ALASKAN AVIATION SAFETY FOUNDATION

July 2015

K2 Aviation & Rust's Flying Service all ready to go!
photo courtesy Jeff Babcock

What does the safety foundation mean to you?

By Harry Kieling, Chairman

Normally for the summer newsletter I would focus on seasonal threats to us and lessons learned from recent accidents. Or discuss recent safety equipment, or like subjects. But this time I want to talk about something very basic and that is our Foundation. Why are you a member? Why are any of us members? Why do members like you serve on the Board? Why do you go to our Safety Seminars?

Maybe after we answer some of those questions we could ask the flip side. Why aren't more pilots, mechanics, and ops people members? Why don't all of you come to the seminars? But let's start with the first questions. Why are you a member?

Is it because you feel the Foundation makes some good contributions to our aviation way of life? Things like this newsletter, our twice weekly "Hangar Flying", the three aviation scholarships we award each year (each valued at $1500), our two safety seminars we give each year in the Anchorage area, or our advocacy and support for aviation issues? All good reasons to be a member.

Is it because you knew Tom and Ginny and want to see their work continue?

Is it because you had a close friend or family member suffer or die because of an aviation accident and you don't want to see anyone else go through the same agony?

Maybe it is all of these.

Maybe it is that you truly love flying, want to be better and safer at it. Maybe you really endorse and embrace the safety mindset.

OK. Where do we go from here? Do you **always** embrace the safety mindset? Or do you sometimes fudge a little bit? Do you listen to and embrace all of the best practices or only

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Higher Standards Will Help Reduce General Aviation Accidents

by John Mahany

Currently, the number one threat to aviation safety for General Aviation is Loss of Control, In Flight (LOC-I) accidents. According to the NTSB's website, over a ten-year period, between 2001 and 2011, more than 40% of fixed wing GA fatal accidents occurred because pilots lost control of their airplanes. This includes low-altitude maneuvering flight.

Many of these fatal accidents are not due to mechanical failures but are instead typically pilot-related, frequently the result of poor decision-making by pilots, (or lack of aeronautical decision-making) and continued VFR into IMC. There is nothing new here, except that pilots continue making the same mistakes, over and over. They are not learning from the mistakes of others.

Among the contributing factors to LOC-I accidents might be something as basic as the fact that for many GA pilots, who typically operate under FAR 91, the proficiency requirements are not as demanding as they are for pilots operating under FAR 135 (air taxi/charter) and FAR 121 (air carrier) pilots. Even the FAA WINGS Pilot Proficiency Program, which was re-invented in May 2007, only provides an incentive to maintain proficiency. Participation is not required.

Significant changes were made to the FAA WINGS Program in 2009 and again in 2010, but participation nationally is still very low. The idea behind the WINGS Program is to make it easier for pilots operating under FAR 91 to maintain currency and proficiency through regularly attending WINGS sponsored seminars, as well as online seminars, and regular flight training with a competent instructor. The flight credits are based on proficiency, not flight time, so if a pilot is proficient he or she will be able to complete the maneuvers in less time and save money. Participation in WINGS also waives the Flight Review requirement.

Airline and charter pilots undergo regular training and checking, typically every 6 months for captains, and every 12 months for first officers. Also, most FAR 135 and FAR 121 operators expect and demand that their pilots maintain a higher level of proficiency, typically at least meeting, if not exceeding the ATP PTS. And these pilots are also subject to unannounced 'line checks' (en route inspections) by both the FAA and Company Line Check Pilots, to ensure that they are following company standard operating procedures and flying "by the book". This provides a strong incentive to pilots flying for these operators to keep their piloting and ADM skills sharp, if they want to keep their jobs.

Many general aviation pilots could benefit and become better, safer pilots if they considered adopting some of these standard FAR 135 and 121 practices. They would bring a more professional attitude and approach to their flying, including their decision-making process.

Fly Safe!

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some of the ideas, suggestions, and techniques that are discussed on Hangar Flying or in the newsletter or at our safety seminars? Do you really try and incorporate them into your own personal flying?

We exist so that you can fly safer. Some of you may not know this, but we are completely member supported. We don't have any state or federal funding. We rely on your membership dues which are currently only $35 a year for individual and $110 for corporate. We also have higher giving levels for those that would like to contribute more. We have a Silver Level at $250, Gold at $500 and Platinum at $1000. And of course all of it is tax deductible

The Board of Directors are all unpaid. If any of you would like to serve on the Board please let me know.

As the summer flying season unfolds please support your Foundation any way you can and most importantly —

Fly Safe

Harry

Seaplane Seminar Recap

The 30th Annual Seaplane Safety Seminar was held on April 25th in Anchorage. We had a good turnout that was highlighted by a lot of question and answer sessions and a great deal of audience participation.

The seminar began with a maintenance panel with John Pratt and Scott Walker who answered questions and provided insight for preparing aircraft for float season. One area of special focus was 406 ELTs and included an often overlooked item directed towards those who have recently purchased an aircraft and need to remember to go online and update their emergency contact and new ownership information.

Dean Eichholz then led discussions on common errors made by pilots such as looking over a lake, but not checking the entire body of water for depth, any obstructions and fully considering the usable length. He pointed out that the wind may change and pilots may thus need to take off from a different direction than the direction the plane was landed. Also, during step turns for a departure the fuel selector needs to be on the wing to the inside of the turn to prevent loss of fuel to the engine during the takeoff. He then engaged the participants in a wide ranging give-and-take about securing cargo and shared some examples of cargo shift during the takeoff in rough water. Placement of weight in float compartments was also discussed with tips and lessons learned shared from members of the audience.

Dr. Marcel Dionne, the new regional Aviation Medical Examiner for the Alaskan Region, discussed the flight exam with a thorough briefing on sleep apnea. He explained the need to check for sleep apnea and what flight doctors are doing to help pilots remain healthy.

The afternoon session began with a simulated scenario of a seaplane flight from Kenai to Twin Lakes in the Kenai Mountains with Roger Motzko, Dean Eichholz and Tom George. During various phases of the flight the scenario was paused and questions were posed. The audience members was given a “clicker” to make their choice of the correct answer followed by discussion on why that answer was chosen.

The questions began with a weather briefing for the flight and the likelihood of safe completion. As the flight progressed, the issue of the ceiling and alternatives to continuing the flight into the mountains were discussed. The flight continued into the 2,500 foot elevation lake with a strong north wind and landed. During the departure with the strong wind, the simulation sailed the aircraft back to the middle of the lake to but the aircraft did not start and instead caught on fire during the start attempt. The questions then presented to the audience considered what to do in the middle of a lake with the plane on fire and further, what about survival and how to notify someone the situation. The aircraft was surrounded by mountains and the pilot calling for help…this raised more questions and discussions.

The next speaker was Lt. Matthew Mitchell, US Coast Guard who picked up on the conversation of rescue and survival. He said in a search and rescue operation that “bread crumbs” were necessary for a success. Lt. Mitchell explained that not only a 406 ELT should be used, but a satellite phone, DeLorme InReach, Spot and the ability to provide signals to a rescue helicopter. He stressed that pilots should not count on only one signaling device. A number of “bread crumbs” aids dramatically in a successful rescue.

At the end of the presentation a Delorme Inreach donated by Northern Lights Avionics was given away. Other gifts from Northern Lights Avionics, Ron Davis, AVEMCO Insurance, Stoddards Aircraft, ACE Fuels, and Roger Motzko were donated for drawings throughout the event. And finally, Patti Eichholz made 40+ dozen (!) cookies for the seminar.

A Leg Too Far: A look back at a 2008 accident

by Bill Compton

After a 5 hour flight up the Canadian west coast from Bellingham WA, a B55 Baron landed for fuel at Gustavus, Alaska on August 10, 2008. It was a Sunday evening, and the 82 y/o pilot found the airport unattended. He quickly took off again, 15 minutes before sunset, and called Anchorage Center for an instrument clearance to Sitka, 69 miles south of the Sisters Island VOR. He added this chilling remark: "I hope we have enough fuel."

Asked about fuel, he replied "we got about an hour". The controller, concerned, suggested a return to Gustavus and got an irritated response. She then suggested Juneau, which was closer with better weather. The pilot agreed, and after an initial climb to 10,000 feet, he was cleared "to Juneau Airport via direct Sisters Island, then the LDA approach procedure, maintain 7000 until Sisters Island ... report over Sisters Island." The pilot affirmed he had the approach plate on board but he had difficulty understanding the transition from Sisters Island VOR to LDA interception at LYNNS intersection.

The Center controller updated the Juneau weather for N98HA, as wind calm, visibility 10 miles, few clouds 400ft, 5000 scattered, 6000 overcast.

Center: And, when you turn northbound on the 358 degree radial you can descend to 5400.

N98HA: 5400, ok, we can turn to the 358.
Center: N98HA say your altitude.
N98HA: Level at 10 thousand.
Center: N98HA roger, please start your descent now to 7000.

N98HA: 7000 we gotta get on 358 though.
Center: N98HA roger, you can do it in whatever order you want, either descend now or join the radial, whichever is easiest for you.

N98HA: Turning to 358, do you want us to descend to 7000?
Center: N98HA if you are north of Sisters Island inbound to LYNNS, you can descend to 5400 via the approach procedure.

N98HA: 5400, we're not established on the 358 yet.
Center: N98HA roger, and if you get down to 5400 you should be VFR, so you should be able to descend to 5400 north of Sisters Island.
N98HA: OK, we'll go down to 5400
Center: N98HA, verify you are north of Sisters Island established on the radial.

Center: N98HA, say your position and altitude
Center: N98HA, Anchorage Center
N98HA: 98HA, is there a VOR for the 358?
Center: N98HA affirmative, Sisters VOR frequency 114.0

N98HA: OK, I'm trying that now, you want us to descend to what?

Center: N98HA what is your altitude now?
N98HA: Nine thousand, uh, 8700.
Center: 98HA roger, if you're established on the 358 radial, you can descend to 5400 as you are inbound to LYNNS, do you see that on your approach?

N98HA: OK, I'm going to try to get on 358.
Center: N98HA until you are established on that, maintain 7000

N98HA: Ok, we gotta go down to seven.

There were more redundant communications like this. The Baron was unable to intercept the localizer, and finally the pilot said "Why don't we just go over to Sitka?" Forty miles short of Sitka, the Baron went down with dry tanks in mountainous terrain. Both occupants died.

Departing Gustavus certainly was poor judgment. Somehow, night IMC, mountainous terrain, poor radar coverage, no briefing and inadequate fuel all seemed preferable to, at worst, sleeping in the Baron. The two men could have walked a mile into town and spent the night, or made a 20 minute VFR flight to Juneau following the shoreline. Gustavus has a 122.65 outlet for the Juneau FSS, so briefing was available.

Airborne, the pilot could not understand and fly the approach procedure. His GPS was an older Trimble unit, without a moving map, and a panel switch toggled the HSI between GPS and VOR/LOC. His difficulty finding the Sisters 358 radial might have been from flying GPS direct to Sisters, then failing to switch to VOR/LOC after turning northbound, in which case his course needle would remain pegged in spite of rotating the omnibearing selector.

The tracking problem and the protracted communications distracted him from descending to 5400 feet which could have put him into visual conditions and saved the flight. He lacked situational awareness and appreciation of his own impairment.

The center controller sensed the gravity of the situation with the first call. Her suggestion of diverting to Juneau could not foresee the pilot's performance difficulties. Without the try for Juneau, the Baron could have made Sitka and might have been successful with the simpler VOR approach there over the ocean. Legal fuel on board could also have done the trick. As with most accidents, there was a chain of events.

A first read might conclude the pilot was not instrument rated and proficient. However, he was rated, had 9300 hours, and was respected by peers as a competent and conservative pilot. He had flown the Baron to Europe, and previously had owned an MU-2. What could cause an experienced instrument pilot to become acutely impaired to this degree, and could it happen to you or me? The answers, probably, are fatigue and yes.

The pilot and his 74 year old non- pilot friend had departed the Atlanta area the previous day and spent the night in Cheyenne, WY. Next morning they were off at 8:15 local, stopping at Boise, Bellingham, and Gustavus with a total flight time of 11 hours covering 1730 nm. They had progressed into 4 earlier time zones and the longer daylight of the northern summer.

The FAA defines fatigue as "the tiredness felt after long periods of physical and mental strain, including immobility, monotony, heavy mental workload, and lack of sleep".

Fatigue can cause irritability, impaired judgment, sloppy skills, inability to concentrate, loss of initiative, and inability to multi- task. Airline pilots are restricted to 8 hours of flight time in 24 hours. In airline service, this pilot would have hit his limit 3 hours before Gustavus.

Crew duty time conflicting with circadian rhythms has escaped a regulatory solution, though many airline crashes are a known or suspected result of crew drowsiness in the early morning hours. It was just before sunset when the Baron departed Gustavus, but the pilot's internal clock was back on Atlanta time, where it was 12:30am and time to be horizontal.

The 8-12,500 foot altitude band is valuable to private aviation for terrain clearance and topping weather, along with the advantage of not legally requiring supplemental oxygen. Most of this pilot's 11+ hour PIC time this day was spent at 10 and 11,000 feet.

The AIM says that, other than night vision, "significant effects of altitude hypoxia usually do not occur in the normal healthy pilot below 12,000 feet". Some studies do show performance loss at 8-12,500 feet, but I could find nothing to document a suspicion that fatigued pilots are more susceptible to mild hypoxia, whether hypoxia accelerates fatigue, or whether prolonged mild hypoxia has cumulative effects compared to a short exposure. Effect of mild hypoxia on pilot performance deserves more study.

General aviation has a poor record of accidents in the terminal environment, including controlled flight into terrain. Lack of currency, experience, and discipline are often cited as causes. Fatigue and hypoxia may be underlying factors in these accidents. This particular crash is compelling because of the pilot's known competence, the ATC taped evidence of his acute impairment, the prolonged duty hours leading to his fatigue, and the recorded altitude exposure. Other factors such as dehydration, hunger, medication, or carbon monoxide could have been present as well.

The oxygen requirements for part 91 operations are liberal, and that should be acknowledged in pilot resources and training. Use of supplemental oxygen might be

Instrument flight demands alertness and careful attention to detail. Because a single missed checklist item can start a fatal chain of events, we should ask whether any level of debility is acceptable and strive to avoid it. We would all be wise to embrace the IMSAFE model, limit our flight times to airline standards, use oxygen liberally, seek regular feedback from an instrument instructor, and be aware of our biorhythms. As Dirty Harry has warned, "A man's got to know his limitations".

Sidebar: A Personal Note

Over 35 years I've made 15 non- stop oceanic flights of 12 to 18 hours duration at 8-12,000 feet, 7 of them through sunset and sunrise, all solo in various Bonanzas. The human factors of such flights are the most difficult. The challenges to the pilot's mental stamina are unlikely to ever be accurately scored and tabulated by medical study, so I will express some opinion here from personal experience.

Fatigue enhancers	Fatigue reducers
Sleep deficit	Adequate sleep and rest
Extended duty hours	Realistic duty hours
Early am hours	Avoid or be forewarned
Biorhythms off time zone	
Hypoxia	Supplemental Oxygen
Monotony	Rest and task scheduling
Immobility	Move about cabin
High stress and workload	Autopilot
Physical discomfort	Cabin comfort considerations
Dehydration	Fluids onboard
Hunger	Snacks onboard
Unmet need to void	Provision for voiding
High noise level	Noise canceling headset

For a solo pilot it is extremely dangerous to fall asleep in flight, but sleep avoidance doesn't solve the problem of in- flight fatigue. Fatigue has caused me to experience headache, forgetfulness, confusion, task saturation, reverie, and even hallucinations. I've learned that oxygen by nasal cannula to keep saturation (by oximetry) above 92% will prevent or diminish these effects, so I now use it continually above 8,000 feet. A noise-canceling headset is a big help.

Fatigue has been almost overwhelming from 2 am to dawn, and I believe my approach performance at such times would parallel that of N98HA at Juneau. Dirty Harry was right, but it is man's nature to deny his physical limitations.

Announcement: The AASF is excited to announce that Dr. Melchor J. Antuñano, Director, Civil Aerospace Medical Institute (CAMI), will be our featured speaker at the fall safety seminar. We look forward to hosting Dr. Antuñano at the November 21st seminar and hope all of you will join us in Anchorage.

Dale Carlson Memorial Scholarship Makes Tracking Devices Available to Aviators

The family and friends of Dale Carlson, in collaboration with spidertracks, Northern Lights Avionics, the Alaskan Aviation Safety Foundation and the Alaska Airmen's Association, are offering the opportunity for pilots to obtain a spidertracks satellite tracking device for aircraft, and a year of basic tracking services. Pilots must hold at least a private pilot's license, be based in Alaska, and fly a minimum of fifty hours per year.

The Carlson family strongly believes in the importance of a spidertracks satellite tracking device as an integral part of any aviator's basic safety equipment. Dale Carlson was a pilot and beloved father, husband, brother, friend and coworker who was lost in Prince William Sound in April of 2015. He never flew without his spidertracks device, and routinely used it to relay information about his location to his family. In his memory, Dale's family, friends and coworkers decided to start a memorial fund to provide spidertracks systems for pilots in Alaska.

Pilots interested in obtaining the spider device and tracking plan are asked to complete an application, which may be found at www.aasfonline.org. The deadline for the scholarship will be October 15, 2015; winners will be announced at the AASF Fall Safety Seminar. Anyone interested in making a donation to fund this scholarship should contact the Alaskan Aviation Safety Foundation at aasfonline@gmail.com or (907) 243-7237. Please contact the Foundation with any questions about the scholarship.

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