PA-46 Accident Review

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NTSB Identification: WPR13LA210
14 CFR Part 91: General Aviation
Accident occurred Sunday, April 28, 2013, in Bryce, Utah
Aircraft: PIPER PA-46-500TP, registration: N2589U
Injuries: 6 Uninjured.

This is preliminary information, subject to change, and may contain errors. Any errors in this report will be corrected when the final report has been completed. NTSB investigators may not have traveled in support of this investigation and used data provided by various sources to prepare this aircraft accident report.

On April 28, about 19:59 Mountain Daylight Time, a Piper PA-46-500TP, N2589U, experienced a runway excursion at Bryce Canyon Airport, Bryce, Utah. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The private pilot and five passengers were not injured; the airplane sustained substantial damage. The cross-country personal flight was departing with a planned destination of Heber City, Utah. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot reported that the airplane did not climb after liftoff and veered to the left. He attempted to land the airplane on an adjacent taxiway; however, it touched down on a dirt area next to the taxiway. One main landing gear wheel caught a rut and sheared off. The airplane sustained substantial damage to the wings and fuselage.

COMMENTS:

It appears the pilot of this aircraft made a very wise decision to discontinue the flight during the takeoff when he discovered that the aircraft wasn't performing properly, but, at the time this particular decision was made, the outcome (no injuries) was far from certain.

In the absence of a guaranteed safe operation, how can we make decisions which lead to a more certain outcome? We can look at flight planning with reference to weight and balance or density altitude. We can suggest that the maintenance program may need modification. Some of these things may have been identified and corrected prior to the flight, but what if the pilot did everything perfectly? How could he have ensured a better outcome?

Human factors specialists tell us that, unless we specifically guard against it, our brain will use new information to confirm our existing perception. It is called confirmation bias. In other words, once we make a decision, consciously or subconsciously, it is very easy to interpret new information as supporting that decision. The Air Florida 90 crash at DCA in January 1982 is a compelling example. (http://en.wikipedia.org/wiki/Air_Florida_Flight_90)

It seems that a good decision made too early may sometimes

and the most affordable to buy and own. Powered by a 500-shp PT6A-42A (a derated version of the 850-shp PT6A-42 in the King Air 200), the Meridian was introduced in 2001 as a powerful step-up from the Malibu/Mirage series that began in 1984.

Its development involved much more than just dropping a turboprop engine into a Malibu: the horizontal tail is 37 percent larger and wingroot strake areas were added. Piper strengthened much of the airframe to accommodate more than 500 pounds of added gross weight, and also increased fuel capacity and complied with numerous FAA certification requirements applicable to turbine-powered airplanes. The company was hardly new to the turboprop business; it was able to draw on its considerable experience building Cheyenne corporate twin turboprops.

Delivering 260-knot cruise speed and ranging as far as 1,000 nautical miles, the Meridian's five- to six-seat cabin works well for an owner-flown business aircraft. The 1,750-pound useful load is adequate for its role, although it must be balanced between fuel and payload, given the airplane's 173-gallon fuel capacity. Maximum operating altitude is 30,000 feet; most operators will fly up to FL280. With a 43-foot wingspan, 11.3 foot heigh,t and a length of just under 30 feet, the Meridian hangars more easily than the larger turboprop singles.

The Team Chambliss Piper Meridian, Chambliss says, gives him the most bang for the buck of any airplane out there. It's large enough for their needs, it's fast and comfortable, and the Meggitt Magic 1500 EFIS and Garmin avionics do a good job. He may upgrade to a newer instrument panel at some point; later airplanes were equipped with standard AviDyne EFIS, and the newest ones have Garmin G1000 cockpits. But, he's content for now and enjoys flying the Meridian from the Flying Crown Ranch, the Arizona residential airpark he calls home. His personal airstrip is 30 feet wide and 2,500 feet long; not many Flight Level airplanes can be flown from a base like that.

Some typical Meridian missions, other than commuting to and from airshow locations, are using it as a photo ship for media flights at shows, where the local reporters need to be flown alongside Chambliss while he poses upside down in the airshow airplane, smoke on. It carries parts and team members, and generally supports Team Chambliss wherever the mission leads. It is, quite frankly, a business tool, making it possible to carry on the work of the team. For Kirby Chambliss, it's proven to be perfect for the job. MMOPA

The Chambliss Fleet

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produce a bad outcome. A really effective way to prevent this confirmation bias is to make decisions at the latest possible moment using simple observations. This needs to be done promptly before any opportunity to employ an alternative is diminished.

With respect to the takeoff decision, assuming that the runway length is appropriate for takeoff per the POH, typical takeoff acceleration should allow the airplane to reach 70 percent of liftoff airspeed by the midpoint of the runway. The "rule of thumb" says the takeoff should be aborted if the airplane hasn't reached this speed by the midpoint because it may not be possible to lift off in the remaining runway.

Several points are important when considering using this rule of thumb:

a) Airspeed indicators in small airplanes are not required to be evaluated at speeds below stalling and may not be usable at 70 percent of liftoff airspeed.

b) This rule of thumb is based on a uniform surface condition. Puddles, soft spots, areas of tall and/or wet grass, loose gravel, etc., may impede acceleration or even cause deceleration. Even if the airplane achieves 70 percent of liftoff airspeed by the midpoint, the condition of the remainder of the runway may not allow further acceleration. The entire length of the runway should be inspected prior to takeoff to ensure a usable surface.

c) This rule of thumb applies only to length of runway required for actual liftoff. In the event that obstacles affect the takeoff climb path, appropriate distance must be available after liftoff to accelerate to the best angle of climb and speed to clear the obstacles. This will, in effect, require the airplane to accelerate to a higher speed by midpoint, particularly if the obstacles are close to the end of the runway. In addition, this technique does not take into account the effects of upslope or tailwinds on takeoff performance. These factors will also require greater acceleration than normal and, under some circumstances, prevent takeoff entirely.

d) Use of this rule of thumb does not alleviate the pilot's responsibility to comply with applicable Federal Aviation Regulations, the limitations and performance data provided in the FAA approved Airplane Flight Manual (AFM), or, in the absence of an FAA approved AFM, other data provided by the aircraft manufacturer.

This advice comes to us right out of the AIM (Chapter 7, paragraph 5-7). Applying it to PA-46 aircraft is straightforward; if your aircraft is not at 60 knots by halfway, use the remaining runway to stop. With some experience with this callout, you will gain confidence in knowing when your aircraft is performing properly even when using longer runways. You can then use this information to make a timely takeoff decision — one that you can live with.

If you would like more information on this or other strategies for improving the safety of your flying, or if you have comments or questions, you may contact Dick directly at mail@rwrpilottraining.com MMOPA

Regards,
Dick Rochfort, ATP, CFII
Master Instructor
Providing excellent type-specific training and related services to PA-46 owners and pilots worldwide.