

GENERAL AVIATION IS PART OF THE PROBLEM

Not only is inadequate general aviation training a thorn in the side of the airlines, it affects general aviation safety itself. Most readers of this publication are probably familiar with my assertion that the failure of the general aviation training system to emphasize higher order pilot skills, such as automation management and especially risk management, is a major reason the fatal accident rate has stopped decreasing. In contrast, most people in the community thought that the advent of technically advanced aircraft, glass cockpits, weather data link and other technologies would lower the accident rate.

In 2003, when I was FAA's lead general aviation executive, I co-chaired an FAA/industry study of TAA safety that found the new technologies increased "available" safety, but that this safety performance would not be realized unless it was accompanied by better training. The study remains on the FAA's Web site, in PDF form, at tinyurl.com/avsafe-taa.

Since then, the NTSB also has weighed in on this subject. In a study completed in 2010, the Board found the fatal accident rate of recently introduced TAA was worse than that of legacy general aviation aircraft with conventional instrumentation (i.e., "steam gauges"). The NTSB report noted deficiencies in FAA training and testing standards, among other issues. A May 2010 article in this magazine dissected the NTSB's study, which also is available as a PDF on the agency's Web site, at tinyurl.com/avsafe-taa2.

I stand by the results of the 2003 study and believe that with adequate training in higher order pilot skills such as automation management and risk management, that advanced cockpit automation can improve general aviation safety. The improvements in SA enabled by automation, the hazard detection and avoidance capabilities, and the reduction in pilot workload once a pilot is trained and familiar with the automation all can have a huge impact on general aviation safety.

Appendix E: Sample Root Cause and HFACS Analysis

Root Cause and HFACS Analysis: Sierra Vista
April 28, 2003

Key Fact Summary:

- Pilot: PPL, AGEL, MFR, 1450 TT, 116+ MM, based in Island Wisconsin. No evidence of mountain flying training or previous experience.
- Aircraft: SR 20, no WX DL, GPS moving map, ARNAV MFD w/ Terrain Data, no Red Ice, obstruction, turbulence, rain, snow, alert.
- Environment: Flying in mountains in AZ, NM, at freezing level, gusty, mountain.
- Duration: Planned 2-25 hours, 210 nm. Actual 30 minutes, 52 nm.
- Urgency: Lately high: Evidence: passengers needed to be home to receive an event; departed at 6:30 PM with nightfall at 6:53, through the mountains in bad weather.

Interview - Evidence Summary

Interview	Evidence
Pilot may not be experienced in mountain flying.	Based in Wisconsin, visiting relatives in Tucson. Narrative statement.
Pilot used poor judgment in leaving at dusk.	Pilot under pressure to leave that day. Passenger needed to be back home to receive an award.
Pilot may be uncomfortable with large airports and ATIS.	Destination is Albuquerque, rather than ABO, 30 nm to north. Pilot does not request flight following.
Pilot is not very concerned with the weather, and not aware of the risk involved.	Initial DUATS briefings show good weather and in Tucson, weather remains until 8:15 in the 9 hours prior to the flight, old weather forecast in all time zone.

A TECHNICALLY ADVANCED AIRCRAFT (TAA) IS ONE EQUIPPED WITH AT LEAST A MOVING-MAP DISPLAY, AN IFR-APPROVED GPS NAVIGATOR AND AN AUTOPILOT.

Introduction of Glass Cockpit Avionics into Light Aircraft



Safety Study

NTSB/SS-01/10

PB2010-017001



National
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