A G1000 IFR ODYSSEY

It's great to have big glass on a long trip. But there are some downsides, too.

by Fred Simonds

One benefit of being a pilot and especially a flight instructor is that your chances of adventure go up. So it was when acquaintance Ron called and asked me to help fly his new Cessna 182 from Concord, NH to Lantana, FL.

Having just completed this 1300-mile, 11-hour IFR odyssey, let me share some operational IFR and G1000 observations with you.

To Go or Not to Go

Ron had left a voice message, so I mused over his request before calling back.

What would it be like flying 10 hours cheek-by-jowl with someone I barely knew? I had spent a few hours with him in his 182 discussing its G1000 system. He held a recent private pilot ticket and a new instrument rating. He was conscientious and considerate. Okay, an up check for Ron.

And the airplane? A creampuff late-model turbocharged Cessna 182 with a fully optioned Garmin G1000. I saw that he treated the airplane with respect and care. Another up check, nay, two up checks.

How about me? I had been flying G1000 182's almost exclusively for months, including at night. Since part of the trip would be after dark, I was comfortable with Ron landing by night. I was confident that I could handle any awkward situation. (No worries, Ron made a perfect night landing in Charleston, SC.)

Further, I knew the Northeast and Florida airways well. While the rest was unfamiliar, IFR is IFR anywhere, and it's good to do new things.

The imponderable was weather. We might have to wait out a deep freeze. That's life.

The tipping point was spousal endorsement. With that last-but-crucial up check in hand, I happily called Ron and agreed.

Gettting Ready

En route from Florida to New Hampshire, I closed my eyes for a bit and reviewed the G1000's many weather features. It looked as though we would need them when I stepped off the airliner in Manchester into a cold, biting wind, gray skies and new snow on the ground. Ron picked me up and, once home, showed me his flight planning.

Preflight planning helps you win a mental victory before you set foot in the airplane and Ron was winning big. He had en route charts and approach plates for our entire route. He even had VFR sectionals. These can save your life if all else fails, yet are seldom seen in IFR cockpits. He was not putting all our eggs in the G1000 basket. We also agreed that he would be PIC.

Ron planned three segments: Concord, NH to Atlantic City, NJ, then on to Charleston, SC to overnight. The next day we would continue to Lantana, FL.

AOPA's flight planner built a route taking us from Concord down V39 to Gardner, MA VOR, V229 right over JFK (very cool), DIXIE, PANZE and into Atlantic City.

Rosy weather forecasts often deteriorate as launch time nears. Low pressure was reluctant to give way to high pressure behind it. We scoured all the weather tools.

At best we might escape the frozen clutches of the northeast around noon the next day. We consoled ourselves with a nice dinner in town.

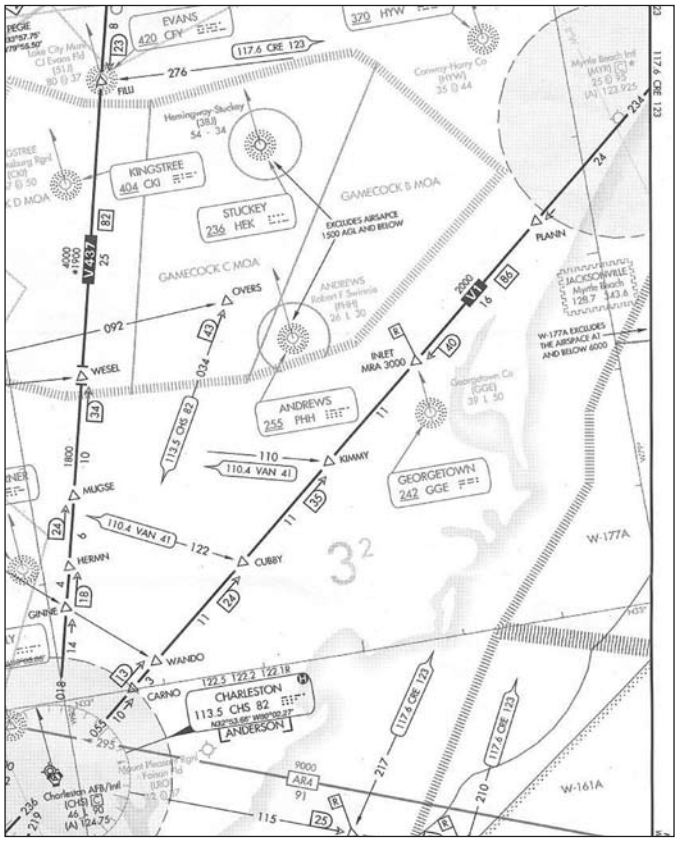
The Adventure Begins

Surprise! The next day dawned bright and sunny. After a preflight phone briefing, Ron filed IFR for 6,000 feet since the winds were from the northwest at the same speed at all lower altitudes. In the end we had great VFR and a slight quartering tailwind all the way to FL.

At Concord, Ron entered the flight plan into the G1000 deliberately and methodically. He verified the route programmed as the one given.

We examined the map on the flight planning page in narrow mode to assure that the routing was correct and sen-

Short final to Atlantic City on the ILS.



After vectors around the hot Gamecock B MOA the question faced was how to rejoin V1.

sible. Egregious errors stick out like sore thumbs. If unhappy with ATC's routing, we would say so before leaving the ground.

We preflighted his G1000 (See my "Preflight Your G1000" article in *IFR Refresher*, July, 2009) to be sure the system was feeling its best. Key items included verifying that both GPS receivers work with enough satellites (3 for 2-dimensional navigation and 4 for 3-d nav), and ensuring that all G1000 components function on the System Status page.

On long trips small things matter more. We reset the trip odometers. Ron set our fuel level before departure to validate the navigation range ring. It proved reassuring in flight to see us always well inside the inner ring, especially in unknown territory.

After departure, Ron engaged the GFC700 autopilot and we climbed to 6000. We tracked our way to Atlantic City with many frequency changes.

En route, Ron and I went over some lesser-known G1000 features while maintaining situational awareness, monitoring ATC and looking for traffic.

At Atlantic City, Ron executed a nice ILS to runway 31. He wisely asked for a progressive taxi clearance to and later from the FBO while we monitored our progress with a paper airport diagram and the G1000's Safe Taxi feature.

Just for fun we filed direct Charleston. What we got was radar vectors to Waterloo, then V1 to Salisbury, Md. VOR, direct Norfolk, VA, direct Charleston. There is logic in filing direct and just letting ATC give you whatever they're going to give you.

Paper Sometimes Trumps Glass

We were confused as we sought to figure out what a Waterloo is. Yes, a VOR, but the identifier? It's in the G1000 "Nearest" page group, but the paper en route chart proved much faster. Throughout the trip we found paper charts and approach plates invaluable.

Our second leg was the longest at 507 nm. We settled in for the 4.2 hr flight, the last half at night.

Washington Center called us as traffic to fighters being vectored to land at Langley AFB. Then he called us advising a pair of F-22 Raptors at our nine o'clock at 5,000 feet. He cautioned us to stay at 6,000 as if to say we were not being intercepted.

Looking down, I could clearly see the gray, twin-tailed planforms go by. The traffic map showed one diamond and no altitude. I think Raptors use a passive reflector when they want to be seen on radar. Reflectors don't do Mode C, but could we say our G1000 found a Raptor?

West of Myrtle Beach, we were vectored around the hot Gamecock B MOA controlled by Jacksonville Center. (See chart.) Center turned us to 140° to join V1. Being near the MOA, it was impossible to go direct PLANN without clipping the MOA's corner. How then to join V1?

My first thought was VOR: join the 234° radial from Myrtle Beach, then load V1 starting at PLANN. It was the only time we considered using VOR. The entire trip was via GPS.

We could have set PLANN direct, then used OBS mode to fly south to PLANN once clear of the MOA. A cruder way would have been to keep hitting the Direct button until clear.

Being vectored, we could have set the G1000 to start V1 at Myrtle

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On to Charleston after being cleared direct..

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you hit the gear switch when the glideslope needle is still one dot high.

That gives the gear time to extend, lock and indicate before you start down on the glideslope. If the gear hangs up you are still flying level at a safe altitude and can sort out the problem with minimal fuss.

There is probably a holding fix near the airspace you were flying as you approached the FAF or glideslope intercept fix, providing a safe place to take care of whatever problem has arisen with the airplane without entering the red zone.

Weather Above Minimums

Finally, Part 135 and 121 operators generally can't pass the final approach fix inbound on an approach unless the weather is reported to be at or above minimums.

Part 91 operators can shoot an approach no matter what the weather; they just can't land unless the weather is at or above minimums when they arrive the missed approach point.

Is it any wonder that Part 91 operators have a far higher rate of accidents on the approach?

Why, then, would anyone enter the red zone without the weather being at or above minimums?

The real red zone, the one IFR aviators face, is a zone that has seen more than enough mayhem. We need to recognize its existence and treat it with the respect it deserves by staying out of it until we have the airplane collected, the gear is down and indicating and the weather is at or above minimums.

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Beach and get off at Charleston, our destination. Then we could fly east to join it. In the end, the controller reissued direct Charleston once we were east of the MOA.

Not Quite Omnipotent G1000

If you enter an approach after the airport, the G1000 will do as told but perhaps not what you want, by taking you first to the airport and then to the approach. Cleared direct Charleston, we then sought the GPS 33 approach beginning at MAVNE. Once cleared to MAVNE, we deleted Charleston.

Ron did the LPV GPS 33 approach into Charleston. Flown by hand, he followed it with his best landing. We parked, dined and retired. So far, 830 nm in 7.4 hr of Hobbs time.

Day Two – On to Florida

After takeoff we had an immediate glitch. Somehow our departure airport, Charleston got set as our first waypoint. Following the magenta bar, Ron began a left turn, not realizing it would take us backwards and contrary to the controller's runway heading clearance.

Ron recovered so quickly that there was no hint of it on fltplan.com's radar plot yet his initial turn in the wrong direction was pronounced enough that I encouraged him to file an ASRS report.

Herein lies a clear example of GIGO: Garbage In, Garbage Out. The G1000 mindlessly led Ron astray. He learned the hard way not to trust the magenta HSI alone.

From Savannah we were cleared via the Brunswick, GA-Jacksonville, FL-Ormond Beach, FL and Vero Beach, FL VORs, then direct Lantana, Florida.

We landed right on time with no lost bags. Now, how many airlines can pull that off?

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