Accident Review Spring 2014

Truckee, California • **BY DICK ROCHFORT**

NTSB Identification: WPR14FA127
14 CFR Part 91: General Aviation
Accident occurred Monday, March 03, 2014, in Truckee, Calif.
Aircraft: PIPER PA-46 350P, registration: N9281F
Injuries: One fatal, one serious.

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.

On March 3, 2014, at 1032 Pacific Standard Time, a Piper PA-46 350P, N9281F, collided with terrain approximately five miles east of the Truckee-Tahoe Airport, Truckee, Calif. The commercial pilot was seriously injured, and the single passenger was fatally injured. The airplane was registered to, and operated by, the commercial pilot under the provisions of 14 Code of Federal Regulations, Part 91. The airplane's left wing was separated from the fuselage, resulting in substantial damage to the airframe. Marginal visual flight rules conditions prevailed for the flight, which operated on an instrument flight rules flight plan. The flight originated at John Wayne-Orange County Airport, Santa Ana, Calif., at about 0800.

The pilot was in communications with Oakland Center while on the GPS-A approach into Truckee-Tahoe Airport. Upon completion of the instrument approach, the pilot executed a missed approach and proceeded to fly in an easterly direction, not consistent with the published missed-approach procedures. Oakland Center lost radar contact and radio communications with the airplane and pilot. The airplane wreckage was located about an hour later in the mountain range east of the airport at an elevation of 8,000 feet mean sea level.

The Truckee-Tahoe Airport Automated Weather Observation System (AWOS-3) reported at 0950 that the wind was from 180 degrees at 7 knots; visibility was nine statute miles; and an overcast cloud layer was at 3,000 feet above ground level. At 1050, the reported weather conditions were wind from 300 degrees at 5 knots; six miles visibility in light rain; and an overcast cloud layer at 2,200 feet agl.

The published minimum descent altitude for the Truckee-Tahoe GPS-A approach is 8,200 feet mean sea level (2,300 feet agl).

TALKING POINTS:

There are two aspects to every procedure no matter how simple or complicated it may seem. First, the pilot must be aware of the aircraft's position at all times. This task should be simpler in the glass-panel cockpit but evidence suggests otherwise. Second, the pilot must know the one best way to make the aircraft go where it is supposed to go with or without the autopilot. It could be said that this second aspect is the bandwidth hog, but the truth is, both can chew up significant bandwidth creating a ripe environment for errors of omission.

Bandwidth management is the ability to not allow distractions to interfere with time-critical task completion. This is not

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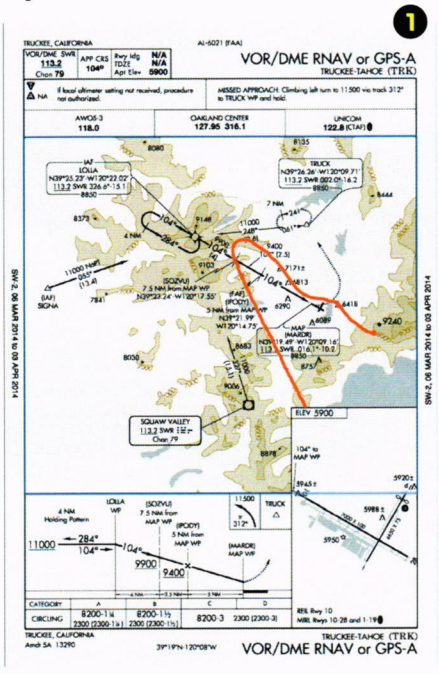
a problem to be solved; it is a condition to be managed. I encourage each pilot to seek the one best way to accomplish these tasks by operating the same way each and every time, using a well-vetted set of checklists, flows, memory items and SOP (standard operating experience).



The red line in Figure 1 represents the Flight Aware radar track superimposed over the GPS-A at Truckee Airport. As of this writing, we don't know what clearance was received, and the track is only an approximation, but it suggests that a non-standard procedure turn was flown and that the missed approach was not flown in a timely manner or in the correct direction.

Staying on the thick black line of the procedure is arguably the most important critical task. One common error which can cause confusion leading to this type of accident is a failure of the GPS to automatically sequence during the approach. This subtle but entirely predictable event can lead to a major loss of situational awareness and/or a serious distraction.

Forva variety of reasons, Garmin will not sequence when expected, and the logic of this behavior is consistent throughout the GPS Navigator community. The give-away is the green "SUSP" above the OBS button (fig-2).

"SUSP" (suspend in "Garminology") means that sequencing will not occur; therefore tapping the button will initiate a manual sequence. The remedy is be vigilant for the occurrence of a failure to sequence and to simply tap the OBS button to remove the "Suspend" feature or to reactivate the correct leg of the approach, using the time-honored "direct-direct-enter" sequence. If Garmin sees the aircraft in the correct location, auto sequencing will resume. Note that the current aircraft location in this case (fig-2) is over IPODY, five miles outside of MARDR. It is easy to get busy, get distracted and miss the "SUSP" annunciator at this point because IPODY is the final approach fix and, typically, gear and flaps are introduced here with a power reduction and possible a desire to talk on the radio.

Note also the importance of having cumulative distance (CUM as opposed to DIS) displayed on the flight plan page so there is no confusion about total distance from a particular fix.

While it is well understood that too much information can be a bad thing, it is also true that not enough information can be worse. Note that the map page in Figure 3 shows the aircraft five and a quarter miles past MARDR. MARDR is the Missed Approach point. The best way to maintain situational awareness is to use the No. 1 navigator in Map mode (Figure 3) and the No. 2 navigator on the flight plan page with a CUM distance displayed. Both units should be set to auto cross-fill to ensure that both units are giving proper information.

The Flight plan page in Figure 4 is very misleading if the pilot is not trained to "see" the subtle hint: Garmin is not sequencing. The aircraft in this simulation is significantly past the missed approach point.

The best way to consistently get it right is to use a "flow." By definition, a flow is a series of actions, which must be considered by the pilot — not a checklist of tasks to be completed. The flow must be well-vetted to be appropriate in every approach scenario. I recommend a six-step flow followed by three questions:

1 – Activate (the approach correctly on Garmin): There are essentially three ways to accomplish this, depending on the circumstances.

2 - Flip the correct VOR/LOC frequency into the active frequency box on both VHF Nav radios (obviously not necessary on and RNAV or GPS approach except for crossing radials and backup information).

3 - Flop to verify that the CDI (course deviation indicator) is set to the proper source (VLOC or GPS as needed).

4 - Set the course on the HSI or verify that it is set if you have an EHSI (electronic horizontal situation indicator).

5 – ID the approach using the briefing strip on the approach plate and the blue banner on the Garmin navigator.

6 – Arm the approach on the autopilot.

Then immediately ask yourself three questions:

Which way? Which way should I be going and is the autopilot making the aircraft go where I want it to go?

How low? What altitude should I be at and is the autopilot correctly configured to make that happen?

What's next? How long until the next step-down, turn or decision point?

Resist the temptation to simply recite what you expect to happen. The answer to the three questions lies on the panel in the approach setup. Look at the relevant information on the panel to confirm everything is set correctly. Study this procedure in training until you have a setup that will instantly answer these questions in every scenario with little or no button pushing. The expected outcome can only occur consistently if you insist on the procedural discipline to operate the same way each and every time.

This video is also hosted on my website at RWRPilotTraining.com in the Pilot Reference Library under IFR Operations. Figure 5 illustrates the guidance provided by Garmin after the OBS button is tapped to remove the SUSP annunciator.

Knowing the location of a proper visual descent point (VDP) will definitely help you find the runway or know in a timely fashion when a circle or a missed approach is likely. I compute the VDP using a ratio of 300 feet per nautical mile; that is, for every 300 feet I am above the threshold, I know I will need one mile to effect a normal 3-degree descent. (Pythagoras knew that and he wasn't even a pilot!) As an example, many non-precision approaches bring us to 600 feet AGL. An MDH of 600 feet tells me that if I don't see the runway from two miles away, I may be in for a circle or a missed approach. This very concept renders a straight-in, one-mile visibility minimum useless is most cases.

The Truckee-Tahoe GPS-A approach requires a rate of over 1,000 feet per nautical mile to get to the minimum descent altitude (MDA) by the VDP. This rate of descent is not recommended, and the fact that there is no published straight-in minimum is a huge hint. You should be looking for the runway at the VDP, not the MDA or the MAP. Looking for the runway in front of you when you get to MDA is probably a bad idea because it's most likely underneath the aircraft.

Since pilots are all human, we can only do one thing at a time. Excellent pilots do exactly the right thing at the right time and in the correct sequence, utilizing the least amount of bandwidth. Experience makes this easier, but this is only true when you have had excellent experience. Excellent experience is derived from excellent training. This compelling concept is most important to the pilots who fly the least. So if you are flying fewer than 200 hours a year, get busy.

Consider training twice per year and ask your instructor to help you construct a set of checklists, flows and memory items, which will guide you through each phase of flight, including the approach. Use these items the same way each and every time. Have and use well-vetted Standard Operating Procedures. It is within the SOP that you will find a fast and accurate way to improve your aeronautical decision-making.

Good pilots are not thrill-seeking risk-takers. Good pilots are well-trained risk managers who endeavor to possess ATP-level skills and knowledge. Always strive to improve your risk-management capabilities by insisting on excellent training. Excellent training does not cost any more or take any longer, and excellent training can help prevent accidents. Change is difficult, but when you commit to this process you will become a safer, more confident pilot. You owe it to yourself, your family, and the entire General Aviation community. MMOPA

Dick Rochfort is an Airline Transport Pilot and Master Certified Flight Instructor and has been a full-time flight instructor for more than 20 years. He provides excellent training and related services exclusively to PA-46 instructors, owners and pilots worldwide through his company, RWR Pilot Training and the Professional Association of Pilot Instructors of which he is a founding member. Contact Dick directly at mail@rwrpilottraining.com. Additional information on this and other important topics is available at the PA-46 Pilot Reference Library at RWRPilotTraining.com This article is available for reprint upon request. Fly Safely – Train Often