

PREMIUM ON SAFETY

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INSURING SAFE SKIES

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A MESSAGE FROM USAIG

Greetings!

Since becoming director of USAIG Aviation Safety Programs in July, I've had a great intro to the diverse mix of organizations and aviators we're privileged to call policyholders. My 25 years as a U.S. Coast Guard pilot immersed me in a flight program focused on exceeding expectations while managing risk. A familiar aim to go "above and beyond" mandates resonates across all of flying, and this newsletter is one way USAIG supports safety excellence. In this issue you'll find articles on SMS benefits and how a proactive crew interrupted an unfolding runway incursion. You might be moved to review policies or habits by some stats on light jets and slick runways. We value your feedback—see the back page.

Fly smart and fly safe!

Paul Ratte
Director of Aviation Safety
Programs, USAIG



Above and beyond the FARs

Companies use SMS programs to identify areas for improvement

BY ROB FINFROCK

All of us are familiar with companies that claim to go "above and beyond" to ensure "operational excellence" and the satisfaction of their customers. Perhaps you've even made similar claims for your business. What do those words really mean, though?

Thanks to the Federal Aviation Regulations, the minimum requirements necessary to legally conduct private aviation, corporate aviation, or commercial airline flights are far from ambiguous, and easily cited and referred to. While the Federal Aviation Administration clearly specifies

preflight checklist, as well as cockpit checklist discipline. Prior to the flight, we will sit down to brief on everything we need to know, including the expected weather, international requirements like CANPASS or APIS, and even crew lodging and transportation. Next, we conduct a self-assessment, which allows crewmembers to discuss their current physical state and readiness. That allows everyone involved to really understand each other."

That mindset continues after the flight as well.

"We created a similar checklist to review each phase of flight, for any maintenance, scheduling, or line service issues," Kilkeary adds. "At the end of the day, we also ask our crews to discuss the mistakes they may have made, in order to identify

"At the end of the day, we also ask our crews to discuss the mistakes they have made, in order to identify ways to improve."

what standards must be met in order to conduct flights under FAR Parts 91 and 135, an increasing number of business aviation operations believe the reasons to set their standards even higher are equally clear.

"Many of the things we do are driven by human factors, and what effect they may have," notes Edward Kilkeary, Jr., vice president of Operations for LJ Aviation in Latrobe, Pennsylvania. "We've really taken a look at the

ways to improve."

Bill Grimes, vice president of safety and security for Cessna Aircraft fractional subsidiary CitationAir, notes his company mandates recurrent training for its flight crews every six months, rather than the 12-month requirement as defined by FAR 135.293. CitationAir also prohibits night operations in some mountainous environments, and has implemented more conservative circling minimums than what the

(continued on page 2)

Above and beyond (continued from page 1)

FAA specifies. “Our process is well ahead of the FAA mindset,” he says. “Since we’re not a scheduled airline, we don’t make trip after trip into these places. We constantly assess the risks of operating in unfamiliar environments.”

Both Kilkeary and Grimes cite the importance of safety management system (SMS) programs to identifying areas requiring

ed two years ago, which monitors several additional factors beyond FAA minimum crew rest requirements. “Based on information we received through our SMS, we added consideration for early starts, time zone changes for West Coast crews flying east, and those starting duty on the backside of the clock or those flying a high

ments when conditions warrant. That is a challenge for any operator in this dynamic, highly variable business format... but this attitude not only leads to a higher level of safety—it also drives our desire for superior customer service.”

Kilkeary also believes a company’s

“...the company mandates recurrent training for its flight crews every six months, rather than the 12-month requirement as defined by FAR 135.293.”

additional oversight, and more conservative behavior. While SMS programs are not yet specifically required by the FAA, such programs have become increasingly common among overseas operations, where they are regulated by standards defined by the International Civil Aviation Organization (ICAO). LJ Aviation and CitationAir have each implemented SMS programs in line with the International Standard for Business Aircraft Operations (IS-BAO), which are recognized as ICAO compliant.

Grimes points to the fatigue management program that CitationAir implement-

number of hours on consecutive days,” he says. “You must consider the impact from long schedules on a pilot’s circadian rhythms; if you just follow the FAA requirement, you can be legal but you may not be providing the best opportunities for maximum pilot rest.

“We all realize that rules aren’t going to manage all the risk factors,” Grimes adds. “We will always do what is required by the FAA to provide the regulated level of safety, but our company culture and values also build a foundation to exceed those require-



approach to safety will translate into a better customer experience. “Our approach to best practices embodies the philosophy within our organization, the ‘three Ds’—detail, diligence, and discipline,” he concludes. “It helps build the discipline we’re trying to create.”

Rob Finrock is a certificated sport pilot and formerly-managing editor of an online aviation news service.

Parts is parts: Should you fly under 91 or 135?

Simple concepts—confusing details

If you’re relatively new to business aviation, you’ve likely had questions about the differences between FAR Parts 91 and 135 operations. There’s no need to feel bad about that—the topic causes confusion from time to time for even the most experienced operators, too!

As with many topics related to the FARs, the basic concepts are fairly easy to understand. In the simplest terms possible, Part 91 governs private operations, while Part 135 concerns commercial operations. If an operator intends to make money from the flight, that’s a Part 135 flight.

As you might expect, the latter category will be more strictly regulated than a Part 91 private flight. For example, to be compensated for a Part 135 flight the operator must possess an operating certificate from the FAA. Part 135 operations also have more stringent requirements for minimum landing runway

length, and have different tax obligations than private flights.

Add corporate use to the mix and the picture becomes a bit more muddled, while still remaining true to those basic concepts. If you intend to offer your company aircraft for hire, and your company will generate revenue from the passengers or cargo carried on that chartered flight, those operations must be conducted under Part 135. However, if you use your aircraft on company business, such as flying employees—but without receiving compensation for the flight—you may generally still conduct operations under Part 91. That qualifier explains why most corporate flying is conducted under Part 91, in full compliance with the FARs.

You may now ask, “So, what’s the confusing part?” That would be Part 91, Subpart F—which allows limited compensation in some

circumstances for what would otherwise be considered a private flight.

An example of a Subpart F operation would be a flight onboard your aircraft, but for an “affiliate” business other than your own. As long as that flight is “within the scope of, and incidental to, the business of [your] company,” you may recover the costs for that flight from the affiliate business. Subpart F also allows companies operating aircraft over 12,500 pounds or turbojet powered aircraft to “time share” with another entity, and recoup certain costs for those flights.

While the FARs detail requirements for FAR parts 91 and 135 operations, the National Business Aviation Association (NBAA) also has great online resources to assist operators with the nuances of Part 135 operations (www.nbaa.org/admin/options).

—RF

System synopsis: Bleed-air malfunctions

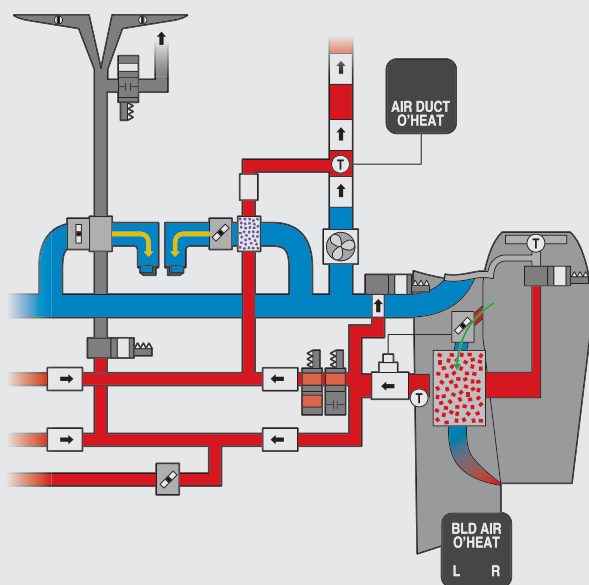
Knowing what to do when hot bleed air becomes too hot

BY THOMAS A. HORNE

Engine bleed air systems can vary widely in design and operation from one airplane type to another, but they all perform the same basic group of functions. Bleed air pressurizes the cabin, heats and cools the cabin, provides heat for ice-protection systems, and even inflates door seals. Here, in a brutally brief nutshell, is how bleed air systems work.

Hot air from engine compressor sections (usually the third compressor stage, dubbed P3 air) is tapped, then sent to an air-to-air precooler (think of a car radiator) for cooling. Its temperature is regulated by a flow valve that introduces ram air. How hot is the engine air before it's regulated? A nominal tempera-

ture would be above 500 degrees Fahrenheit. After passing through the precooler, bleed air temperature drops to, say, 450 degrees F.



ture would be above 500 degrees Fahrenheit. After passing through the precooler, bleed air temperature drops to, say, 450 degrees F.

This hot air is routed to an environmental control unit for further cooling. Obviously, 400-plus-degree air is way too hot for cabin heat! Some airplanes use air cycle machines (ACMs) to make the incoming air manageable; ACMs use compression and expansion turbines to regulate air temperature. Vapor cycle systems use refrigerant gas to do the job.

Other bleed air lines are routed to leading edge or windshield ice-protection components. Flow control check valves keep the air moving in the proper direction, and the pilot can select (in twins) either left, right, or both

Overheats

As you might suspect, a main concern is overheating of the bleed air lines and ducts. A break in a bleed air line, or an overheat caused by a malfunctioning ACM or vapor cycle system, can be serious indeed. Fire, melting of components, and smoke and noxious fumes in the cabin can result.

To warn against this, caution and warning annunciator panels light up should an overheat occur. Consult the checklist for your specific airplane, but most times a bleed air overheat is considered an abnormal condition, so that means an amber warning light. To use the Cessna Citation CJ3 as an example, two annunciators address bleed air problems. Let's see what the checklist says for each type of overheat.

Bleed air overheat

The CJ3's BLD AIR O'HEAT L R lights up when the bleed air leaving the respective engine pylon-mounted air-to-air precooler rises above 560 degrees F. This could be caused by a break in a bleed air line or, more

likely, when flying with high engine power settings and bleed-air-powered ice protection components on.

The checklist has but two steps, and carries some big implications. The first step is to reduce power to the side with the overheating bleed air—if practical. Of course, that also means retrimming the airplane. Step two is to turn off the engine fan synchronizer knob—the synchronizer is meant to synchronize engine speeds at normal power settings, not when there's a gross mismatch in power output.

Cessna says to maintain better than 75-percent N2 on the engine running at reduced power if wing or engine nacelle anti-ice is in use. This should be enough to pro-

vide a safe flow of air hot enough to prevent ice from forming. But what if you're in heavy icing, and the anti-ice panels can't do their jobs properly? A diversion to an alternate airport may be in order. That means descending, and that means reducing power. Here's where things can get sticky. Below 75-percent N2, the bleed air isn't hot enough to fight ice accretions.

Air duct overheats

Another amber light, the AIR DUCT O'HEAT annunciator, lights up when the ship's environmental system (heating and air conditioning) ductwork sensors detect that they're becoming hotter than normal. Typically, this means that the temperature control unit has gone haywire, and too much hot air is flowing into the cabin and/or pressurization lines.

To lower the temperature, the checklist says to reset the temperature circuit breakers (the environmental system is electrically powered), then select a lower temperature. If this doesn't extinguish the overheat light, then rotate the temperature selector knob to the MANUAL position, then use the MANUAL HOT COLD toggle switch to select a maximum-cold situation. That means holding down the toggle switch for 30 seconds.

Light still on? Then select either left or right engine bleed air, and try to control temperature with the respective thrust lever. Oh, and don't forget to turn off the engine synchronization.

Light still on? Now the drill calls for engaging an emergency air source, then descending. Once at a breathable altitude, select FRESH AIR with the air source knob (this will depressurize the cabin) and make a precautionary landing.

Not all bleed air systems are alike, so be sure you understand the system you fly. One thing remains the same, however: Bleed air overheats can be easy to solve, but if you're having a lousy day they can cause big trouble rapidly. Keep that checklist handy!

Tom Horne is Editor at Large for AOPA Pilot and a 4,500-hour CFII and ATP.



Real Pilot Stories

Lessons from the Cockpit

Fire in the cockpit

Relive a pilot's nightmare

The lesson plan: Dual flight instruction with a CFI candidate.

The problem: Smoke and fire fill the cockpit...



Find out what happens when the certificated flight instructor realizes he has only seconds to land the airplane in this recent installment of ASI's popular Real Pilot Stories series.

When you join the flight in progress ask yourself how you would handle this frightening inflight emergency: Your feet are on fire and the cockpit is full of smoke; you need to find a place to land—right now.

Learn how flight instructor Jade Schiewe coped with this routine training flight as it became a desperate struggle for survival (www.airsafetyinstitute.org/rpsfire).

Performance Vector takes off

Train for safety—minimize human error

BY PAUL RATTE

One of the great things about an aviation career is the tempo. There's a constant hum of innovation and evolution that excites those innately driven to go higher, faster, and farther. While aviation's brisk pace can be intoxicating, it also challenges our ability to stay proficient on both new issues and the fundamentals needed to operate safely.

Safety directors face many challenges. Tight training resources drive a need for programs that go beyond nice-to-have, and actually service the flight department's regulatory or accreditation requirements. Seeking cost-effective and relevant options among a universe of available training programs competes for scarce time and attention from training coordinators who typically wear multiple hats. Finally, delivering training to a team that's constantly flying and seldom together can be tough. With these realities in mind, USAIG is

well-known author and lecturer Dr. Tony Kern. Subscriptions for these courses are assigned to individuals, who can log on and use them at their convenience anywhere they have web access. Five total subscriptions, comprising any combination of "Z-Coach," the "Pilot Reliability" or the "Maintenance Reliability" courses, are free through *Performance Vector* for policyholders who operate turbine-powered aircraft. Additional subscriptions can be obtained at preferred rates.

While subscription-based courseware for individuals can be a great fit for flight organizations seeking to target training on key staff members, some may prefer a more group-focused option. *Performance Vector* offers a human factors webinar series as an alternative to individual subscriptions. Convergent Performance provides six 60-minute webinars, facilitated live (many by Dr.

Kern personally), that rotate through different human factors topics at roughly one-month intervals. When enrolling, organizations can list as many members as desired to receive e-mailed credentials to watch the webinars from wherever they have web access. A 30-day pass to watch a recording of each session is e-mailed

afterward for those who miss live sessions or wish to review them. The webinars are a flexible means to get a group to a common knowledge base of modern human factors thought and best practices, as well as stimulate "hangar flying" discussions after the group shares the presentations.

Performance Vector programs meet regulatory requirements, and are recognized by accreditation protocols such as IS-BAO, NBAA's Certified Aviation Manager program, and the Air Charter Safety Foundation Industry Audit Standard.

Visit www.usau.com/caf_safety_performance_vector.php for a comprehensive overview of *Performance Vector* programs and the requirements met by each. Then, contact your broker to enroll and elevate your safety training program to a whole new level.

Paul Ratte, USAIG director of Aviation Safety Programs, served 25 years as a U.S. Coast Guard aviator, where he logged more than 5,000 helicopter flying hours, commanded two Air Stations, and was twice awarded the Distinguished Flying Cross for lifesaving rescues.

...safety directors can use Performance Vector to confidently plug high-quality programs into the annual training plan in one simple step.

partnering with providers of world-class aviation safety programs and arranging flexible delivery options. Policyholders who operate turbine-powered aircraft can select a complimentary *Performance Vector* training package each policy year. Without needing to exhaustively research programs, requisition funds, or ask for an extra flight stand-down, safety directors can use *Performance Vector* to confidently plug high-quality programs into the annual training plan in one simple step.

The opening focus is on human factors. Fatigue and alertness management are addressed with "Z-Coach" provided by California-based Alertness Solutions. A new, aviation-specific version of this online program summarizes the science behind fatigue, illustrates practical strategies for optimizing alertness in aviation contexts, and provides an array of customizable tools. Also available are "Pilot Reliability" and "Maintenance Reliability" courses provided by Convergent Performance of Colorado. These online courses present professional discipline and error management lessons drawn from the works of

Speak up!

If something does not seem right with a clearance or taxi instruction, question it immediately. In this NASA ASRS report, an alert flight crew's inquiry and decisive action by the tower controller saved the day.

"I was providing training when ground control taxied several aircraft to Runway 14L and 14R and an aircraft to Runway 14L for an intersection Juliet departure. I examined the flight progress strips and noted that a C402 had '14L/J' written on it. Our SOP requires this type of strip marking for an intersection departure.

"It was dark and I could see an aircraft at the intersection of Runway 14L and taxiway



Juliet, but I could not ascertain the exact type. I thought this was the C402 as did the trainee. I distinctly remember the trainee clearing the C402 for takeoff from intersection Juliet since I was listening for the proper phraseology.

"There was traffic on final to Runway 14L and 14R and the trainee and I were looking at the aircraft located at the intersection of Runway 14L and taxiway Juliet. We planned to roll a Shrike Commander from the approach end of Runway 14L as soon as we had the required runway separation. Then an air carrier came on

frequency asking if we had just rolled someone from intersection Juliet.

"There was something unusual in the pilot's voice, so I quickly keyed the microphone and said, 'Yes! What do you see?' The pilot said there was another aircraft rolling from the approach end of Runway 14L. I scanned back down the runway, north of Juliet where the C402 was supposed to be departing, and saw another aircraft rolling at a fairly high rate of speed. I feared the C402 was about to pull out in front of this other departing aircraft. Realizing I really didn't know who any of these aircraft were, I said, 'Everyone stop...Stop...Stop! Cancel your takeoff clearance!'

"The departing aircraft aborted its takeoff and stopped just short of Juliet. I asked who was on the runway and learned it was the C402.

"Everyone stop...Stop...Stop!"

Cancel your takeoff clearance!"

I asked who was at Juliet on Runway 14L and learned this was the Shrike Commander. Ground control looked at the flight strips and saw that the wrong strip had been marked.

"If staffing had permitted, we would have had a standalone supervisor, which would have allowed us to use Line Up And Wait (LUAW) procedures. My trainee would have issued LUAW instructions to the Shrike Commander after clearing the C402 for takeoff, and there is a definite possibility we would have had a runway collision: two aircraft rounding the corner from two different locations with the departing aircraft in back and rolling for departure.

The crew of the air carrier should be commended for speaking up and notifying us that they thought something was amiss. 'If you see it, say it.'"

Airport ops

BY MACHTELD SMITH

There are more than 5,000 public-use airports in the United States. Although most are categorized as non-towered airports, there are some 600 airports that have an operating air traffic control tower.



Chances are you operate to and from both.

Regardless if the airport is towered or not, miscommunication and unfamiliarity with the runway environment have led to some of aviation's worst accidents—on the ground. With this in mind, the Air Safety Institute has produced some powerful safety education materials to help improve everyone's knowledge of airport etiquette.

Good news! You don't have to search for the material in different places—ASI's "Operations at Airports Safety Spotlight" has pulled together just about everything related to airport operations in one easy place. From the recorded webinar, "Conflicts at the Crossroads: Avoiding Runway Incursions" with AOPA Foundation President Bruce Landsberg and a panel of runway safety experts, to ASI's *Runway Safety* online course, you can set aside some time to review ASI's safety advisors and safety briefs as well as related quizzes (www.airsafetyinstitute.org/airportspotlight).

Machteld Smith is a senior aviation technical writer for the Air Safety Institute. She holds a commercial pilot certificate with multiengine, instrument, and seaplane ratings.

IN THE
NEXT
ISSUE

Medical emergency awareness

DID YOU KNOW?

Missed NBAA's convention?

BY MACHTELD SMITH

If you didn't make it to the NBAA Annual Convention in Las Vegas this year, you'll want to come along with *AOPA Pilot* Editor at Large Tom Horne, as he gives you a quick tour of the exhibit hall (www.aopa.org/aopalive/NBAA).

Horne provides a running narrative on the exhibits, which include safety equipment, state-of-the-art avionics, and the latest turbine engine and winglet manufacturers. Need to upgrade your fleet's interior? From seat covers to door latches to coat hooks, the exhibit hall covers it. And if you're in the market for upgraded survival equipment, new lifts, or heavy-duty tugs, the NBAA convention is the place to go.

As Horne ponders the vast number of people involved in business aviation providing services and components to a large number of customers, he wanders into Piaggio's Aero booth, which also has a Ferrari parked in its aisle. If the Avanti has your attention, don't be surprised when you see Ferrari's legendary "Prancing Horse" galloping on a Piaggio Aero P180 Avanti II's fuselage: it flies Scuderia Ferrari's racing team.

Mark your calendar for next year, October 30 to November 1, 2012, when the 65th Annual Meeting and Convention will take place in Orlando, Florida. See you there.

—MAS



ACCIDENT PROFILE

Not so fast!

BY DAVID JACK KENNY

The appeal of flying jets is not mysterious: dispatch reliability approaches air-carrier levels, flight data computers figure takeoff and landing speeds, and autopilots can handle almost everything in between. If they have an Achilles heel, it's that human beings still handle the controls when the aircraft are closest to solid ground, where greater power and higher approach speeds let things go wrong that much faster.

A quick review of the record bears this out. Of 318 accidents in light passenger jets over the past 20 years, more than half (165, or 52 percent) occurred during landing attempts. This is just about double the proportion for all fixed-wing GA, where landings accounted for 26 percent of all accidents during that period. There were also differences in kind: More than 40 percent of landing accidents in jets were overruns. This is eight times more than among pistons or turboprops, where losses of directional control were most common and overruns made up only 5 percent.

Contaminated runways were sometimes involved, but the most consistent cause was excessive airspeed on final. When the airplane was fast and the runway was wet or icy, the results were not surprising. A Cessna 550 touched down 35 knots above V_{REF} on a 4,800-foot runway covered in half an inch of loose snow. Braking action was reported as "fair," but the airplane crashed through a localizer antenna and the airport fence and crossed a road before the gear collapsed. The crew of a Falcon 900 that touched down 22 knots fast on a wet runway was luckier: There was no antenna in their way, so the airplane merely slid off into the mud before shearing the gear. A report of good braking action didn't help the crew of an HS-125 that landed hot in wet snow and ended up astride a solid blast fence with four

galvanized steel uprights embedded in its wings.

These examples illustrate another common factor in landing overruns: the crew's failure to accurately estimate required landing distances under the prevailing conditions. The Citation would have still needed another thousand feet of pavement if it had landed 30 knots slower, and the "slippery runway" adjustment for the Hawker showed that the full length of the runway wasn't enough to guarantee a safe stop. The Falcon crew not only neglected to use performance figures for a wet runway, but landed downhill against the recommendations published in the FAA's *Airport/Facilities Directory*.

Other cases were less complicated but harder to explain. A Lear 25 crossed the threshold at 190 knots and used up three-quarters of the 5,000-foot runway before finally touching down. It went through two

fences and across a road, knocked down two trees, and scattered headstones in a cemetery. Descending from 8,000 feet, a Gulfstream II reached speeds above 300 knots and a descent rate of 4,000 fpm and was still above 200 knots a mile and a half from the field. It floated over 4,600 feet of the 8,000-foot runway, then skidded another thousand feet beyond the departure end. The captain of a Beech 400 ignored his first officer's suggestion that " V_{REF} plus 40" warranted a go-around. After saying, "We're high and we're fast, but we'll be okay," he landed in the runway's last thousand feet, taking out the approach lights and localizer antenna.

David Jack Kenny is manager of aviation safety analysis for the Air Safety Institute, an instrument-rated commercial pilot, and owner of a Piper Arrow.



SAFETY EXPERTS

Industry audit standards

The Industry Audit Standard (IAS) is a revolutionary program built from the ground up by the Air Charter Safety Foundation (ACSF) to set the standard for independent evaluation of an air charter operator's or shared ownership company's safety and regulatory compliance. It was crafted to alleviate the substantial costs and redundancies associated with today's auditing environment—where operators are subject to multiple audits every year that consume precious resources. Following excerpts from ACSF's *Industry Audit Standard* brochure provide these details about the program.

Why the ACSF Industry Audit Standard?

ACSF members and the charter community have expressed concern that their companies are currently subject to numerous audits by third-party aviation auditing companies on behalf of consumers. The preparation for and hosting of these audits has resulted in a significant increase in both staff time and resources

...change in the standards and audit processes is required if the industry is to keep pace with the demands of the marketplace.

to accommodate the various third-party auditing entities, which can be on-site for as little as one day or as much as several weeks.

Operators have expressed concern regarding the variance in the expected operator performance standards by the different audit companies, as well as the degree of competency and knowledge of the individuals conducting the audits.

The aviation community has evolved to the point that change in the standards and audit processes is required if the industry is to keep pace with the demands of the marketplace. Some of the more significant demands include the globalization of the business model, the release and eventual mandatory implementation of a Safety Management Systems (SMS) standard by both FAA and ICAO, and the limited capability of regulatory authorities to provide oversight of the Part 135 and Part 91K community.

It became clear to the ACSF that there should be an industry-wide, single system-safety audit standard that would eliminate the need for repetitive auditing by third-party companies, and would ensure a consistent, high-quality standard throughout the industry.

Will the ACSF audit meet pending FAA and ICAO requirements?

ACSF has worked closely with the FAA and international interests to ensure that its audit standard will accomplish two key functions—first, to verify compliance with regulatory requirements, and secondly, to evaluate the level of compliance with recognized SMS standards. The ACSF IAS assures:

- Quality evaluation of an operator's safety and regulatory compliance: The audit standard was developed with the input and guidance of leading safety auditors, charter operators, shared aircraft ownership companies, and charter consumers.
- That audited and registered operators maintain the highest standards of safety and compliance.
- Participating audit companies and auditors have been accredited by the ACSF.
- Integrity of the audit process is maintained through an independent review board that reviews and approves the on-site audit recommendations prior to a company being listed on the ACSF Audit Registry.

How do I participate?

Three comprehensive documents that operators should review are: *Operator Standards Manual*;

Appendix A: Standards with Incorporated Guidance; and *Appendix B: Regulatory Reference Index*.

Before scheduling an audit, ACSF requires completion of the Pre-Audit Checklist. This comprehensive self-assessment will familiarize the operator with the audit process and help ensure that the operator is prepared for the on-site audit. A copy of the completed Pre-Audit Checklist is provided to the audit team, which allows the auditors to pre-plan their on-site time so as to maximize their time while minimizing the impact to the operator's on-going business.

All documents, including the Pre-Audit Self-Assessment Checklist, are available at no charge at www.acsf.aero/audit. Once the completed checklist is submitted to ACSF, the operator may schedule an audit.

For more information about the Industry Audit Standard, auditor certification course availability, or to schedule your audit please contact Russ Lawton at audit@acsf.aero or call ACSF toll-free at 1-888-SAFE-135.



Human factors

BY BRUCE LANDSBERG

I had the privilege of speaking at the Single-Pilot Safety Standdown held in conjunction with the NBAA Convention in Las Vegas, October 2011. The Standdown featured an entire day of safety programs for owner/operators, and was aimed at how to fly single-pilot better for those who fly their own airplanes for business.

A presentation by NTSB board member Dr. Earl Weener recounted an accident of an overloaded PC-12 that crashed in Montana: The pilot neglected to use anti-icing additives in the fuel and then delayed way too long in diverting to another airport when it became obvious that the aircraft would not stay aloft to the destination. There were 13 fatalities.

My presentation was on runway excursions, a topic of discussion in my Safety Pilot column for *AOPA Pilot* (www.airsafetyinstitute.org/excursions). One area we talked about—a recurrent theme in most of the presentations—was the ever-present human factors.

Here are some for your consideration:

- Ignorance
- Fatigue
- Skill
- Distraction
- Complacency
- Arrogance

To varying degrees, these elements are present in every flight: not every one, every time but at varying times—it's part of the human condition.

Have you thought about which one might be prominent in your cockpit as you fly along, and how you would compensate?

I hadn't looked at these attributes quite that way before. Come to think of it, I can think of circumstances in my own flying where luck was on my side.

How about you? Share your thoughts at USAIGnewsletter@aopa.org.

Safe Flights...

Bruce Landsberg
Bruce Landsberg
President, AOPA Foundation



airsafetyinstitute.org

A division of the AOPA Foundation

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Publishers

David L McKay
President & COO, USAIG

Bruce Landsberg
President, AOPA Foundation

Editor

Machteld A. Smith

Designer

Samantha Duggan

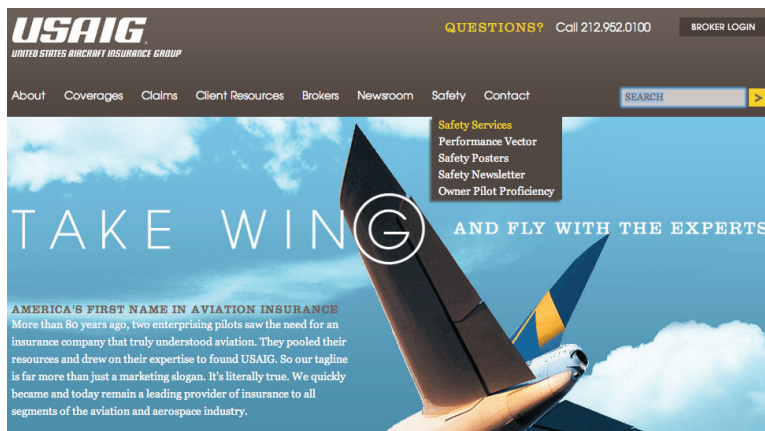
Your feedback is vital to our safety programs, as it helps us hone in on what's most important to you, the operator. USAIG's new web-site (**www.USAIG.com**) offers a convenient new way for us to collect your thoughts or suggestions.

A visit there will provide a great look at all our services, including the new "Safety" tab that outlines our safety programs. All

of the "Safety" pages—including the one where you can go to download all past issues of this newsletter—contain an "Ask a Safety Expert" feature you can use to communicate directly with USAIG's Aviation Safety Programs director. We look forward to your comments on the newsletter or our other safety programs, and advancing *Premium on Safety* in step with your needs and suggestions. Fly smart and fly safe!

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