

THE G1000 PC TRAINER

It's an excellent systems trainer that will save you a lot of time and money when you step into the airplane. Here on some hints on its operation.

by Fred Simonds

I am one of the many who came of aviation age in the era of round dials. Without getting into ugly numbers, that goes back to Mode A transponders, 90-channel tube radios and check rides that cost \$60 – checks accepted.

My first exposure to the G1000 was in 2008, when I was hired at a flight school that happened to have many so-equipped Cessnas. It was time to learn the thing.

First came a DVD course. It proved a good way to break the ice, tone down the intimidation factor and let me learn at my own pace. But I itched to do more than canned exercises, and soon I discovered the G1000 PC Trainer.

The Garmin trainer helps someone learn the G1000 for VFR and IFR operations.

It's Not a Simulator

It's carefully not called a simulator because it's not an airplane simulator. For example, when you make a climb with the PC Trainer, the airspeed does not budge.

Flight simulation is not its reason for existence.

The idea is to learn the G1000 itself. The PC Trainer presents the G1000 knobs, buttons and displays just as if you were using the real thing, a near-perfect replication of a G1000. What you learn in the PC Trainer for almost no money carries directly into the airplane, but you cannot log any time you spend with it.

Look Outside in the Real World

There is no visual display of clouds, runways or terrain. This does, in my observation, lead to the unfortunate tendency to stare at the display once you get airborne in the airplane just as you did in the trainer.

The cure is the six-second rule: never look inside at anything for more than six seconds. We all need to grow egg timers in our heads.

You can hook up a 4-axis joystick with throttle/power and rudder control in seconds using the Joystick Axis Configuration tool under the Options menu. You can also fly it with the autopilot, called Demo Mode, which

is what I usually do. The display itself is incredibly beautiful (at least to me!) and looks fabulous on a monitor. And yes, it supports sound: “Traffic! Traffic!”

Today there are about 7,000 G1000 systems deployed throughout the GA fleet, installed in everything from the Quest Kodiak to the Cessna Mustang jet. Garmin offers 14 versions of the trainer for essentially all the airframes in which it is installed as original equipment. G600 users can also obtain a trainer, but for them it's a three-part download freebie.

You might think that this software is insanely expensive, but it's not. All the single-user versions are \$24.95. You can find it at larger pilot shops or online at <https://buy.garmin.com/shop/shop.do?cID=153&pID=6420#PC%20Trainers>.

There is nothing technical to prevent you from buying one and installing it on as many computers as you like. Given that and the low cost, it seems clear that Garmin is promoting the trainer as a learning tool in order to promote its big-ticket flight deck.

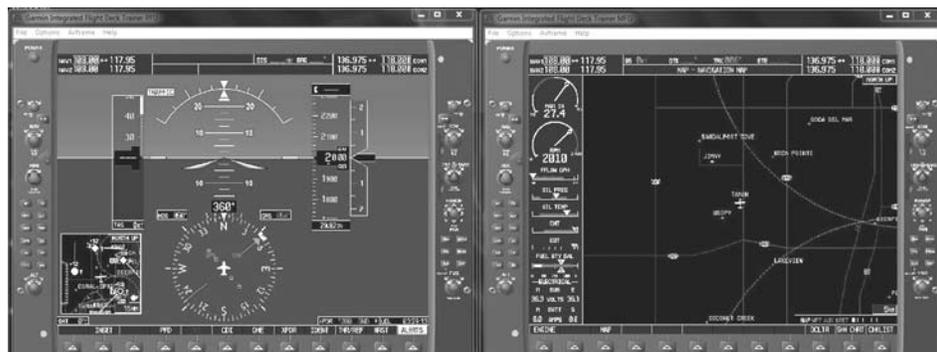
Get the Latest Version

You will want to buy the latest version, which is 9-dot-something. The earlier version 8 is still available, but you might as well have the latest.

These days most PCs go far beyond the required basic 1.8 GHz processor and 256 MB of RAM and a DVD-ROM drive.

However, the trainer is processor-intensive and you want as much horsepower as you can get, especially video memory.

The primary symptom of insufficient computing power is intermittent red Xs in the display which almost always cause the AP to disconnect. Then you scramble to re-engage the



The Garmin G1000 PC Trainer in dual screen mode. There is no better way to replicate the G1000's full functionality outside of the aircraft.

autopilot as the airplane heads who-knows-where.

Worse, it breaks your concentration and the flow of learning stops for a moment.

On-board graphics cards with Intel graphic chipsets and shared memory will not work with the G1000. Nowhere does Garmin say this, but DirectX will not load causing the trainer to fail.

Windows Versus Apple

It works fine on Windows 2000, XP and Windows 7, but not very well on Apple machines where PC emulation really slows things down.

The only glitch I have found is that the screen capture feature does not seem to work in Windows 7. It will run happily on a desktop or laptop computer.

The most impressive aspect of the trainer is its dual-screen mode. Imagine having the Primary Flight Display on your left and the Multifunction Display on your right.

They work together just as in the airplane. There is no closer emulation of the three-way interaction between you, the PFD and MFD to be had at this price.

Starting Dual Screen Mode

You can start dual screen mode from the Start Menu > Programs > Garmin Trainer > Start Dual Screen Trainer.

I dragged that to the desktop to create an icon which I find easier than drilling down through the Start Menu.

When you click it, both screens come up on one monitor unless you have set your computer for dual monitor.

In dual monitor, you may have to grab the MFD display and move it to the right-hand monitor. Using the trainer for the first time, skim through the brief Help just to see what you've got.

Before you power up the PFD, check the Options menu to select

bringing up the PFD or MFD. Move right to Airframe to select the specific airframe you want to work with.

At least in Cessna single-engine aircraft, you select which airframes to install when you install the trainer, along with whether you want the Flight Chart database or not.

Select the Airframe

Check whichever airframe you want as you cannot change it once you power up the system. It does not matter whether you click on the power button or use the drop-down menu.

You can pause the trainer by right-clicking anywhere in the PFD screen, at which point the airplane appears to stop in mid-air, something I've always

Being able to pause is absolutely great for giving yourself time to think about what comes next.

had a hard time doing in an aircraft.

Being able to pause is absolutely great for giving yourself time to think about what you are going to do next, catch up and ultimately get ahead of the airplane or for simply taking a break.

That feature in itself is one of the most important reasons why it's worth your time to learn the system on the PC Trainer rather than in the aircraft where things can rapidly go seriously wrong if you do fall behind.

When you leave for real, close the trainer by clicking on the power button, using the exit drop-down or clicking on the red X in the corner.

Not closing the trainer gracefully can lead to problems with it and/or your computer when you start it up at a later time.

The one thing that nearly drove me insane was finding the sweet spots that cause the knobs to turn right and left. Fortunately there are keyboard short-

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cuts you can use if you lose patience.

I preferred to force myself to do it the hard way since that's how the real unit operates.

My other gripe is that the approach database is anything but current even in the latest versions and there is no way to update it.

Learn the G1000 by learning only what you *must* know to fly it safely. For IFR pilots this includes knowing how to load, activate and edit a flight

plan; find airport and navaid information; suspend automatic sequencing of the flight plan; set up and fly a hold; load and activate an approach; change the choice of IAF and initiate a missed approach. Leave the exotic stuff for another day.

Use the trainer to build good habits from the start. See the cheat sheet below (photocopy it and keep it handy). Focus on the pages most often used, and you will be well on your way

to mastering the G1000.

In the words of Marie Curie, "Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less." The G1000 PC Trainer is an excellent way to go about understanding more.

Fred Simonds is a Gold Seal CFII and factory-certified G1000 instructor. See his web page at www.fredonflying.com.

G1000 CHEAT SHEET

- Check the tuning box before using COM or NAV controls (e.g. frequency, volume, transfer).
- Data entry requires a flashing cursor to begin.
- Press the FMS knob to turn the cursor ON if it is OFF and OFF if it is ON.
- The LARGE FMS knob changes the cursor location.
- The SMALL FMS knob changes the information (e.g. letters or numbers) displayed at the cursor location.
- If you make a mistake in data entry you can usually back up one step at a time by pressing the FMS knob.
- To navigate through the pages on the MFD, use the LARGE FMS knob to change Page Groups.
- The SMALL FMS knob changes Pages within the current Page Group.
- Select the Flight Plan Page Group by pressing the FPL key.
- Always look for Softkeys first. If there is no Softkey, then use the Menu key.
- For GFC 700 AFCS (autopilot/flight director) operation, check the Status Box first, activate the appropriate command(s), then RECHECK the Status Box to verify the active and armed modes.
- Use the PROC (Procedures) key to load and activate Instrument Approach Procedures in the active flight plan.

MOST-USED MFD PAGES

MAP Page 1	Navigation
MAP Page 4	Weather Datalink
WPT Page 1	Airport Information
FPL Page 2	Active Flight Plan
AUX Page 1	Trip Planning
Aux Page 3	GPS Status
Aux Page 4	System Setup