

Time machine



We put a Piper Meridian turboprop to work BY THOMAS B. HAINES

North Dakota, to Mobile, Alabama, and back to Frederick. None of the points of this triangle that encompasses most of the eastern United States is exactly an airline hub. In fact, Frederick doesn't even have airline service. But people have a need to travel and many of the places that people need to travel to are not near one of the handful of airline hub airports around the country. General aviation is uniquely suited to filling this niche, which is the reason that the need for GA travel has not diminished with the sagging economy. The need is still there, and as soon as businesses feel the effects of a recovery, business travel by GA will rebound.

PHOTOGRAPHY BY CHRIS ROSE

To see how well an efficient business airplane can compete with the airlines to such locales, we borrowed a Malibu Meridian single-engine turboprop from Piper Aircraft and put it to work. When it comes to turbine airplanes, it's hard to beat the efficiency of the Meridian. The single 500-shaft horsepower Pratt & Whitney engine burns a fraction of the fuel of a jet or larger turboprop twins (and even most single-engine turboprops), leaving a gentler carbon footprint in its wake. In the flight levels we consistently saw true airspeeds in the 250- to 260-KTAS range with typical fuel burns of about 236 pounds per hour (about 35 gph). Many turbocharged piston singles flying in the low flight levels will see fuel burns within 10 gph of that, but usually lack the pressurization, air conditioning, known icing

Overhead switches (above, left) manage electrical, engine, lighting, and de-ice systems. Indirect lighting, folding table, and seating for four in the main cabin give the Meridian a big-airplane feel (center). Automatic climate controls increase passenger comfort (right).

TURBINEPILOT



certification, and the technology of the Garmin G1000 that is standard in the latest Meridians. Piston airplanes will take longer to get to altitude than the Meridian, which is still climbing well at FL280, the highest usable altitude in the United

Training for the task

SimCom polishes Piper pilot skills

When Piper announced the Garmin G1000 upgrade to the Meridian earlier this year (see "New Magic," August 2009 *Pilot*), company vice president of sales and marketing Bob Kromer told me the upgrade "transformed" the airplane. Color me skeptical. But, now after some 25 hours of flying it, I know he's right. The Meridian has gone from a simple turboprop upgrade of the piston Malibu Mirage to a highly States because it is not certified for RVSM altitudes, which start at FL290.

The real deal

With a full load of 170 gallons (1,140 lbs) of Jet A, the Meridian comfortably ranges

sophisticated single-engine turboprop in the decade since it was introduced. And the Garmin integration, especially its crew alert system and GFC 700 autopilot, are the most evident changes.

Learning to manage those systems requires more than a quick checkout. Piper contracts with SimCom to manage its training programs, which are all conducted in Vero Beach, Florida, right next to the factory. The SimCom center includes two training devices, one for the piston-powered PA-46 Malibu line and one for the Meridian. As with most other SimCom-built devices, these two are



SimCom instructor Bill Inglis (left, background) pours turbine engine information into the author's head. The SimCom flight training device (right) replicates the Meggitt Magic version of the Meridian. A Garmin G1000 version will be online soon. to 900 nm or more with IFR reserves at high-speed cruise and no wind. But in the real life the wind blows (and strongly in the flight levels) and sometimes you can't always take full fuel. We wanted to take the Meridian out of its comfort zone,

non-motion, but with wraparound visuals that give you the sense of motion. The Meridian device represents the original Meggitt Magic version. It's fine for practicing engine start sequences, failure modes, and basic aircraft handling, but for any avionics work, pilots are moved to the Garmin G1000 training panelessentially a G1000 panel mounted in front of two airplane seats. It works well for getting to know the system. SimCom plans to add a G1000-equipped FTD in the next few months. Still, much of the training is done in the airplane. In primary and instrument training it's often said that the cockpit is a poor classroom, but airplanes of this class are an exception. The Meridian is guiet and with pressurization and air conditioning, it's comfortable too.

SimCom center manager Bill Inglis was my instructor for the Meridian fiveday initial course. It was great to spend time with someone who knows the ins and outs of the airplane so well. The hours of classroom time allowed Inglis the chance to show me the workings of turbine engines with real engine parts. System diagrams projected on a big screen are much more engaging than the poorly reproduced outlines in most pilot operating handbooks. because not every trip fits neatly inside the sales brochure.

A fully loaded Meridian will carry three FAA 170-pounders and a couple of briefcases. But we could only find one of those FAA-approved people for our trip; the other two weighed more than standard weight and since we were traveling for a few days, we had bags. And one of us is a photographer and they never travel light. So to accommodate our group, we had to leave about 240 pounds of fuel behind, giving us about 900 pounds to work with. And wouldn't you know, two of the legs we wanted to travel stretched well beyond 900 nm. It's just more than 1,000 miles from Frederick to Grand Forks, and more than 1,100 miles from there to Mobile. It's a quick 760-nm trip home from Mobile.

So although a fully fueled Meridian might make all three legs nonstop if the winds were just right, outside the sales brochure, the winds are seldom "just right." And with partial fuel we knew we were going to be making a stop each leg. In fact, with wind we were perhaps going to need two stops on some legs.

So that's how AOPA Flight Training Deputy Editor Ian Twombly, Photogra-



The Garmin keypad conveniently mounted on the power pedestal speeds data entry into the G1000 cockpit. While the power lever is big and beefy, you want just a couple of fingers on the lever's stem to manage power.

pher Chris Rose, and I found ourselves loading up the Meridian on AOPA's ramp in Frederick early one Tuesday morning in September. Twombly was in the right seat helping with checklists, navigation, and communications while Rose shot in-cockpit photos and caught up on his reading in the comfortable cabin.

If the winds were kind, we could make Green Bay, Wisconsin, nonstop and if so, nonstop then to Grand Forks would work. With the Garmin G1000 at our disposal, we were never lacking for information and we worked the weather pages for all they were worth starting right after takeoff. Not only were the winds working against us, but Green Bay and most every other reasonable stopping point on either side of Lake Michigan was below minimums. The forecasts were calling for conditions to improve, but as we flew along watching the trends, we began to realize the forecasts were wrong; in fact, conditions were getting worse.

So crossing into Ohio, we made the decision to stop for fuel in Toledo, Ohio—a short 322-nm leg, but as far west as we could get given the low conditions. With that, a second stop was inevitable. At Toledo, we brought the tanks back up to 900 pounds and set off west, leapfrogging the worst of the low weather. Eau Claire, Wisconsin, 389 nm northwest, was our next stop, where we were greeted with a localizer back course approach down to 1,200 feet. Ninety minutes later we



Every day consisted of time in the classroom, the FTD, the training panel, and, of course, dessert—the airplane. In flight, Inglis was a fount of helpful tips power settings for all phases of flights and tips for descent planning and fuel ordering (for we piston pilots, converting pounds of Jet A needed to gallons pumped in by the line boy is a skill to be learned). One can expect the airplane to burn 300 pounds the first hour and about 250 pounds every hour thereafter.

Under Inglis' guidance I went from feeling overwhelmed by the systems and the G1000 to feeling confident in my ability to fly away safely in the airplane, which I did after five days. Flying a turboprop for the first time by yourself is one of life's more memorable moments. SimCom's excellent instruction got me to that level quickly. —TBH

AOPA PILOT . 61 . NOVEMBER 2009

TURBINEPILOT

landed under brilliant blue skies at Grand Forks and taxied to the expansive ramp of the University of North Dakota (see "Waypoints: 50 Before 50," page 38).

Even with two stops, the Meridian had made fast work of the 1,000 nm and we were there in time for our afternoon round of meetings with Bruce Smith, dean of the Odegard School of Aerospace Sciences at UND, and his staff.

After a tour of the impressive flight operations and the Odegard buildings on the main campus, we met the staff for dinner; additional meetings the next morning kept us busy. Grand Forks has only a few airline flights a day—almost all to Minneapolis. Not slaves to the limited airline service, we took our time and accomplished all we intended before cranking the Pratt & Whitney PT-6 for our trip to Mobile, Alabama, to meet with Teledyne Continental Motors.

Wind, wind go away

The goal on Wednesday was to complete the UND meetings and simply get to Mobile for Thursday morning meetings with TCM. At FL280, 70-knot winds out of the southwest from the same weather system as the day before gave us a headwind component of nearly 30 knots, driving the groundspeed down to about 230 knots. We tried an intermediate cruise setting to see if we could stretch the first leg to the goal of Columbia, Missouri. No go. So we swooped into Kirksville, Missouri, instead, and after a quick turn continued southeast. With thunderstorms showing up on the Garmin MFD, we set West Memphis, Arkansas, as our destination. Once there in the late afternoon, I made the decision to spend the night.

Thursday dawned crisp and clear and we easily made the 90-minute flight to Mobile Downtown Airport in time for our 9 a.m. flight in a TCM Cirrus SR22 with full-authority digital engine controls. In briefings later in the day we learned more about TCM's strategy for dealing with the eventual disappearance of leaded avgas.

By 3 p.m. we lifted off the downtown airport for the return home. Headed northeast for the longest single leg of the trip we'd surely be due a tailwind, no? Well, almost no. For a while we had 14 knots on the tail, according to the little readout on the Garmin primary flight display. But the push soon evaporated as we made a turn just past Atlanta for Greensboro, North Carolina. After refueling in Greensboro, we took off at dusk and climbed to FL210 for the short one hour and 10 minute flight to Frederick.

On that last leg home, I reflected on how far we had traveled in the previous two days—nearly 3,000 nm to small Midwestern cities that truly are the heartbeat of America. Places where important factories and universities create jobs and opportunities far from the hub cities the airlines wish we all lived in.

We burned about \$2,600 of fuel carrying the three of us to these far-flung locations across just three days—only two nights in hotel rooms. The cheapest possible airline tickets for three of us would have cost between \$3,000 and \$3,800—not including luggage fees for Rose's expansive photo gear.

We left Frederick from our own ramp, taxied up to the UND ramp, and landed just across the field from TCM. A trip to an airline airport would have added at least two hours to the trip. In Mobile we would have landed at the regional airline airport and needed a car to get across town to the TCM factory on the downtown airport, which has no airline service. Getting to Grand Forks from the Baltimore/Wash-



The view from FL270. The Meridian's thin, 43-foot wing allow it to glide more than 80 miles from such altitudes, virtually assuring the ability to make it to some landing facility in the rare event that the single Pratt & Whitney PT-6 takes a powder.

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The view from FL270. The Meridian's thin, 43-foot wing allow it to glide more than 80 miles from such altitudes, virtually assuring the ability to make it to some landing facility in the rare event that the single Pratt & Whitney PT-6 takes a powder. ington area is a two-stop affair. It's three stops from Grand Forks to Mobile (and you're still at the wrong airport), then two more legs back to Baltimore/Washington and then a two-hour ordeal collecting baggage and driving home.

For any mid-size company located in Midwestern small towns where labor is cheaper and a sane lifestyle reigns supreme, a Meridian at \$2.2 million becomes just another tool—a time machine. It's fast, comfortable, and efficient.

AOPA PILOT · 64 · NOVEMBER 2009

I was privileged to have the Meridian at my disposal for about three weeks. Aside from a faulty prop deice sensor, it flew squawk free for more than 25 hours-start it up and go in comfort and style. All too soon, though, it was time to turn it back over to Piper. I'll remember fondly those many hours in what is a surprisingly sophisticated and capable turboprop. ACIPA

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AOPA PILOT • 65 • NOVEMBER 2009