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Cruise Control:

Avoiding VFR into IMC

It's not a perfect weather day—those are truly rare—but conditions are comfortably above both legal and personal minimums for the VFR cross-country flight you and a friend are making to visit her family in another state. The weather at your destination is currently reported as IFR but forecast to improve to VFR an hour before your estimated time of arrival. You climb to altitude, trim for cruise flight, and settle in for a casual catch-up conversation with your passenger. Because you are expecting VFR conditions, you are not initially troubled by the decreasing visibility. To the extent you even notice, you dismiss it as the haze typical for this time of year.

As the flight continues, you begin to develop that queasy and uneasy feeling that something is not quite right. Not wishing to alarm (or disappoint) your passenger, you keep talking and you keep flying even though you are now consciously straining to see through the haze.

Photo by Adrian Eichhorn

Then you notice that the engine sounds different. A glance at the instrument panel puts you in a state of shock and bewilderment: Your senses say you are still in steady straight-and-level flight, but the instruments and the engine noise insist that the airplane is now in a diving turn to the left. Confused, you freeze. This cruise is now out of control. As for what happens next...?

The Myth of Missing Information

If any part of this story strikes a chord of recognition, you are among the lucky ones. VFR flight into instrument meteorological conditions (IMC) is one of the leading causes of fatal GA accidents. Of the 21 such accidents included in the AOPA Air Safety Institute's 2009 Nall Report, 18 were fatal. And, sadly, the problem is not new. A review of 1999-2008 NTSB accident files shows 160 VFR-into-IMC accidents (Fig. 1). Of these, 139 were fatal, resulting in 276 deaths.

The persistence of this deadly problem accounts for its selection as one of the four focus areas for this year's FAASafety Standdown. We will talk about tips for keeping yourself out of the Nall and NTSB statistics, but first let us dispose of the commonly-held notion that VFR-into-IMC accidents will vanish if pilots *just* have that one missing piece of information or training.

Pilots Just Need Better, More Timely Weather Information

There is no question that pilots need quality weather data to avoid VFR-into-IMC, but it is not enough to just get a weather briefing. In more than 50 percent of the VFR-into-IMC accidents we found in the NTSB files, the pilot *did* get a weather briefing. The real question is what the pilot did *with* the weather briefing. Did he or she understand its implications? Or, as humans so often do, did the pilot let wishful thinking cloud his or her judgment?

Many of us turn to technology as the solution to our weather woes. If only we had more timely information, we say, we could see and avoid bad weather. In that respect, weather data link seems like a silver bullet solution. Reality is more complicated. Among other things, the kind of weather that data link is most likely to see is not necessarily the same kind of weather that baits the VFR-into-IMC trap. If we are flying VFR, most of us know not to plow into convective clouds of the sort we can easily see with our eyes as well as via data link. Weather avoidance technology is far less able to detect conditions such

as haze that is thick enough to create IFR conditions.

Pilots Just Need More Training

Training certainly helps; in fact, we called it "The Cheapest Insurance" in a March/April 2008 *FAA Safety Briefing* article (<http://go.usa.gov/rju>).

Still, the facts show that acquisition of an instrument rating does not coat the pilot in protective Teflon®. In

nearly half (47 percent) of the VFR-into-IMC accidents we reviewed in the NTSB data, the pilot was instrument rated.

Ah, you say, that is not enough. Was the pilot both legally current and instrument proficient? Good questions—and you are correct in noting that a competent instrument pilot needs all three characteristics. Being instrument-rated and current are both legally necessary, and both are intended to promote proficiency. Regular practice of correct techniques promotes and preserves proficiency.

We do not know for certain whether some of the instrument-rated VFR-into-IMC accident pilots were both legally current and genuinely proficient.

VFR flight into instrument meteorological conditions (IMC) is still one of the leading causes of fatal GA accidents.



Photo by Susan Parson

VFR-into-IMC accidents, 1999-2008

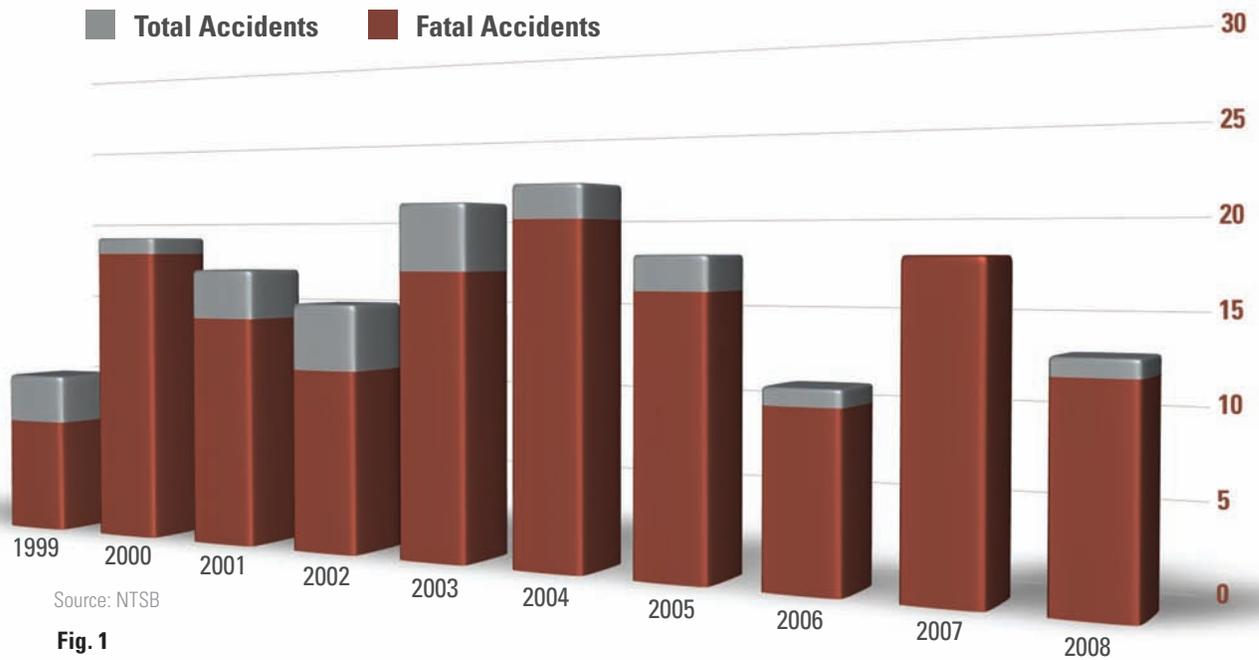


Fig. 1

But even if they were, those characteristics may not have been enough to keep them out of trouble. An instrument-rated pilot who files an IFR flight plan and expects to fly in the clouds initiates

and conducts the flight with that expectation and thus with the behaviors appropriate to IFR flight.

On the other hand, an instrument-rated pilot who plans and expects a VFR flight may be as surprised as a non-IFR rated pilot if there is an inadvertent encounter with IMC.

Be mindful of how deceptive gradual changes can be.

What You Can Do

Pay attention. As the opening scenario illustrates, complacency can kill. Look around and make sure you actually *see* when you look outside. Be mindful of how deceptive gradual changes can be. If you get the queasy, something-is-not-right feeling, pay heed and figure out why you feel that way.

Use personal minimums. Legal minimums may not match up with your personal capabilities and comfort level. Check out “Getting the Maximum from Personal Minimums” (*FAA Safety Briefing*, May/June 2006 at <http://go.usa.gov/rSP>) for step-by-step guidance on developing individual personal minimums tailored to your specific level of training, experience, and skill. Once you establish personal minimums, stick to them.

Ask questions. Ask yourself a constant stream of questions: Is the weather I actually see better or worse than forecast? Are conditions better

or worse than I expected them to be? Do I see trends toward improvement or deterioration? This technique will help you maintain awareness of gradual changes that can otherwise lure you toward a VFR-into-IMC situation.

Act on the facts. Avoid assumptions. If you find yourself using the word “probably” in connection with any part of your flight (“we can probably keep going...”), it is *definitely* time to refocus on facts.

Think like a pro. Follow these tips, and take your PIC responsibilities to heart. ✈️

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For More Information

FAA General Aviation Pilot's Weather Guide

www.hf.faa.gov/WeatherDecisionGuide/default.aspx

AOPA's Weather Wise: Ceiling and Visibility and Accident Case Study: VFR into IMC online courses

Log into AOPA Online Interactive Safety Courses at www.aopa.org/asf/online_courses/

FAA's Risk Management Handbook, Chapter 8: Risk Management Training

www.faasafety.gov/files/gslac/courses/content/62/740/FAA-H-8083-2.pdf

FAA Safety Briefing issue on weather, July/Aug. 2010

www.faa.gov/news/safety_briefing/2010/media/julaug2010.pdf