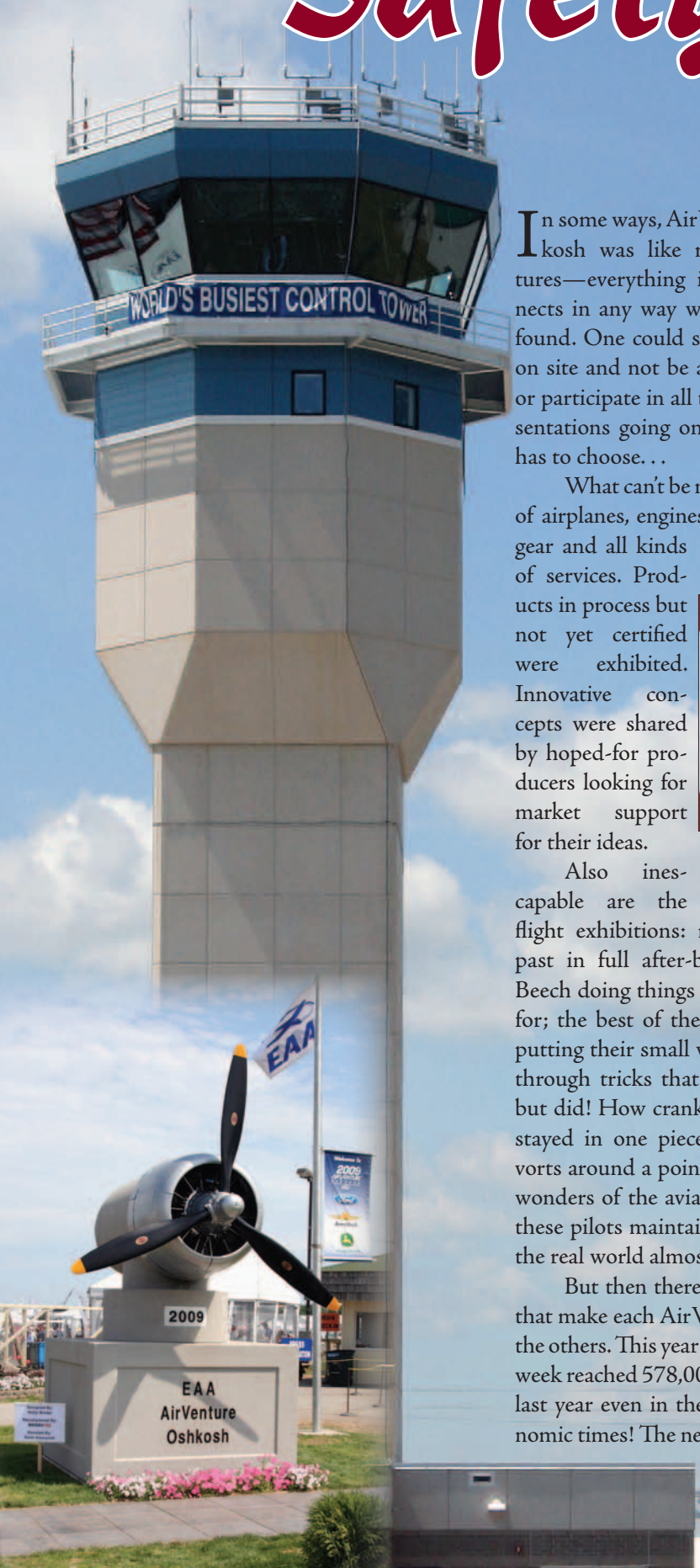
Safety Net



We FLY 4 LIFE at AirVenture 2009

In some ways, AirVenture 2009 at Oshkosh was like many other AirVentures—everything imaginable that connects in any way with aviation could be found. One could spend the entire week on site and not be able to see everything or participate in all the seminars and presentations going on day and night. One has to choose. . .

What can't be missed are the displays of airplanes, engines, avionics, supportive gear and all kinds of services. Products in process but not yet certified were exhibited. Innovative concepts were shared by hoped-for producers looking for market support for their ideas.

Also inescapable are the flight exhibitions: military jets blasting past in full after-burner; an old Twin Beech doing things it was never designed for; the best of the best acrobatic pilots putting their small wings and big engines through tricks that airplanes can't do—but did! How crankshafts and propellers stayed in one piece during snarling cavorts around a point has to be one of the wonders of the aviation world. And how these pilots maintain their orientation to the real world almost defies explanation.

But then there are those new things that make each AirVenture different from the others. This year attendance during the week reached 578,000—a 12% jump from last year even in the middle of hard economic times! The new FAA control tower, the world's busiest for a week, handled the largest number of airplanes homing in on Oshkosh for a few days—more than 10,000 airplanes showed up at Witttman Regional and adjoining airports! The AirBus 380, the biggest airliner in the world was there—a monster that makes one wonder if there are no reasonable limits to the number of people that should occupy an aluminum tube to get from somewhere to somewhere else. And talk about future think. . . Well beyond Burt Rutan's elegant White Knight II was his vision of passengers paying to ride in a future space craft in elliptical orbit zooming close around the surface of the moon at 500 ft. doing 7,000 mph! That ***would*** take one's breath away.

And new this year was the **Fly 4 Life** emphasis. For the first time, agencies using airplanes for non-commercial public benefit and mission aviation purposes were made a formal part of AirVenture 2009. The idea for this special focus was conceived last year. Mission leaders joined forces under the leadership of the International Association of Mission Aviation (IAMA), the concept took root, and with guidance from former EAA Staff member Bob Warner, was presented to the EAA and approved. The entire mission aviation community is grateful to Mr. Tom Poberezny for providing this opportunity to showcase humanitarian and mission aviation to a such a wide audience.

Continued on page 3

Photo by Harold Berk

Pressure Cooker

When I was growing up, my mother often used a pressure cooker to cook things faster and make them more tender, especially meat. The water and food was placed in the pot, the lid put on, and then it was heated to a boil. When steam was shooting out of the small tube on the top of the lid, we put the weight on it. Then the pressure would build inside the pot, increasing the boiling point temperature—which made things tender.

While this was an effective way to cook tough meat, there were dangers involved. I can remember incorrectly fastened lids blowing off explosively, or the seals leaking, allowing superheated steam to burn the unsuspecting.

Sometimes life reminds me of a pressure cooker. Tasks and responsibilities pile up, threatening to make us explode. How do we perform under pressure? Like the tough meat, the right amount of pressure is good. It keeps us motivated, interested, and at the "top of our game." Most of us perform best in the presence of some pressure. However, when the pressure builds too much, our performance suffers. At a certain point, extreme pressure will cause us to lose focus, become distracted, or even become paralyzed. Alternatively, it makes some people so focused they become unaware of things going on around them (tunnel vision, etc.).

This has obvious implications in operating aircraft safely. The right amount of pressure keeps us on our toes; too much will jeopardize us and our passengers.

The interesting thing about pressure is that most of us think the majority of the pressure we sense is imposed by others—our bosses, family members, colleagues, friends, customers—or by circumstances beyond our control. But sometimes the pressure comes from ourselves! Indeed, often the most pressure we feel is self-inflicted. We have high expectations of ourselves, and don't want to disappoint, so the pressure we think is coming from others is actually coming from our own desire to do well and please others. This is an important distinction, as it helps us know how best to deal with excessive pressure.

We often underestimate the pressure we are under, but when we sense excessive pressure, or others point it out, what are we to do? The obvious answer is to off-load some of it. There are countless books and materials available that explain how to do this—to prioritize, keep things in perspective, adjust, delegate, have realistic expectations, etc. Many of them are good and necessary. We must realize we are human, with very real limitations of time, energy, brain-power, resources, and health. We will never be able to meet every need we see, or save the whole world. Even Jesus limited his activities to conserve his energy and accomplish his top priorities.

Setting priorities is vitally important, both immediate and in the long range. If we are not careful we can easily squander our time and resources on things that ultimately matter little. In an in-flight emergency, the rule is "Aviate, Navigate, Communicate"—in that order. If a pilot gets too wrapped up in communicating, and loses control of the aircraft, it is all for naught. The same can be true of other things in life. As Christ said in Mark 8:36—"What good is it for a man to gain the whole world, yet forfeit his soul?" Priorities really do matter!

The kicker, then, is in setting proper priorities. We must keep eternity's values in view. We must be realistic, understanding our own limitations, and humbly view ourselves as God does. We must value people and relationships over equipment and tasks. These things are not easily done, but are a necessary part of life if we want to be more than conquerors and enjoy the abundant life that is intended for each and all of us.

Recent Concerns

I am sorry to have to report that in just the last few months there have been a number of accidents in missionary aviation:

- A King Air 90 suffered a main landing gear collapse on landing, causing extensive damage, but thankfully no injuries.
- A Cessna 206 suffered a loss of power shortly after take off, striking a hut and tree, and destroying the aircraft. Thankfully, there were only minor injuries.
- A Cessna 206 slid off the end of a slippery runway, striking the wing and propeller. Thankfully again, no injuries.
- A Cessna 206 suffered a loss of power over a congested downtown area, struck a utility pole and wires, the ground, a building, and caught fire. Sadly, the pilot and front seat passenger did not survive. The two other passengers were injured.

MSI assisted in the investigation of three of these events, which underscores the fact that our work is not finished. We have been blessed with a period of relatively few accidents in missionary aviation. But then I remember what a former NTSB investigator once told me—"All that could change tomorrow!"

I need not remind you of the personal, organizational, and financial costs these accidents create for the missions involved. Add to this the impact of reduced financial support that all missionary aviation agencies, including MSI, are experiencing during the current world-wide economic slump, and the pressure builds. We try our best to control the pressures that affect MSI. Yet, as God, through His people, supplies the necessary resources for our ministry, we continue relentlessly in

Making Safety a Way of Life!

Jon Egeler
President

Photo by Joe Hopkins

After the year-long organizational work of Chuck Daly (IAMA/JAARS), **Fly 4 Life** Project Coordinators Rob and Teena Ray, and Lee Smoll (MASA) in preparing for the week, one cannot help but be grateful to the many mission agencies and people who set up, manned, and then disassembled all the exhibits at the close of AirVenture 2009. Thirty-six mission agencies and 385 mission participants accomplished this huge task. This was probably the largest number of mission aviation agencies and personnel gathered together in one place at one time in history!

Photo by Joe Hopkins

Words and pictures in a few pages can only scratch the surface of the whole effort. The **Fly 4 Life** tent and representative aircraft from several missions were located adjacent to Aero Shell Square, the place where high profile exhibits are featured. The tent highlighted the several categories of current mission aviation ministry—Spiritual Life, Education, Safety, Community Development, and Disaster Relief.

Photo by Joe Hopkins

The **Fly 4 Life** tent was manned by individuals from many different mission agencies, an example of the cooperative spirit that is now evident within the missions communities and made visible to the thousands who visited the site—perhaps not previously having the slightest idea of what mission aviation is all about. Feedback from many visitors indicated their appreciation for understanding the varied aspects of mission aviation services.

Included in the **Fly 4 Life** tent were tributes to Martin Burnham, and to Nate Saint and his four colleagues, all of whom were killed during their ministries to extend the Kingdom of God throughout the world.

Photo by Joe Hopkins

Near the **Fly 4 Life** tent, Steve Saint had a replica of his father's airplane that was destroyed on the Curaray beach in 1956 by the Auca Indians—now known as the Waodani. Steve also had his new Maverick on exhibit—a small vehicle that is first a roadable and then flyable "car." It uses a flexible "wing" similar to a parasail, but supported by a post that eliminates the need for ground space to spread out the sail prior to flight. Steve's goal in designing the Maverick has been to provide a simple means of transportation that can be used by those in less developed cultures such as the Waodani.

Thirty-two mission agencies, including MSI, enjoyed sharing the large IAMA tent in the mission emphasis area. No count was made of the total number of visitors to the various agency exhibits, but at times it was difficult to find one's way through the crowd in the tent. Many people who stopped by out of only casual interest instead found themselves intrigued by agency representatives and took advantage of the many brochures and newsletters available. It certainly can be concluded that there were many hundreds of individuals who were exposed to the vision and passion of those representing their agency's contribution to mission aviation.

Photo by Joe Hopkins

Photos by Joe Hopkins

At the Theater in the Woods, Gracia Burnham and Steve Saint, representing mission aviation, responded to a reporter's questions along with two others representing humanitarian aviation.

Photo courtesy of Teena Ray

Aviation students from Prairie Bible College, Liberty University, Moody Aviation and MATA exposed about 200 youngsters per day to mission aviation through hands-on building of paper model Kodiaks at the **Fly 4 Life** booth at KidVenture. Never too young to get them involved!

⇦ Two of the six Kodiaks (left) that graced AirVenture 2009. Soon all six Kodiaks will be at work on their respective fields around the world—in great expectation that each will produce the advantages the Kodiak has been designed to provide.

A one-of-a-kind attraction for this year's **Fly 4 Life** focus was the airplane reported to be the first used in mission aviation flying. The 1934 German built Klemm Swallow was used by Swiss Catholic Priest Father F. Zeigler in Papua New Guinea in 1935. Based in Australia, it was transported to Oshkosh for display during the **Fly 4 Life** emphasis. It is still airworthy and was flown during AirVenture.

While the work of so many individuals made the week ***successful*** for mission aviation, the efforts shown by those involved in the Mission Aviation Support Association (MASA) made the week ***feasible***. Never in MASA's prior experience had so many representatives signed up for the week—420 adults and children! The extraordinary work accomplished by the MASA staff, led by Lee Smoll and Anita Holdrige, is almost beyond belief. The preparation for and then the effective getting it done boggles the mind.

Here are the numbers: 29 churches were involved. 135 homes were opened to house the mission personnel, of which 112 were utilized. 44 vehicles were made available to missions and 25 drivers provided pick-up chauffeur service for 65 airport arrivals. There were 23 separate meal sessions provided and 7,253 meals served during the week in the large MASA tent just outside an EAA entrance gate—the tent this year being about twice the size as that of last year! In addition, MASA provided 75 speaking opportunities for mission representatives in 60 churches!

MSI joins with all the other mission agencies in profound thanks to all the MASA Staff, the Oshkosh area churches, and hosts and hostesses who played such a significant role in support of this year's **Fly 4 Life** emphasis at AirVenture. Indeed, their participation cannot be overstated.

Only time will tell what effect the cooperation of EAA and the efforts of IAMA (www.iamanet.org), the cooperating missions and MASA will have on extending the Kingdom of our Lord. It is hoped that much fruit will arise and remain. Kudos to all involved.

MSI

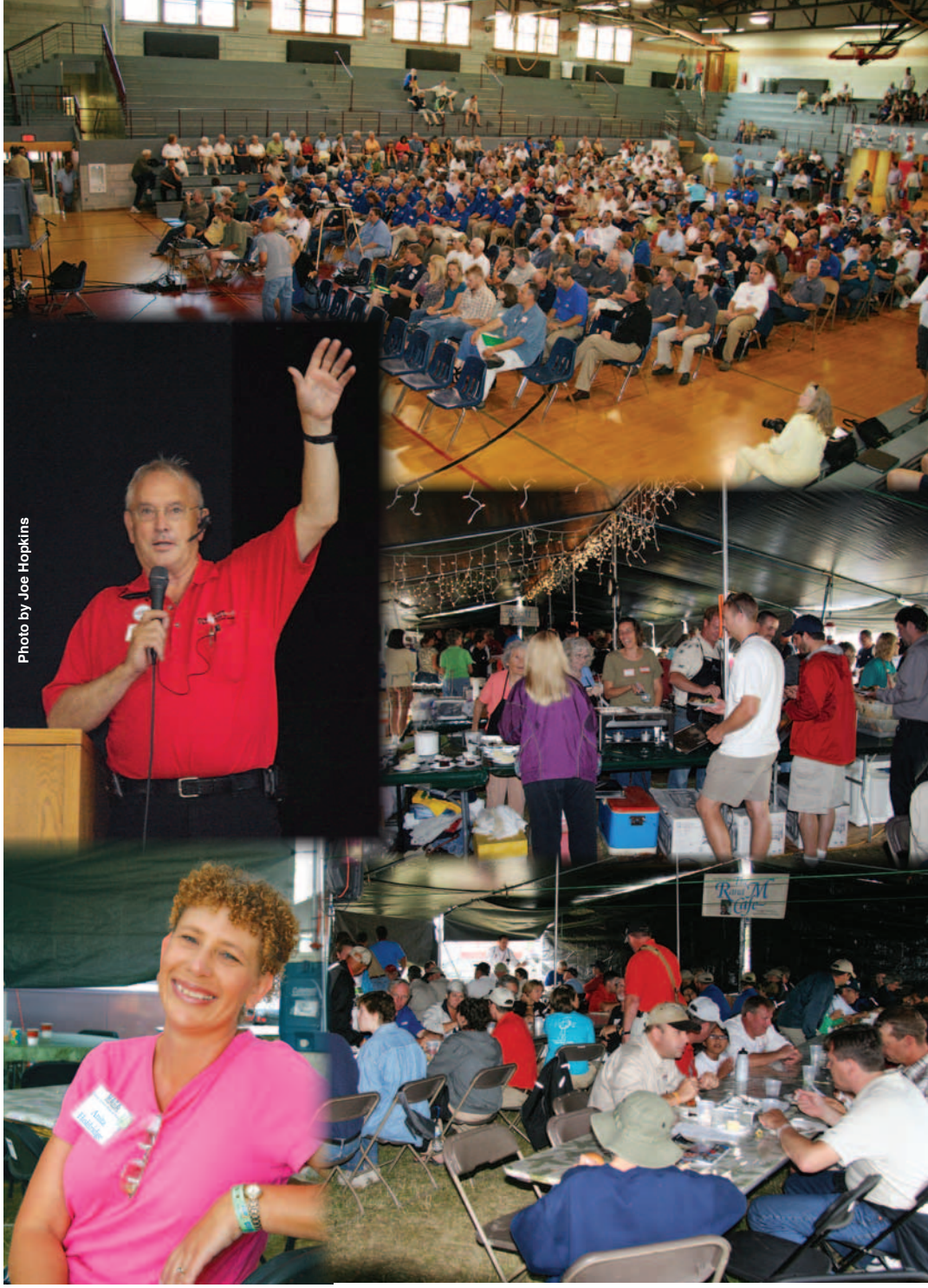


Photo by Joe Hopkins

Unless otherwise noted, photos in this article by Harold Berk

It really ***was*** a dark and stormy night! The King Air 90 captain made the visual approach to runway 35 in rain and severe turbulence, crabbing about 45° to the right to compensate for the crosswind. After touchdown, the aircraft drifted left, off the runway prepared surface. The right main landing gear partially collapsed after hitting piles of dirt in the area between the edge of the runway and the runway lights, placed nine meters from the runway's edge. The aircraft rolled to the right, across the runway and off the right side of the prepared surface into a ditch. Both main landing gear legs collapsed, damaging both engines and propellers. Neither the captain nor the first officer, the only occupants on board, was injured. The aircraft was damaged beyond economical repair.

The flight began about 7:15 p.m. when the temporary program manager (PM) asked the captain and first officer to pick up the victim of a car accident. The PM didn't know details of the person's injuries. However, in addition to the fact that the person had been involved in a car accident, several things left the King Air crew with the impression that it was a matter of life or death. They were asked to do the flight that night rather than wait until the next day. They were to be airborne in one hour and the pilots understood they were to get fuel at the destination [they had fuel for one way only]. A check of the weather showed the presence of "moderate thunderstorm cells" between the departure airport and the destination. Although the weather was moving in the direction of the destination, the pilots expected to arrive there in visual conditions ahead of the storm.

The temporary program manager (PM) told the pilots that they could get fuel at the destination. Although he didn't tell them that they should go with one-way fuel, the pilots understood it that way. Besides, one-way fuel to this destination was normal practice. The King Air crew was not aware of a program policy that had been established by the Chief Pilot (CP) about a year and a half before. The policy required round-trip fuel to this destination at night. The Chief Pilot had left the program a year prior to the accident and had not been replaced. Since the CP's departure, exceptions had been made to this policy based upon good VFR weather and no thunderstorm activity. The PM wasn't aware of the storm the pilots would encounter when he asked them to do the flight.

The pilots considered taking on extra fuel before they departed. The captain said, "Both of us had an uneasy feeling [not verbalized until airborne] that we should have round trip fuel." However, neither could operate the fuel truck and they believed that no one was available to pump fuel for them. The captain later remarked, "Besides, we were in a hurry: med evac—life or death."

The pilots discussed the fuel situation after they were airborne. The captain related: "We both concluded about 30 minutes into the flight we should have gotten round trip fuel. This would now create a 2 hour delay. Is this really life or death? No way to find out." Although they were in contact with ATC for part of the flight, no one on the program was flight following them. The captain later said, "I figured we could divert back and land on fumes as late as [the] descent point. Should I have discussed this emergency back up plan with the First Officer (F/O)?"

The captain filed a "canned" IFR flight plan. The pilots didn't know that the alternate airport listed on the flight plan closed at 6 p.m. and was not available as an alternate. The captain had not landed at the destination airport at night, although he had been there in daytime. He had never landed at the alternate airport listed on the flight plan. The temporary program manager wasn't aware of this. The destination runway has Precision Approach Path Indicator (PAPI) lights and runway lights. There is no instrument approach to the airport, but the program had designed a "GPS guided visual approach."

The captain began the descent from 12,000' MSL about 80 miles from the destination (total distance is about 230 miles). He had determined that, with the fuel load they had on board, this was their last chance to turn around. In the VMC descent they encountered light rain but no turbulence. The pilots saw lightning in front of them, but the aircraft's radar wasn't showing much to be concerned about far ahead of the aircraft. The descent to 4000' MSL was uneventful.

About 4000' MSL (airport elevation is 410' MSL) and 20-25 miles out they encountered moderate to severe turbulence. The autopilot kicked off several times and the airplane jumped around so much the pilots had a hard time seeing the instruments. The captain considered going to the alternate (he didn't know it was closed). However, he decided not to go because he knew there was no fuel there and it would take several hours to get fuel there by truck. He remarked, "Med evac, remember?"

Upon reaching the destination, the captain aborted the first approach when he was unable to get back onto the runway extended centerline with a 45° correction. After aborting the landing, the captain remarked that he could "barely fly the airplane in [the] turbulence and rain." He had "visions of diverting into terrain or breaking apart in a thunderstorm". He continued, "I believe we were at a significant risk for Controlled Flight Into Terrain (CFIT) or destruction/upset by the storm. Only one more factor would have killed us." At that point the captain believed that landing was the best option.

The captain added extra speed on the second approach to cope with the crosswind. The FO called for a go-around; the captain continued the approach. The airplane touched down slightly left of the runway centerline. However, they were centered between the runway lights because the lights are located four meters from the right edge of the runway, but nine meters from the left edge. The captain was unaware of this. The aircraft came to rest off the right side of the runway in a ditch at about 9:30 p.m.

The captain reported that the car accident victim was

expected to fully recover after being airlifted out the next day. The patient's injury was severe whiplash. . .

Jay Hopkins Analysis:

This is a classic accident in the way that the accident chain grew over a long period of time to the point that the crew was in a position with no good alternatives. It makes clear the impact program management can have, so let's start with that.

Program Management

Strong leadership is critical to an effective and safe program. In this case there was lots of evidence that the leadership was in turmoil. They had a temporary program manager and had not had a chief pilot for over a year. Thus I was not surprised to see lots of evidence of "standards creep" and communication problems.

Standards Creep

The former chief pilot had instituted a conservative rule that round trip fuel was required to this destination at night, but since he left, "exceptions were made based on good VFR weather and no thunderstorm activity." ***Once you break a rule, there is no rule***, so it was easy to slide further down the slope by taking off without return fuel at night with thunderstorms in the area.

Poor Training and Standardization

The crew was not aware of the original rule.

The captain was not aware the alternate closed at 6 p.m. and had never landed there.

The captain had never landed at the destination at night.

Massive Communication Problems

The temporary program manager didn't know the extent of the injuries and didn't know about the thunderstorms. He was also not aware of the captain's qualifications for the flight.

The crew thought that they had to go without return fuel.

The crew assumed it was a matter of life or death based on circumstantial evidence.

Failure to Communicate Pinch

Both crew members were uneasy but neither one voiced their concern out loud until they were well under way and the pressure to continue was too strong for them to overcome.

Hazardous Attitudes

This crew had a strong dose of mission-itis leading to impulsive decision making.

USE OF AESOP

It is my guess that the lack of leadership and poor communication within this program was evident to all but no one was expressing their concerns. If the temporary program manager had been using AESOP daily or even just weekly with his staff, it is likely that these concerns would have been brought up so they could be dealt with. Using AESOP before the flight would likely have alerted the crew to the many issues they faced. The AESOP briefing should have included the crew and the temporary program manager, even if the manager had to participate by phone. It might have gone like this:

Assignment—The discussion generated by the assignment question likely would have clarified the lack of information about the patient, the presence of storms, and the fact that it was not only OK to take enough fuel to return to the departure point; it was actually required by the program policy.

Equipment—If the fuel discussion didn't come up under assignment, it would probably have come up here.

Obstacles—This would hopefully have led to an open discussion of the weather, the lack of an instrument approach, and the lack of an alternate.

Personnel—The captain's lack of experience might have come up here, along with a discussion of whether the crew was physically and mentally prepared to take this late evening flight in challenging conditions.

Situation—The number of yellow and red items elicited by this discussion would have made it very likely the crew and the program manager would have decided it was not worth the risk. Thus in only a few minutes of focused discussion using AESOP, it is likely this near disaster and the possible loss of life could have been averted.

Management Issues

In the safety consultations I have been involved in, we have often found similar situations with:

- Management positions unfilled.
- People filling multiple management positions.
- People carrying a full flight load while also taking on the responsibility of one or more management positions. It can be very tempting to deal with lack of staff by doubling up on management positions, having people in management also working the line, or just leaving the position unfilled. However, this is a dangerous approach that can result in a very expensive or even life ending accident. At the very least, if a program finds itself in this situation, the risks involved should be put on the table and dealt with to decrease the likelihood of a negative outcome.

Say It Out Loud

I would like to emphasize the responsibility for each of us to verbally and assertively express any hesitation we might have about a flight or any other program weaknesses. If people would clearly express their doubts to others it would be a big step forward in reducing the missionary aviation accident rate.

MSI

Auditing. . . What's it all about?

About 10 years ago I read an article called "Internal Auditing: The Big Lies" by DeWitt L. Beeler. Now if that isn't a title that catches your attention! His opening line "Audits, and by extension, those who conduct them, have traditionally enjoyed the same level of regard as a dead otter" also caught my attention.

At that time, in my young professional auditor career, I had been conducting internal and external audits at a Major Airline for about 8 years. I was feeling pretty good about myself and really thought that I was providing a good service for my airline and the suppliers I dealt with around the world. The problem was I had fallen into **a** trap and didn't know it. Now the trap wasn't something that was tangibly noticeable because it was the way I was trained—it was the way we did things.

If you have ever thought about it, no one really likes to get an audit and when you know it's coming you have some pre-conceived notions about it. This is because auditors have a reputation, to some extent unfair, but in others it is deserved. I have conducted well over a thousand audits in my career and I have witnessed the aftermath of some pretty bad ones from previous auditors that came before me.

In his article, Mr. Beeler nailed the reputation that many auditors leave in their wake—the reputations for nitpicking, "speaking in tongues" (auditor jargon that no mortal understands), bullying, writing up opinions as holy writ, refusing to listen, inventing requirements—all for an enduring, obstinate lack of relevance to anything important to an organization's success.

He goes on to give the following list of the most common of these lies. Some combination of them can be found in any dysfunctional audit program. The danger lies in the fact that they all sound as if they must be true. It is their very plausibility that makes them dangerous. No amount of audit repackaging, training in audit methods, or wishful thinking can substantially improve the current state of auditing unless these lies are directly addressed.

The Big Lies:

- Audits are about compliance
- Audits should focus on Facts
- Auditors cannot make judgments
- Audits are a verification activity
- Audits drive continuous improvement
- Internal auditors should emulate their registrar's auditors

I have to admit that our airline finally did get it! We changed our approach to training, auditing, and reporting. During my next 9 years at the airline we saw a huge positive impact on our business and how we were perceived. Once we changed our focus to evaluating the various systems that run the day to day operations, versus the nitpicking and reporting of each item of non-compliance we observed, everything started to fall in place. The managers and staff we audited also saw this and finally understood we were there to help the organization and the audits/assessments actually had some merit and benefit.

As you read this I can hear you say that this is coming from the airline industry and what does it have to do with missions? None of these things would be found in a mission's auditing program—right? The fact is that we are all susceptible to the same traps if they are not appropriately and adequately dealt with. Too often an audit is a mile wide and an inch deep. Auditors must escape the narrow and largely self-imposed confines of compliance auditing. Too often the focus is on individual non-conformances, and provides almost nothing in the way of useful systems-focused information.

Mission Safety International (MSI) has stepped into this void to help, and I am convinced that they also get it. MSI has developed the Regional Safety Verification Plan (RSVP) to encourage and ensure a high level of safety in mission aviation operations worldwide. We all have to take a step back and provide an honest assessment of where our organizations are at the moment.

The RSVP program is set up to provide that unbiased assessment ***with*** and ***for*** those we serve. The program focuses on a mission's operating systems. It provides a means through fact-based observations and interviews with staff personnel to draw conclusions about the health of the organization in a way that can be used to initiate long-term improvement.

MSI's experience has shown that permanent change usually results when the people involved "discover for themselves" that there is a better way of doing things, not necessarily when they are forced to do something by someone "from the outside."

Stan Schmoe

Photo by Harold Berk

Stan Schmoe has recently been appointed as MSI Vice President of Safety Standards. His role will be that of establishing and maintaining safety standards for our members, thus fitting in well with RSVP and eventual Safety Certification. His responsibility is distinct from, but supports the work of Steve Quigg, MSI's Vice President of Field Services, which focuses on the services we provide to our members. Stan can be contacted at stan.schmoe@integra.net

Mission Safety International, Inc.
328 E. Elk Avenue, Suite 1
Elizabethton, Tennessee 37643-3351
Telephone 423-542-8892 FAX 423-542-5464
E-mail info@msisafety.org www.msisafety.org

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