PA-46 accident, Oshkosh, Wis.

BY DICK ROCHFORT, ATP, CFII, MASTER INSTRUCTOR

NTSB Identification: CEN15FA311
14 CFR Part 91: General Aviation
Accident occurred Wednesday, July 22, 2015, in Oshkosh, Wis.
Probable Cause Approval Date: March 9, 2016
Aircraft: PIPER PA-46-310P, registration: N4BP
Injuries: Three serious, two minor.

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 either traveled in support of this investigation or conducted a significant amount of investigative work without any travel and used data obtained from various sources to prepare this aircraft accident report.

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The pilot was landing at a large fly-in/airshow and following the airshow-arrival procedures that were in use. While descending on the downwind leg for Runway 27, the pilot was cleared by a controller to turn right onto the base leg abeam the runway numbers and to land on the green dot (located about 2,500 feet from the runway's displaced threshold).

About the time the pilot turned onto the base leg, he observed an airplane taxi onto the runway and start its takeoff roll. The controller instructed the pilot to continue the approach and land on the orange dot (located about 1,000 feet from the runway's displaced threshold) instead of the green dot. The pilot reported that he considered performing a go-around but decided to continue the approach. As the pilot reduced power, the airplane entered a stall and impacted the runway in a right-wing-low, nose-down attitude. Witnesses estimated that the bank angle before impact was greater than 60 degrees.

A post-accident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that

would have precluded normal operation.

Analysis of a video recording of the accident showed that the airplane was about 180 feet above ground level (agl) when the turn onto the base leg began, and it descended to about 140 feet agl during the turn. The airplane's total inertial speed (the calculated vector sums of the airplane's ground speeds and vertical speeds) decreased from 98 knots to 80 knots during the turn. During the last eigh seconds of flight, the speed decreased below 70 knots, and the airplane descended from about 130 feet agl to ground impact. The wings-level stall speed of the airplane at maximum gross weight with landing gear and flaps down was 59 knots. In the same configuration at 60 degrees of bank, the stall speed was 86 knots and would have been higher at a bank angle greater than 60 degrees.

Reduced runway separation standards for airplanes were in effect because of the airshow. When the accident airplane reached the runway threshold, the minimum distance required by the standards between the arriving accident airplane and the departing airplane was 1,500 feet. The video analysis indicated that it was likely that a minimum of 1,500 feet of separation was maintained during the accident sequence.

At such a low altitude, recovery from the stall was not possible. Although the airshow arrival procedures stated that pilots have the option to go around if necessary, and the pilot considered going around, he instead continued the unstable landing approach and lost control of the airplane.

Although the pilot was familiar with the procedures for flying into the airshow, the departing airplane and the modified landing clearance during a period of typically high workload likely interfered with the pilot's ability to adequately monitor his airspeed and altitude. As a result, the airplane entered an accelerated stall when the pilot turned the airplane at a steep bank angle and a low airspeed in an attempt to make the landing spot, which resulted in the airplane exceeding its critical angle of attack.

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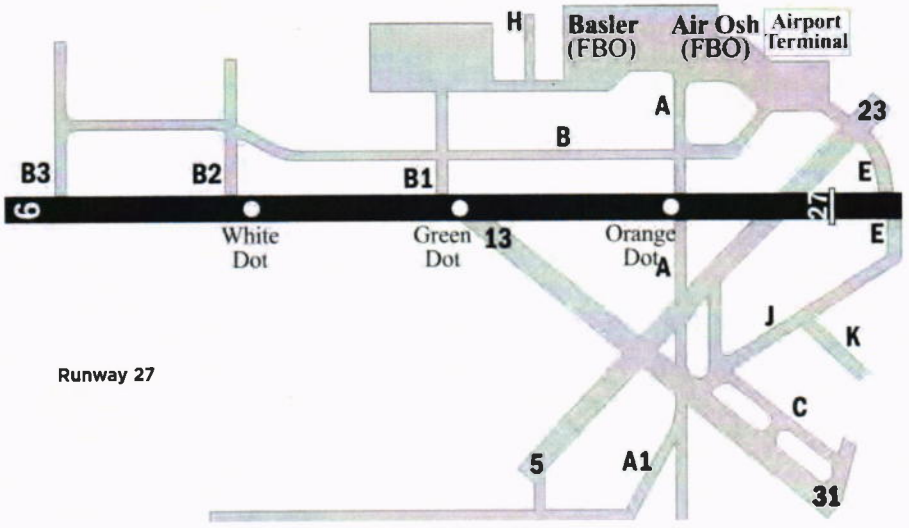
The National Transportation Safety Board determines the probable cause(s) of this accident as follows:

The pilot's failure to perform a go-around after receiving a modified-landing clearance and his failure to maintain adequate



airspeed while maneuvering to land, which resulted in the airplane exceeding its critical angle of attack in a steep bank and entering an accelerated stall at a low altitude.

AUTHOR'S COMMENTS:

Low-altitude stall/spin accidents are almost always fatal. They have been killing people on a regular basis since the beginning of aviation. I am thankful everyone survived this crash. Every year the stall/spin crash involves pilots of all ages and experience level and aircraft of all size and complexity. Often the reason is a distraction of some sort, a last-minute change in the clearance for example, which leads to an extended division of attention and a subsequent loss of focus on the most important task — flying the aircraft. No amount of additional information such as warning lights, buzzers, AOA indicators, etc. seem to help the pilot once the distraction is entrenched.

Sometimes it is combined with a confirmation bias which is nearly impossible to overcome. Gamblers call this "throwing good money after bad." Two lifesaving concepts leap out of the findings in the above report: "Pilot in Command" and "SOP."

First, when acting as pilot in command, have in mind at all times only two possible categories of ATC clearance or instruction — those things you prefer and those things you will accept. Everything else will therefore be "unable." Endeavor to encounter no surprises. Decide in advance which actions are preferred or acceptable and decline any clearance, which is not in one of the two aforementioned groups, no matter whom you have to disagree with. The PA-46 Standard Operating Procedures will definitely help you with this process.

Second, Standard Operating Procedures. I am not sure why, but SOPs are used widely everywhere in the industry except in Part 91 General Aviation operations. Maybe it's because most G.A. pilots fly simple aircraft. This may also explain why the PA-46 serious accident rate remains stubbornly high. In any five consecutive year period you care to study, you will find about twice as many fatalities in the PA-46 cohort, compared to the rest of General Aviation.

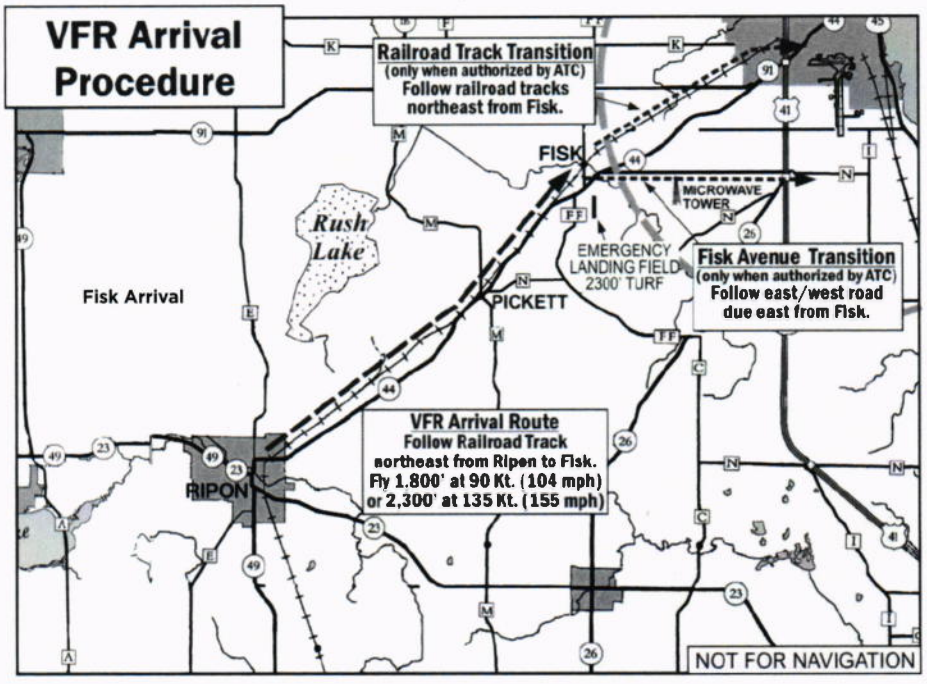
Standardizing on an SOP, which has been designed for crew operations is not the answer. It is just as frustrating and unproductive as none at all in a single-pilot G.A. cockpit. Other groups have dramatically lower accident rates with SOP and standardized training. They include Bonanza, Cirrus, Cape Air, the U.S. Hang Gliders Association, Professional Association of Dive Instructors, even the US Army-Air Force with the B24 back in 1946.

The PA-46 Standard Operating Procedures have been available in its current form for more than five years now. The PA-46 SOP is a well-vetted single-pilot SOP and, along with properly configured SP checklists, flows and memory items, it can be the basis for permanently reducing the number and severity of PA-46 accidents. Slowly but surely, the PA-46 community is beginning to understand this important concept.

The PA-46 SOP requires us to maintain 100 knots or better until all turns are completed. We know the aircraft is safe to fly slower speeds in a low-level turn, but we also know that slower speeds are not a good idea because noble distractions are everywhere within five miles of a busy airport. Here is what the AirVenture Oshkosh arrival NOTAM says: "Arrive at Ripon at 90 knots and 1,800 feet (or maximum cruising speed if less than 90 knots). If unable, 135 knots and 2,300 feet."

The Fisk arrival to OSH can be thought of as a circle to land maneuver. It is entirely safe for aircraft of any capabilities, but it is up to the PIC to make it so. I recommend the following pitch-power-configuration settings for the PA-46: Arrive at Fisk at 2300 feet and 120 knots with gear and 10 degrees of flaps extended per the NOTAM.

I know 28 inches MP/850 Tq will help me maintain 120 knots, and you can go faster if needed for safety (up to 135 knots per the NOTAM). One hundred twenty knots is well within the second notch of flaps speed and



gives the aircraft the energy needed for a safe go-around if required. Descending to the runway, reduce power to 20 inches MP/ 300 Tq and add a second notch of flaps. Pitching for the aim point and slowing into the white arc gives you the opportunity to introduce full flaps without distraction.

With the wings level, the runway clear and clearance received, slow to 90 knots over the threshold and 85 knots in the flare by bringing power smoothly to flight idle. When the power is at flight idle, put your right hand on the yoke to remind your brain of the decision it made a half second ago and, in the case of the Meridian, to allow the Beta lockout to properly disengage.

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Proper training based on these principles has been sorely needed for a long time. If you haven't already done so, get started. Ask your flight instructor to help you learn this "one best way." If you are a flight instructor, ask a senior master Instructor who is familiar with this concept to mentor you. It will help you be a safer, more confident pilot/ instructor. This very effective process doesn't cost any more or take any longer. MMOPA

Fly Safely - Train Often
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Master Instructor

Dick Rochfort is an FAA-rated Airline Transport Pilot and full-time PA-46 Master Certified Flight Instructor. He provides excellent training and consulting services worldwide to pilots and instructors of the Piper PA-46 aircraft; M350, M500, M600, Matrix, Malibu, Mirage and Meridian through his company RWR Pilot Training and the Professional Association of PA-46 Pilot Instructors of which he is a founding member. 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 or 410.435.3333 or visit his website at RWRPilotTraining.com. This article is available for reprint upon request.