Alaskan Aviation Safety Foundation—Oct 2014

Doing It Right in 2014

Chairman's Corner:

Greetings as we move into the darker and more weather ridden times of the flying year. Our theme for 2014 remains Doing it Right, and this issue will focus on an enduring factor in aviation safety—flight from Visual Meteorological Conditions (VMC) into Instrument Meteorological Conditions (IMC)

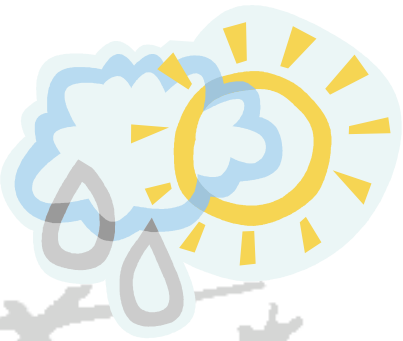
We welcome John Mahany with our lead discussion and thank him again for his continued support of Alaskan Aviation Safety Foundation news letters.

This quarter's edition is slightly longer, as we included an article from AOPA—discussing a well known and discussed accident from the past. It could easily have happened recently and we trust reading it again (or the first time) may assist you in making the correct decision and Doing it Right.

As a reminder, our fall flying safety seminar will be in the Assembly Chambers in the Loussac Library on November 15. Sign in starts at 8:00. Program is 8:30 to 4:00pm. Lunch will be available. Hope to see you there.

Harry

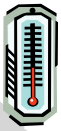
VFR into IMC Conditions



Did you know that the leading cause of General Aviation weather-related accidents are those resulting from VFR into IMC; continuing into areas of low ceilings and poor visibility? According to the AOPA Air Safety Institute (ASI), VFR into IMC accidents alone account for more accidents than from these other weather phenomena: thunderstorms, turbulence or icing. VFR into IMC is seventh on the list of the FAA's Top 10 leading causes of GA accidents.
http://www.faa.gov/news/fact_sheets/news_story.cfm

VFR into IMC is also known as 'scud-running'; attempting to fly below the lower scud layers of cloud, generally while simultaneously encountering areas of deteriorating inflight visibility. This is not a good combination, as you severely limit your options. This can easily result in a CFIT (Controlled Flight Into Terrain) accident. One has to work to maintain good situation awareness under these conditions.

One key to avoiding this is to have a good understanding of weather, and weather patterns, especially the weather for a particular route and time of year, or seasonality.
One learns to watch both the temperature and dew point. The closer the 'spread', between the two, say between 0 – 3C, the better are the chances of clouds forming, resulting in lower ceilings and visibility. This true in the morning and the evenings when the air is typically cooler and the moisture content is higher.



During the heat of the day this will not be an issue unless there is frontal activity which generally pumps more moisture into the atmosphere. Be especially alert for the possibility of advection or radiation fog forming. Radiation fog will typically burn off in the early morning hours, unless there are higher cloud layers above.

With higher moister content in the air, ground (radiation) fog inland, or coastal (advection) fog can form very quickly and the weather can go from good VFR to IMC in a matter of minutes, often surprising aviators and catching many off guard. Suddenly you will wish you had more fuel onboard so that you would have more options.

With many pilots now having smartphones and tablets, and with more aviation-specific apps, and websites, you have more powerful tools at your disposal for getting weather information. These also give weather graphics. Keep in mind it is also important to be familiar with local weather patterns and nuances, something that local pilots would be knowledgeable about.

For a variety of reasons, some pilots simply have a sense of invulnerability, and foolishly think that nothing will happen to them. They will press on in the face of marginal conditions overly confident in their piloting skills, fooling only themselves. They might be tempted to just 'try' to see if they can make it. This will inevitably get them in trouble. Thus, they might be in a state of denial when conditions begin to deteriorate rapidly, dictating a change in plans, and they are not in the right state of mind to properly deal with this by turning back. They foolishly press on and become a statistic instead.

So, how to avoid VFR into IMC? First, if you have an auto-pilot, and know how to use it, turn it on! Second, when the auto-pilot is turned on, make a 180 degree turn back away from the scud into better weather conditions. Third, consider the terrain and climb or descend as appropriate into clear air conditions based on cloud bases and tops where you are. If you are not instrument rated, or are not IFR current and proficient, avoid marginal conditions and don't be tempted by this. Stay in the clear.

Fly safely!

John Mahany

The day the music died

Bruce Landsberg is executive director of the AOPA Air Safety Foundation.

Some accidents are burned into memory even decades after they happened. The sinking of the Titanic, the explosion of the Hindenburg, the accident at Tenerife, and the Challenger crash all bring back remembrances of unforgettable tragedies. "The day the music died," wrote singer/songwriter Don McLean for his hit song, American Pie, in 1971 commemorated the loss of singer Buddy Holly in an aircraft accident. Charles Hardin Holley, better known as Buddy Holly, was and remains one of the giants in the music business. His may be the most-discussed pop music star aircraft accident in history. The impact on the music world and millions of fans still affects the public perception of general aviation two generations of pilots later. His life and death inspired numerous books, movies, and songs.

To say Holly was a star is an understatement. He has been described as, the single most influential creative force in early rock and roll. His style has influenced countless musicians, including The Beatles, The Rolling Stones, and Bob Dylan. He exerted such a profound impact on popular music that Rolling Stone magazine ranked Holly number 13 on its list of the 100 greatest artists of all time.

He was only 22 at the time of his death, and yet his songwriting was so prolific that new albums and singles were released years after his passing. The story of his accident and others like it has been written many times—the outcomes don't change.

In the early morning of February 3, 1959, Holly and two other rising stars, Ritchie Valens and J.P. Richardson (the Big Bopper), who were touring the country, had just finished a gig in Clear Lake, Iowa. They were scheduled to appear in Moorhead, Minnesota, that night but, because of bus trouble, the show headliners decided to go on to Moorhead by air. The group chartered a Beech Bonanza at the Mason City, Iowa, airport to fly to Fargo, the nearest airport to Moorhead.

The Civil Aeronautics Board (CAB), predecessor to the FAA and the NTSB, investigated the accident and the factual information is derived from the report.

WEATHER AND PREFLIGHT—THINK IT OVER

Around 5:30 p.m. Central Standard Time the charter pilot went to the Air Traffic Communications Station (ATCS—the equivalent of today's Flight Service Station and Air Route Traffic Control Center) at the airport administration building, to brief the flight. He was provided current weather for Mason City, Minneapolis; Redwood Falls; Alexandria, Minnesota; and the terminal forecast for Fargo, North Dakota. The briefer advised that all stations reported ceilings of 5,000 feet or better and visibility of 10 miles or above. However, the Fargo terminal forecast indicated the possibility of light snow showers after 2 a.m. and a cold frontal passage about 4 a.m. It all seemed reasonable for a VFR flight.

At 10 p.m. and again at 11:30 p.m. the pilot called ATCS to update weather. All stations had ceilings of 4,200 feet or better with visibility still 10 miles or greater. It was snowing in Minneapolis and the cold front that was previously forecast to pass Fargo at 4 a.m. was now expected to arrive at 2 a.m. At Mason City the ceiling was 6,000 overcast; visibility 15 miles plus; temperature 15 degrees F; dew point 8 degrees; wind south 25 to 32 knots; altimeter setting 29.96 inches.

At 11:55 p.m., the pilot, accompanied by the FBO/charter aircraft owner, a commercial/instrument-rated pilot, again went to ATCS for the latest weather update. With such important passengers on board one couldn't be too careful. In the half-hour since the pilot had last checked, Mason City was now 5,000 overcast in light snow and the altimeter had dropped to 29.90. The weather was moving.

THE FLIGHT—PEGGY SUE

Holly, Richardson, and Valens arrived at the airport about 12:40 a.m., after the show, stowed their baggage, and boarded the aircraft. Although not noted in the CAB's report, I speculate the weight and/or balance might have been outside the limits with any kind of fuel load. That would have made the V35 a handful in the turbulence the flight would later encounter.

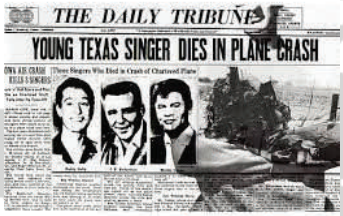
The pilot stated he would file his VFR flight plan by radio when airborne. Taxiing to the end of Runway 17, the pilot called ATCS for a weather update. En route reports had not changed materially, but Mason City was coming down rapidly: The ceiling was now 3,000, sky obscured; visibility 6 miles, light snow; wind south 20 knots, gusts to 30 knots; altimeter setting 29.85 inches. The front had arrived.

The Bonanza was airborne at 12:55 a.m. and observed to make a left 180-degree turn and climb to approximately 800 feet. It passed east of the airport and turned northwesterly. Throughout most of the flight the aircraft's tail light was visible to the FBO/charter aircraft owner. About five miles from the airport the light gradually descended and disappeared. When the pilot failed to open his flight plan by radio soon after takeoff, the communicator (controller), at the owner's request, repeatedly tried to reach him but was unsuccessful. It was approximately 1 a.m.

THE ACCIDENT—IT DOESN'T MATTER ANYMORE

After reporting that the aircraft was missing at 3:30 a.m., the FBO/charter aircraft owner flew the aircraft's planned route later that morning. He sighted the aircraft in an open field at 9:35 a.m. All four occupants had been killed, and the aircraft was demolished. The wreckage was covered with about four inches of snow. It's a given, even today, that accident investigations are usually done in decent weather, half a day later. Note to self—be a little patient with weather, it will get better. Had the group left at 10 that morning, they still would have arrived in plenty of time for the show.

The Bonanza struck the ground in a steep right bank, nose-low attitude at high speed. There was no fire and no evidence of structural or flight control failure. The landing gear was retracted and the engine was producing cruise power at the time of impact. The attitude indicator showed a 90 -degree right bank, nose-down attitude. The vertical speed indicator was pegged at a 3,000-feet-per-minute descent.


THE DAILY TRIBUNE

YOUNG TEXAS SINGER DIES IN PLANE CRASH

PILOT—MAYBE, BABY

The pilot, 21 years old, was employed by the FBO as a commercial pilot and flight instructor, and had been with them about a year. He had started flying in October 1954, with 711 hours total time and 128 in Bonanza. He had approximately 52 hours of dual instrument training and had passed the instrument written examination, but he had failed an instrument flight check in March 1958, nine months prior to the accident. His instrument training had been in several aircraft, all equipped with a conventional artificial horizon, but he had no experience with the Sperry attitude gyro that was installed in Bonanza N3794N. These two instruments differ greatly in their pictorial display, and the CAB believed that he would have had difficulty interpreting a completely different display.

THE AIRCRAFT—RAVE ON

The Beech Bonanza, model 35, was manufactured in October 1947 and the engine had only 40 hours since major overhaul. The aircraft was purchased by the FBO in July 1958, and was well equipped for its time with high- and low-frequency radios, a Narco "omnigator" (VOR), a Lear autopilot (recently installed but not operable), and a full panel of instruments used for instrument flying, including a Sperry F3 attitude gyro.

According to the CAB's report, "The conventional artificial horizon provides a direct reading indication of the bank and pitch attitude of the aircraft which is accurately indicated by a miniature aircraft pictorially displayed against a horizon bar and as if observed from the rear. The Sperry F3 gyro also provides a direct reading indication of the bank and pitch attitude of the aircraft, but its pictorial presentation is achieved by using a stabilized sphere whose free-floating movements behind a miniature aircraft presents pitch information with a sensing exactly opposite from that depicted by the conventional artificial horizon."

THE WEATHER, AGAIN—TAKE YOUR TIME

The weather was quite a bit nastier than the briefed surface reports indicated. The surface weather chart for midnight February 3, 1959, showed a cold front extending from northwestern Minnesota through central Nebraska with a secondary cold front through North Dakota. Widespread snow shower activity was indicated in advance of these fronts. Temperatures aloft from Mason City to Fargo were below freezing at all levels with an inversion between 3,000 and 4,000 feet and abundant moisture present at all levels through 12,000 feet. Moderate to heavy icing and precipitation existed in the clouds along the route. Winds aloft below 10,000 feet were reported to be southwest at 30 to 50 knots.

A flash advisory (roughly equivalent to a sigmet) issued by the Weather Bureau at Minneapolis at 11:35 p.m. on February 2, noted, "Flash Advisory No. 5: A band of snow about 100 miles wide at 2335 from extreme northwestern Minnesota, northern North Dakota through Bismarck and south-southwestward through Black Hills of South Dakota with visibility generally below two miles in snow. This area or band moving southeastward about 25 knots. Cold front at 2335 from vicinity Winnipeg through Minot, Williston, moving southeastward 25 to 30 knots with surface winds following front north-northwest with 25 to gusts of 45. Valid until 0335."

Another flash advisory issued out of Kansas City, Missouri, at 12:15 a.m. on February 3 noted: "Over eastern half of Kansas, ceilings are locally below one thousand feet, visibilities locally two miles or less in freezing drizzle, light snow, and fog. Moderate to locally heavy icing, areas of freezing drizzle and locally moderate icing in clouds below 10,000 feet over eastern portion Nebraska, Kansas, northwest Missouri and most of Iowa. Valid until 0515."

Neither ATCS briefer mentioned these flash advisories to the pilot indicating the virtual certainty that instrument weather would be encountered.

ANALYSIS—RAINING IN MY HEART

The CAB report noted that the flash advisories were not conveyed to the pilot. The weather briefing consisted solely of reading current weather at en route terminal and terminal forecasts for the destination. Failure to "draw these advisories to the attention of the pilot and to emphasize their importance could readily lead the pilot to underestimate the severity of the weather situation."

The FBO owner said, he "had confidence in the pilot and relied entirely on his operational judgment with respect to the planning and conduct of the flight." That confidence was sadly misplaced. It happens too often that enthusiasm and a strong desire to complete a flight overcome what little experience/judgment a new pilot has. Sincerity, enthusiasm, and desire to please should never take a back seat to suspicious, skeptical contingency planning.

The CAB noted that with the obviously deteriorating weather at Mason City which could be seen by all, and the fact that the charter company was "certificated to fly in visual flight rules only…together with the pilot's unproved ability to fly by instruments, made the decision to go…most imprudent." That the pilot checked the weather so many times and that the owner went with him and then watched the flight depart shows that both of them probably had some serious misgivings. Note to self: Listen to that inner voice—it's usually right!

The CAB's assessment was that shortly after takeoff the flight entered complete darkness with no horizon, falling snow, and moderate turbulence from the high winds. This required flight by reference to instruments.

The pilot's unfamiliarity with the Sperry F3 gyro, noted above, because of its unique presentation, likely caused spatial disorientation.

PROBABLE CAUSE—NOT FADE AWAY

"The board determines that the probable cause of this accident was the pilot's unwise decision to embark on a flight which would necessitate flying solely by instruments when he was not properly certificated or qualified to do so. Contributing factors were serious deficiencies in the weather briefing, and the pilot's unfamiliarity with the instrument which determines the attitude of the aircraft."

This report could have been written last month, but it was a half-century ago. If the weather is bad where you are, despite a decent forecast, the weather is bad. Period. The board's commentary: "This accident, like so many before it, was caused by the pilot's decision to undertake a flight in which the likelihood of encountering instrument conditions existed, in the mistaken belief that he could cope with en route instrument weather conditions, without having the necessary familiarization with the instruments in the aircraft and without being properly certificated to fly solely by instruments."

We may be the only beings who can learn from past mistakes and so often fail to do so. The lesson should not fade away.

From AOPA's web site/archives

Quarterly Events

October 2-17: Red Flag Alaska 15-1
October 8: FAA Industry Council
October 21: Anchorage Users' Meeting, Maintenance Complex, 5740 DeHavilland Ave, 0945-1200
November 7: AACA 2014 Legends and Medallion Awards Banquet, Marriott Hotel, Anchorage
November 12: AACC
November 15: Fall Aviation Safety Seminar: "VMC into IMC" Assembly Chambers in the Loussac Library for the Alaskan Aviation Safety Foundation's annual Fall Safety Seminar. featuring Dr. Bill Rhodes and Professor Dale Wilson, experts in preventing inadvertent flight VFR into IMC. Lunch will be available. Contact us with any questions at aasfonline@gmail.com or (907) 243-7237 .
November 18: ACMAC, 1000-1200
December 10: FAA Industry Council