



FLIGHT SAFETY & OPERATIONS NEWS

ISSUE # 2007-17 Good Job Recovering the Missouri Wing TBM

DISRIBUTION: General Staff, Unit Leaders, Safety, Ops and Maintenance Officers, Pilots and Selected HQ staff

THERE I WAS:

by Col John Lohmar

Our Wing's Grumman TBM was scheduled to make the last appearance of the 2007 season at "[Airshow Oklahoma](#)" in Muskogee, OK the last weekend of October. Mike Anderson is the airshow promoter, a member of our Wing, and a fellow TBM pilot, so Friday's low weather was particularly disappointing. Ceilings and visibilities that never got above 800 & 2 made the decision easy however, and we had to stand down all day. I called Mike late in the afternoon and left a message that I would not make it to Muskogee on Friday. The weather was forecast to be better on Saturday and I told Mike that I would launch early in the morning planning to get down there in time for the pilot briefing. A dome of high pressure slipped into the upper Midwest over night and Saturday dawned as a beautiful, clear autumn day. A short call to flight service on the way to the airport confirmed what I had seen on the internet earlier that morning. Clear skies, light winds and cool temperatures were forecast for the rest of the weekend.



Pat Kesler, our Wing Leader met me at Smartt Field at 7:00 and by about 7:45 we had the TBM out of the hangar, the pre-flight completed, and I made last minute checks of the gas and oil situation. A little over 27 gallons of oil would have been plenty for my flight to Muskogee, but I had a few extra minutes and decided to add a couple of gallons (good decision). The TBM has always had a pretty low oil consumption rate, but I made a mental note to check it again on arrival in Oklahoma. I pre-oiled the engine and Pat helped me pull the prop through enough to ensure that none of the cylinders had a hydraulic lock.

With my straps on, the cockpit set up, and the checklist completed, I cleared the area and pressed the start button. The big Wright R-2600 was easy to coax to life and after a short warm up, the taxi out, run-up, and takeoff procedures were all normal. I soon found myself climbing smartly to the southwest enjoying the autumn colors of rural St. Charles County. It was obvious that the TBM liked this cool high pressure air and I felt good that the weekend was going to work out well despite the previous day's weather delay. A call to St. Louis approach control revealed that I was not the only one flying on this pretty morning. They were too busy to provide either VFR flight advisories or a Class B airspace clearance and told me that I should call Kansas City Center further down the road. I trimmed the TBM up for a slow, steady climb that kept me below Lambert's Class B airspace and kept my head on a swivel watching for other VFR traffic doing the same thing.

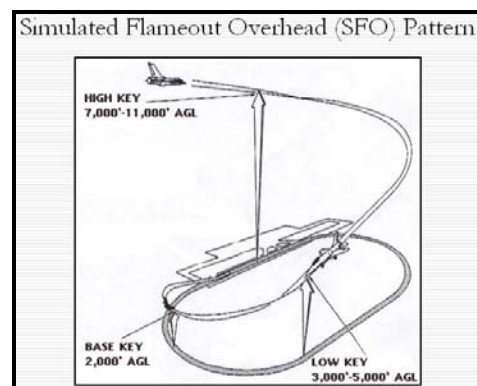


6500 feet proved to be a good cruise altitude, with a smooth ride and about a 10 knot tailwind component, just as Flight Service had promised. In short order I had my cruise checks complete, the center fuel tank selected and was enjoying a little breakfast (a protein bar and a bottle of water) in clear skies and smooth air. All engine instruments were indicating normally and the engine was running smoothly. Then I began to smell smoke. At this point there was a strong oil/smoke smell, but I could not see any smoke. A quick glance at my GPS confirmed what I already knew Forney Army Airfield (TBN) was the closest airport, about 8 to 10 miles to the south-southwest. I began a turn toward TBN and was now beginning to see smoke in the cockpit.

In just a few seconds smoke was pouring into the cockpit to the point that I opened the side window in an effort to clear the air. I stuck my head out a little bit and noticed smoke was also streaming down the left side of the aircraft. As I rolled out of the turn toward TBN the engine backfired three times in rapid succession and began to run very rough. The chip light came on. The engine was now banging and shaking continuously, but was making enough power for me to hold altitude and the oil pressure and temperatures were still in the green arc. Since I was not sure that I would have even rough, intermittent power for much longer and since the TBM glides like a polished anvil I stayed at 6500 feet until I was directly over the airport at Forney.

With a few minutes to go until I was overhead Forney, I took the opportunity to analyze the situation, make a few decisions, and get some house keeping items cleaned up. I looked around the cowling as best I could and could see no fire, so I was pretty sure that the smoke was coming from some type of oil leak onto the exhaust manifold. I was relieved, but also realized that this situation could indeed quickly turn into a full blown fire. I made the decision that if that happened I would point the airplane toward an unpopulated area (that is all that I was flying over anyway) and step over the side. I cinched up my parachute harness, reviewed the bail out procedure, and felt pretty good about that decision. I also reviewed the engine failure and off airport emergency landing procedures in case the engine did quit all together. I was able to spot a few small fields and country roads that I might have been able to land on, but all in all was quite glad that the engine was running, so far. I never had established contact with Kansas City Center, so I just set 7700 on the transponder and dialed up Forney tower on the #1 Comm. The first couple of calls to Forney went unanswered, but the third elicited a response from an Army Blackhawk helicopter that was working in the pattern at Forney. He explained that the tower was closed on Saturday morning and that they were presently on a downwind leg. I told the Blackhawk pilot that I was about 4 miles north with a sick engine and was planning a steep overhead approach at Forney. He responded that they would clear the runway after their next landing and would stay on the ground until I had landed. It occurred to me that having my very own helicopter to talk to in this situation might turn out to be a real benefit, so asked them to stay on frequency.

A short left turn to final lined me up directly over the approach end of runway 14 and a sense of relief swept over me as I realized that even if the engine seized completely, or the prop went to flat pitch I could make the runway from there. I reduced the power and executed a steep 360 degree overhead "flameout" approach, extended the gear and flaps on short final and landed without incident. The engine continued to backfire and run rough, and the chip light remained illuminated until I shut the engine down on the ramp. All together I was in the air about 6 minutes after I first noticed the smoke, with the engine at cruise power or less.



Once the engine was shut down and the cockpit was secure I took a moment to catch my breath, took my helmet off, got out of my harnesses and climbed down on to what was now a very oil-soaked ramp. The left side and bottom of the aircraft were coated with oil from the front row of cylinders all the way back to the tail. Looking in through the cowl flaps I could see that the intake tube had come off at least one cylinder. There was so much oil about that it was very hard to see any other damage that may have otherwise been readily apparent.

Providence, it seems, was with me that morning in more ways than one, as I had not been on the ground more than 15 minutes when a regional airliner rolled on to the ramp, enroute to St. Louis. I called Pat Kesler, explained the situation, grabbed my gear and headed over to talk to the Captain of the Beech 1900. He was very gracious, allowed me to take his jump seat and in less than an hour I was back in St. Louis. Pat picked me up at Lambert and I was back at the Wing in St. Charles County only about 3 hours after I left (minus one TBM).

A team of volunteers from the Wing drove down to Forney about two weeks later and found that the # 13 cylinder had cracked and completely separated about 2 inches above the base. There is actually a dent in the cowl where the top portion of the cylinder hit it after separation. It appears that the piston then came out of the cylinder and proceeded to beat against the two remaining pieces of cylinder until the connecting rod failed. The piston, piston pin, and connecting rod were ejected from the cylinder and were found elsewhere in the engine compartment. The next page has some pictures of the engine damage and after that, a few lessons learned.



A few lessons learned:

Oil is like gas – the only time you have too much is when you are on fire. The 29+ gallons that I left Smartt Field with was a good deal more than I needed for the 2 hour flight to Muskogee, but given that rate that I was losing it, I am sure that I was not more than a few minutes away from running out entirely. That, of course, would have led to the inability to control the propeller and/or a seized engine.

This incident reaffirmed my belief in wearing proper safety equipment when flying Warbirds. I had a new parachute with me that morning and was wearing boots, a hard helmet with visor, and a Nomex flight suit and gloves. While contemplating the possibility of a serious in flight fire or an off airport landing, suddenly none of that equipment seemed very expensive.

GPS is a great addition to aviation safety and an old fashion VFR chart is a good thing to have as well. I had my Garmin GPS sitting right in front of me on the glare shield of the TBM and a current sectional chart on my knee board when things started going poorly. Between the two I was able to very quickly and accurately assess the situation, identify the closest airport, plan the best course of action, and find other resources such as comm. frequencies.

There are a lot of resources available to us – use them. If available, I always get VFR flight advisories from center while enroute, but had not yet talked to Kansas City center that morning. When the engine was acting up and Forney tower was not answering I regretted not having that resource available to me. Also, since it is a dual-use civilian/military airport, Forney has excellent Airport Rescue Fire Fighting (ARFF) equipment and personnel available. I am sure that if the tower had been open they would have offered it to me, but in the “heat of battle” it did not occur to me to ask the Blackhawk pilot to alert them for me. They did come out to meet me on the ramp, but it would have been good idea to have them at the runway while I was landing.

Proficiency flying is the most important flying that we do. I had flown the TBM quite a bit in the past 3 months and was very comfortable in the airplane. In addition, just over a month before this incident I had taken the opportunity to do about 45 minutes of true proficiency flying in the TBM. I completed several stall series, steep turns, did some slow flight, and reviewed all of the emergency procedures. Between that and the fact that I was flying a “Grumman Iron Works” airplane I was quite confident that if I had to make an off airport landing that morning it would have been survivable.

Our TBM is still at Forney and the airport management there has been just fantastic about helping us out with ramp space, hangar space, etc. We currently are in the hunt for a new engine and making decisions about how to get the aircraft repaired and back home.

Send me a note if you have any questions.

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