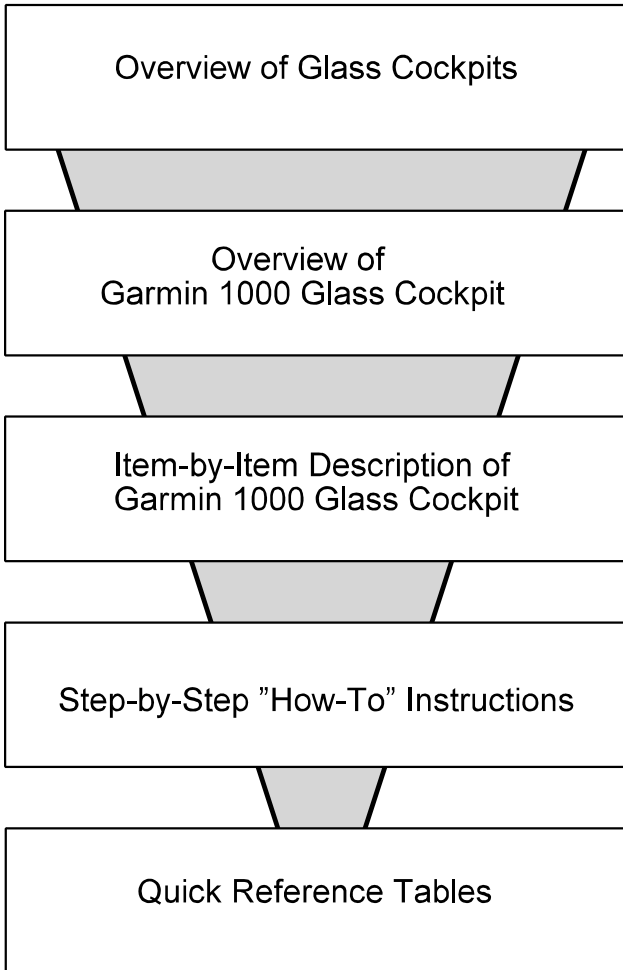
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## Chapter 1

# The Essence of Glass Cockpits

*Glass cockpits* are aircraft cockpits that feature electronic instrument displays. Their computer-controlled displays can be adjusted by pilots to display various information. They are highly regarded by pilots as being modern and easier to use than traditional mechanical cockpits.

Glass cockpits show almost all the information shown on traditional mechanical cockpits, albeit in different formats and locations. The only omission is the automatic direction finder (ADF) that is no longer deemed necessary for instrument flight. This instrument is often omitted from other modern aircraft that still use mechanical instruments. Oddly enough, the Garmin 1000 omits the ADF but provides lists of nondirectional beacons (NDB). Presumably, NDBs are listed for use as waypoints in flight plans, not for radio navigation.



## Chapter 2

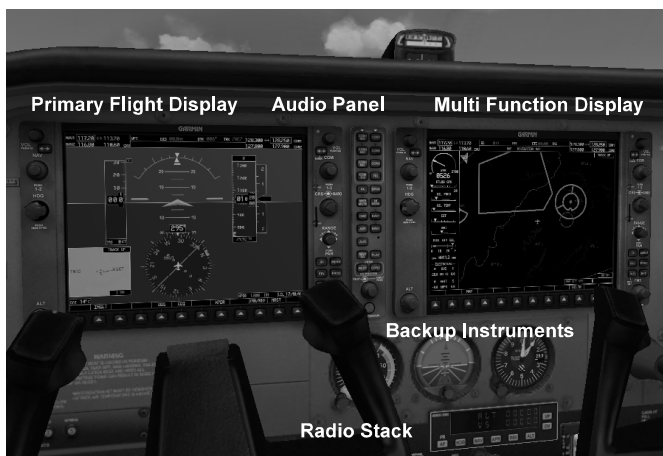
# Exploring the Garmin 1000 Glass Cockpit

The Garmin 1000 glass cockpit is a new feature in version 10 of Microsoft Flight Simulator®, commonly called “Flight Simulator X®” and “FSX.” It is available in the Cessna Skyhawk SP 172, the Mooney Bravo, and the Beechcraft Baron 58. Because it is mostly the same in all three of these aircraft, only one explanation is needed.

This chapter explains the basic working of the Garmin 1000 glass cockpit. Subsequent chapters explain the Garmin 1000 glass cockpit in detail.

## Garmin 1000 Layout

In FSX, the Garmin 1000 contains a primary flight display (PFD) in front of the pilot, a multifunction display (MFD) in front of the right seat, and an audio panel between the two. The engine indication system (EIS) and the flight management system (FMS) are part of the MFD.



**Figure 2-A:** Garmin 1000 Glass Cockpit

The Garmin 1000 consumes so much monitor space that other controls normally visible on the simulator panel such as light switches and throttles are displayed in other panels.

Using a glass cockpit in a home flight simulator is almost as easy as using one in a real aircraft. In real aircraft, pilots read screens, push buttons, and turn dials. In a home flight simulator, simulation pilots use the computer's mouse clicks to push simulated buttons and turn simulated dials. This chapter explains how to read the screens and manipulate the controls of typical glass cockpits in home flight simulators.



## Chapter 3

# The Garmin 1000 Primary Flight Display

The primary flight display (PFD) in the Garmin 1000 glass cockpit displays several types of instruments and controls. Here you will find basic flight instruments, the basic navigation instruments, radio frequencies, and controls for these instruments.

As an overview, this device is described in three phases.

- ! Controls to the left, right, and below the screen are described from top to bottom. These are physical buttons in real aircraft and mouse-clickable buttons in flight simulators.
- ! Information displayed in the screen is explained.
- ! Each function is explained later in the appropriate place in this book.

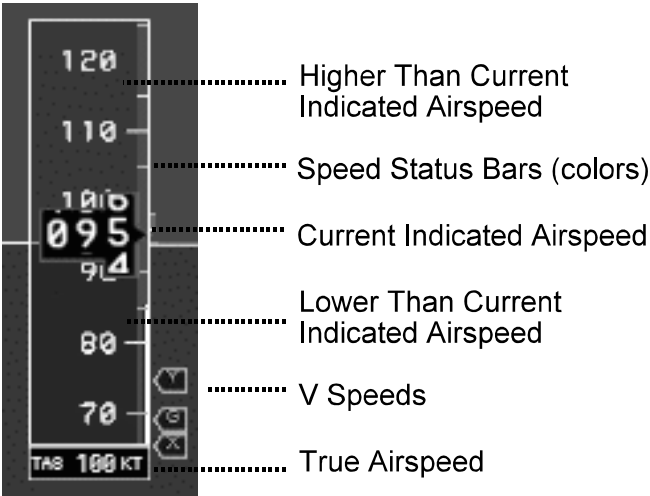
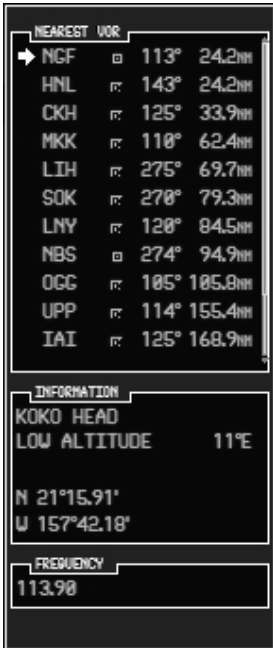


Figure 3-1: Airspeed Indicator



Use the VOR waypoints page to determine distance to nearby VORs, including those currently tuned on your navigation radios.

---

**Figure 6-L:** Waypoints Page for Nearby VORs

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V SPEEDS			
By General Velocity			
Name	Abbreviation	Type	Description
Best Climb	V <sub>Y</sub>	Minimum	Maximum average rate of climb for a given weight and configuration
Best Rate of Climb	V <sub>X</sub>	Minimum	Maximum rate of climb at a given weight and configuration

V SPEEDS			
Alphabetical by Abbreviation			
Abbreviation	Name	Type	Explanation
V <sub>1</sub>	Designated Takeoff Speed	Minimum	Speed at which the pilot must be able to safely abort a takeoff
V <sub>2</sub>	Lift-off Speed	Minimum	Speed at which the aircraft becomes airborne
V <sub>25</sub>	Designated Landing Speed	Maximum	Maximum speed at which the aircraft can be safely landed
V <sub>28</sub>	Designated Landing Gear Extension Speed	Maximum	Maximum speed at which the landing gear can be safely extended
V <sub>29</sub>	Designated Landing Gear Retraction Speed	Maximum	Maximum speed at which the landing gear can be safely retracted
V <sub>30</sub>	Designated Maximum Ramp Speed	Maximum	Maximum speed at which the aircraft can be safely taxi
V <sub>35</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a runway
V <sub>40</sub>	Designated Maximum Gate Speed	Maximum	Maximum speed at which the aircraft can be safely taxi at an airport
V <sub>45</sub>	Designated Maximum Ramp Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a ramp
V <sub>50</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>55</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>60</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>65</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>70</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>75</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>80</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>85</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>90</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>95</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway
V <sub>100</sub>	Designated Maximum Taxi Speed	Maximum	Maximum speed at which the aircraft can be safely taxi on a taxiway

## Get a Free V-Speed Card

V-speeds are a series of velocities designated by aviation authorities. Some are minimums, some are maximums, and some are optimums.

For example, "Vne" means the designated velocity should never be exceeded (it differs for each aircraft).

Your V-speed card lists the most common general-aviation V-speeds in two easy-to-find ways – alphabetically on one side and by velocity on the other side. Each V-speed is identified by name and abbreviation and explained in clear language. These cards are a handy size for using at your flight simulator.

You will get a V-speed card free with every order of flight-sim books from TopSkills! This is author Bill Stack's way of saying "Thank You."

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