PREMIUM ON SAFETY

ISSUE 04 YEAR 2010

INSURING SAFE SKIES

IN THIS ISSUE

A MESSAGE FROM USAIG

Greetings!
The arrival of warm weather signals birds and other critters alike to find a cozy spot in your aircraft. These little pests build their imperceptible nests with great panache, and their swiftly built dwellings can be a nuisance, even dangerous, if not deconstructed before flight. We've heard of mice, wasps, snakes, and other vermin finding their way into hangars and airplanes; a startling finding for the unsuspecting pilot during preflight, but gone undetected a dangerous discovery in flight.

Have you had a critter encounter? Tell us your stories so we may share your experiences in an upcoming newsletter.

Safe skies.

David L. McKay
President and COO, USAIG

AIR SAFETY AOPA FOUNDATION

USAIG® UNITED STATES AIRCRAFT INSURANCE GROUP

CAIG® CANADIAN AIRCRAFT INSURANCE GROUP

Critter woes

Uninvited guests may lead to in-flight issues

BY ROB FINFROCK

With summer upon us, now may be the right time for a refresher on the birds and the bees, and the havoc they may bring upon our aircraft.

Any unplugged vent, intake, or other opening on a parked aircraft gives critters the chance to make that space their home. If an aircraft sits unattended for any length of time—even overnight—that gives ample opportunity for birds, mice, and other small animals to take up residence.

What's the risk? If left unnoticed, animal nests may restrict airflow through an airplane's engines, or hinder the free movement of the aircraft's controls. Debris from the nest—twigs, mud, and don't forget the animals themselves—will cause significant damage if they pass through delicate turbine blades, and may even lead to engine or electrical fires.

That said, incidents of bird or mice leading to difficulties on turbine aircraft aren't very common, compared to the piston fleet. Higher utilization rates for turbines mean less time on the ground for those pests to take up residence; also, those aircraft are often hangared when not in use. While those factors certainly don't eliminate the risk, they do reduce the chances for nesting animals inside a corporate aircraft, over a weekend flyer's piston-powered Cessna.

A more persistent issue may be of the insect variety. Flying pests such as bees and wasps are attracted to several things on an airport ramp—from the bright colors of intake covers and even aircraft paint schemes, to the scent of aviation fuels. Did you use a citrus-scented cleaner to touch up the cabin before that next charter? You may want to take a cautionary glance around your aircraft before departing on the next trip leg...or, listen for buzzing.

If that sounds a bit farfetched, take heed of a May 2006 incident on the ramp at California's Bob Hope Burbank Airport. Pilots walking to their Beech King Air 200 were stunned to discover a swarm of bees nesting on their aircraft. The airport's fire department responded by spraying affected areas of the aircraft's exterior with fire retardant, while the pilots took a vacuum cleaner to several adventurous drones that managed to make their way inside the cabin. Those measures curtailed the bees' activities, but that wasn't the end of it. After the aircraft completed an uneventful charter leg to San Francisco, followed by a quick repositioning flight to Sacramento, technicians were

(continued on page 2)

DID YOU KNOW?

FAA'S NEW TAXI PROCEDURES

An important change in taxi clearance phraseology and procedures took place on June 30, 2010: The familiar "taxi to runway" clearance, which allowed you to taxi across all runways intersecting your path to the takeoff runway, has been dropped from ATC parlance. Instead, now you will receive a specific clearance to cross each runway.

Getting to the runway
The clearance starts with the assigned runway, then specifies the taxi route and any initial runway crossing and/or hold short instructions. For example: "Cessna Four-Golf-Alpha, Runway 36L, taxi via Alpha, Charlie, cross Runway 13, hold short of Runway 27." If multiple runways intersect the route to the takeoff runway, the controller will not issue all the crossing clearances at once. An exception may be made in cases where the distance between two runway centerlines is less than 1,000 feet.

Taxi to the gate
"Taxi to" will be used when instructed to taxi to the ramp or gate, but you will receive specific crossing instructions for each runway encountered on the taxi route.

The bottom line
Whether an aircraft is inbound or outbound, controllers are required to issue a specific clearance for each and every runway crossed or operated on. The FAA expects to incorporate these changes in the August 26 edition of the *Aeronautical Information Manual.*

More information
For more details and a few real-world examples of the changes visit the website ***(www.aopa.org/taxichanges)***.

--MAS

Critter woes (continued from page 1)

shocked to discover a thick layer of dead bees covering the inside of the engine cowling...and even a few live ones that managed to survive their short excursion up into the flight levels.

Insects also have a way of making their presence known, even after they've flown away. Two persons onboard a Piper PA-60 Aerostar were fortunate to walk away from a November 2000 takeoff incident. Departing IFR from Preston, Minnesota, the pilot stated airspeed failed to increase above 115 KIAS in the climb. Wary of raising the nose further and risking a stall, the pilot waited until the last second to pull up, and clipped treetops at the end of the runway. With the airplane still flyable, the pilot diverted to Quad City International Airport in Moline, Illinois, where he made an uneventful landing. During the trip, the pilot verified the airspeed indicator was displaying false readings. "I had a problem six weeks ago with a mud dauber wasp building a nest in the pitot tube," the pilot admitted to investigators with the National Transportation Safety Board (NTSB), adding "But this had been cleared out, and the aircraft flew several times since."

Such incidents aren't limited to piston-engine aircraft, either. The NTSB determined the 2006 runway overrun of a Dornier 328-300 twinjet in Manassas, Virginia, was because of the late decision to abort takeoff, when the flight crew experienced a discrepancy between the pilot's and copilot's airspeed readings.

"Examination of the pitot static system revealed that the captain's airspeed indications were lagging behind the first officer's airspeed indications," the NTSB determined, "and that the captain's pitot tube was partially blocked by the remains of an insect nest." Of note, the NTSB added the aircraft was not hangared when parked, and that "covers for the pitot tubes on the accident airplane were not available."

So, what can pilots do to reduce their risk of having uninvited guests cause problems on their flight? As with many potential issues, the answer is a diligent, thorough preflight inspection. This starts with taking notice of any bird or animal droppings underneath the aircraft—telltale indicators something may have gotten inside your airplane.

Technicians were shocked to discover a thick layer of dead bees covering the inside of the engine cowling...and even a few live ones that managed to survive their short excursion up into the flight levels.

When looking inside the engine cowling, don't just look for fluid leaks and obvious signs of wear. Use a flashlight to shine a light on the depths of the nacelle assembly for signs of nesting, too.

Finally, be sure to pay careful heed to your aircraft's pitot-static system. If any contamination is noted, simply clearing out what you can may not be enough. Have a technician inspect the system as well...even if that means a delayed flight. It's better to be safe than sorry.

Rob Finfrock is a licensed sport pilot, and formerly managing editor of an online aviation news service.

Safety Brief
Turbine pilot: Single-pilot safety
The risks of riding solo

BY THOMAS A. HORNE

There are a number of reasons why turbine flying is safer than operations involving piston-powered airplanes. For one, turbine pilots usually attend thorough, structured, simulator-based training designed around the type of airplane they'll be flying; after all, insurance companies require it in order for pilots to be covered. In addition, turbine powerplants, owing to their comparative simplicity of design, are more reliable than piston engines. Then there's a recency-of-experience factor at work. Many turboprop and turbofan airplanes serve in air taxi, charter, fractional, and cargo-hauling fleets. This means that their pilots fly on a regular basis.

But to be more specific, what about single-pilot turbine operations? Has the record shown that single-pilot (SP) flying is more risky than flights with two-pilot crews? In a word, yes. Robert E. Breiling Associates, an accident analysis firm based in Florida, has been compiling accident data on turboprop and turbofan airplanes since the 1960s. Breiling's annual compilation of business aircraft accidents has become a standard reference tool in the business aviation community.

Breiling gets his data from the FAA, the NTSB, aviation underwriters, AvData Inc., and manufacturers. Using reported active fleet sizes, fleet hours flown, and accident categories, he draws his own conclusions about the status of business aviation safety. His annual review of 2007's business turbine accidents was published in June 2008. This represents a more timely accident review than that put out by the NTSB, which can take two years or more to finalize its accident data.

What follows are his deductions concerning the comparative statistics between single-pilot and two-pilot accidents—for both turboprops and jets.

SP-flown turboprop twins—150 percent more risky?

Breiling has determined that 78 percent (41 accidents/incidents out of 71) of the 2007 U.S. mishaps involving turboprop aircraft certified for single-pilot operation took place while the aircraft was flown by one pilot. What's more, he says that, over the past 10 years, 73.6 percent of all turboprop accidents involved single pilots. Yet a fleet survey shows that about 62 percent of the total turboprop fleet are SP-operated.

From 2003 through 2007, Breiling says that the numbers show a 76.4 percent representation of SP turboprop accidents. This, he says, implies that a single pilot has over 1.5 times the chance of having an accident. It's important to note that the above data refers to turboprop twins certified for SP. They do not include single-engine turboprops flown in SP operations. "It wouldn't be fair to lump the twin turboprops with the single-engine turboprops for accident analysis," Breiling says. "There isn't enough data available yet on hours-flown for single-piloted, single-engine turboprops. What information there is comes from the manufacturers."

What is known is that turboprop twins flown in corporate/executive operations by professional crews were involved in two accidents (one of them fatal) and 11 incidents in 2007. During the same period, in the owner-flown category there were 13 accidents and 17 incidents resulting in 20 fatalities. Air taxi and charter turboprop twins had 15 accidents and 13 major incidents in 2007, yielding a total of 17 fatalities.

What went wrong

Of all turboprop crashes in 2007, 42.7 percent happened in the landing phase, 16.7 percent were in climb, 10.4 percent while taxiing or parked, 9.4 percent in the approach phase, 8.3 percent in cruise, 7.3 percent during takeoff, 4.2 percent while maneuvering, and 1 percent during descent.

Pilot action (or inaction) was blamed for 45 percent of all business turboprop accidents in 2007, so there's nothing really

(continued on page 4)

Real Pilot Stories

Lessons from the Cockpit

Engine failure at night

Imagine you're flying at night when the engine suddenly sputters and explodes—10,000 feet above the dark Pennsylvania countryside.

Manny Kanal doesn't have to imagine. That's exactly what happened to him flying his turbo charged Cessna 400 Corvalis TT from White Plains, New York, to Pittsburgh, Pennsylvania.

In "Engine Failure at Night," Kanal shares his story and how he coped with the emergency. The multimedia presentation includes actual ATC communications, images of the burst engine, and tips that might save you in a similar situation ***(www.asf.org/enginerps)***.

Safety Brief (continued from page 3)

surprising there. What is of concern is that the factors contributing to 28.2 percent of accidents involved mechanical, maintenance, or manufacturer design problems—with landing gear system malfunctions leading the pack. Airport and runway conditions, plus unknown causes, round out the list of 2007 probable causes.

Single-pilot jets

The biggest SP-certified fleets in this category belong to several of the Cessna Citation types, including the Citations 500, I/SP, II/SP, the CitationJet series, and the Mustang. Next come the Hawker Beechcraft Premier I and IAs, followed by the Eclipse 500 jet.

Breiling says that it's difficult to identify the number of SP-certified jets actually being flown single-pilot because many SP jets are bought SP-certified to enhance resale value, but are seldom flown that way. Insurance underwriters and training firms give widely varying estimates as to how many such jets are flown single-pilot, so it's hard to know what the SP accident exposure rate really is.

As a best effort, Breiling compared SP-certified Citation accident profiles with those of two-crew-certified Citations, and looked at the years from 1972 (the time of the introduction of the first SP Citation) to 2007. He concluded that the total accident rate per 100,000 flight hours (the standard measure for accident rates) of single-piloted Citations is 2.7 times greater than that of two-crew Citations—and that the fatal accident rate is 3.7 times greater than two-crewed Citations.

The Premier I and IA airplanes—both of which are SP-certified—have had seven non-fatal accidents since their introduction in 2001, all of them in the landing phase. Many involved runway overshoots where ground spoilers failed in early models.

The problem with the latest phenomenon—light jets and very light jets (VLJs)—is a lack of data. The fleets of these airplanes are relatively small, and these airplanes haven't accumulated enough time in service to produce meaningful data regarding accident types and causes. The Cessna Mustang, which went into service in 2006, had a fleet of 40 airplanes but only one (non-fatal) accident in 2007. This happened when a temporary registration number pasted over a fuel vent caused the fuel tank and wing to distort. The airplane landed without further incident. As for Eclipse jets, 81 were delivered in 2007, but no accidents were recorded until this year. Eclipses have been involved in several incidents, however. Most notable was a software malfunction that caused an engine to remain at full power after a go-around.

So although single-pilot-certified turboprops and jets continue to build in popularity, the statistics appear to confirm the notion that single-pilot operations create higher workloads and greater demands on pilot skill when the chips are down and stress levels run high. The old adage that two heads are better than one seems to hold true in turbine operations.

As for VLJs, the jury is still out. Perhaps by this time next year we'll be able to identify some useful trend information based on bigger fleet numbers and higher utilization. But until then, prepare for the usual when it comes to any airplane accident scenario. The landing phase is consistently the most dangerous, with the IFR approach phase coming in a close second. And be sure the landing gear of your turbine airplane is well maintained.

For more detailed information on business turbine accident involvement, consider obtaining a copy of Breiling Associates' Annual Review. The price is $320. Contact Robert E. Breiling Associates, 765 N.E. 35th Street, Suite B, Boca Raton, Florida 33431; ***www.breilinginc.com***.

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

IN THE NEXT ISSUE

LOW-VISIBILITY OPERATIONS

What's Your Strategy?

Accident Profile: Fogged out

BY DAVID JACK KENNY

Accidents that take place in fog tend to be severe. One of two things typically happens: Either the aircraft flies into something solid the pilot can't see, or the pilot loses control of the aircraft before it hits the ground. Consequences are dire either way.

The Leesburg (Virginia) Executive Airport reported one statute mile visibility on the afternoon of March 1, 2003, with a two-degree temperature/dew point spread. At 2:20 p.m., the ceiling was 500 overcast—a little above the 338-agl MDA for the localizer approach to Runway 17. At 2:29, the pilot of a Socata TBM-700 inbound from Greenville-Spartanburg told the approach controller that he had the current Leesburg weather. At 2:40—about the time that an updated METAR reported a 300-foot overcast with visibility still one mile—the controller told the pilot to intercept the localizer. A minute later the TBM was cleared for the approach and a change to the local advisory frequency.

Its radar track showed a series of S-turns across the localizer course. The airplane descended 100 feet below the segment minimum outside the final approach fix, and then maintained that altitude over the FAF. Its ground speed decreased from 130 knots to 80 in just two miles. By this time, three miles from the field, it was 300 feet below the last step-down altitude. Over the next few seconds, the airplane began turning left, opposite the direction of the published missed approach. Its ground speed decayed to 68 knots and it descended another 100 feet before radar coverage was lost.

By this time, the TBM was below the MDA while still outside the step-down fix. Two witnesses reported hearing the airplane without ever seeing it through the fog; one estimated visibility as less than 100 feet. However, at least four others did see the airplane and told investigators that after descending out of the overcast, it banked hard left while pitching up sharply. The nose dropped and the airplane went into the trees, killing all three on board. The NTSB attributed the crash to, "the pilot's failure to fly a stabilized, published instrument approach procedure, and his failure to maintain adequate airspeed which led to an aerodynamic stall."

The left-seat pilot was relatively inexperienced to be operating a pressurized turboprop; his most recent medical application, submitted seven months earlier, had reported 730 hours total flight time. Perhaps for that reason, the airplane's insurance required that he fly it with a copilot. In the right seat was an 8,000-hour ATP with type ratings for four transport-category aircraft and instrument and multiengine instructor ratings. Both had completed a commercial TBM-700 proficiency course less than three months before the accident.

There is no direct evidence as to which pilot was actually flying; nor is it clear why the copilot did not notice and correct the premature descent. The overcast and low visibility left little margin for error—and were implacably unforgiving of too little precision in flying a non-precision approach.

David Jack Kenny, manager of aviation safety analysis for the AOPA Air Safety Foundation, is an instrument-rated commercial pilot.

Data Diving: Fog accidents, 1998—2007

The NTSB found fog (including mountain obscuration and visibility below IFR approach minimums) caused or contributed to 292 GA accidents. More than 70 percent (211) were fatal, causing 386 deaths. Accidents involving fog occurred on commercial and non-commercial flights alike. Some were operating on IFR flight plans, some on VFR flight plans, and many on no flight plan at all.

Commercial flights (Parts 135 and 137):

Aircraft category	Flight plan	Accidents	Fatal accidents	Fatalities
Airplane	IFR	12	7	9
	VFR	4	2	3
	Company VFR	5	2	7
	None	5	5	6
Helicopter	IFR	0		
	VFR	1	1	2
	Company VFR	8	3	10
	None	2	1	4

Non-commercial flights (Part 91 and public-use):

Aircraft category	Flight plan	Accidents	Fatal accidents	Fatalities
Airplane	IFR	66	49	93
	VFR	27	22	43
	Company VFR	1	1	3
	None	138	104	176
Helicopter	IFR	1	1	4
	VFR	1	1	1
	Company VFR	7	3	7
	None	12	9	18

ASF ONLINE
Risk assessment

Airline pilots consult company guidelines when it comes to go/no-go decisions for any given flight. But general aviation pilots are mostly left to their own judgment when deciding about an upcoming flight. And pressure from work or passenger schedules can influence that decision and make it outright difficult to adequately assess the flight's safety. Wouldn't it be nice to be able to tap into a knowledge base to sort out the risk factors?

Enter the AOPA Air Safety Foundation's Flight Risk Evaluator, recently launched on ASF's website. This nifty application provides general aviation pilots with a formal approach to judge the safety of a proposed flight. The go/no-go choices are still up to the pilot—and because the feedback is based on the pilot's profile and expected flight conditions, the decisions are meaningful to the planned flight operation.

The Flight Risk Evaluator is made up of three sections: an entertaining introduction to learn about flight risk elements; a quick evaluation and personalized list of guidelines based on just a few details; and a detailed evaluation, which rates the flight's safety across several areas based on more extensive information about the runway, airport environment, weather, aircraft, and pilot proficiency.

Risk evaluation and management is crucial to the safety of every flight, whether you have logged thousands of hours at the flight levels or recently joined a more complex flight operations setting. Go online ***(www.asf.org/flightriskeval)*** before your next flight.

—MAS

DID YOU KNOW?

SMS & FLIGHT OPS

BY CHIP WRIGHT

Aviation has undergone a series of transformational changes in its history. It began with risky, uncertain technologies, and the result was a mix of excitement and a high accident rate that was due more often to mechanical failure than to human error. In time, the mechanical failures were solved, or at least minimized, through better engineering and studies of the high-risk types of accidents. That specifically meant the ability first to withstand turbulence as well as severe weather avoidance, followed by minimizing low-altitude accidents (takeoffs and landings).

Most accidents can now be placed largely on the shoulders of the organizational and individual operators. Pilots continue to make poor decisions regarding weather while demonstrating poor risk management and analysis skills.

The FAA and industry, through the International Civil Aviation Organization (ICAO), are making an effort to blunt as much as possible the human factors elements that contribute to accidents. Using a tool called Safety Management Systems (SMS), the intention is to create a top-down culture within each flight department or company to prioritize safety both vertically and horizontally, so that the entire organization is equally responsible, and perhaps more importantly, equally invested, in safety. Each person is encouraged to learn and point out potential risks, no matter how insignificant they may seem. Further, each individual is to be equally open to the inputs of others. Safety and profit are to be treated with equal importance, with the realization that a gain or loss in one can have significant consequences in the other. If you want non-aviation proof, look at what BP went through with the Gulf oil spill.

Both the FAA and NBAA websites have a wealth of information on what constitutes a solid SMS, as well as how to implement one that will meet upcoming regulatory requirements ***(www.faa.gov/about/initiatives/sms/*** and ***www.nbaa. org/admin/sms/)***.

Chip Wright is a CFI, ATP, and a Canadair Regional Jet captain for Comair.

Turbine Trouble: Jet engine vs. volcano

BY MACHTELD A. SMITH

On the morning of December 15, 1989, a Royal Dutch Airlines (KLM) Boeing 747-400 carrying 231 passengers and 14 crew prepared for arrival at Anchorage International Airport, Alaska. As KLM flight 867 descended from FL 390 the crew received ATC vectors to avoid the last known area of an ash plume blown from Redoubt Volcano some 150 miles away. But, while descending through FL 260, the 747 got in trouble:

KLM 867: *KLM 867 heavy is reaching FL250, heading 140.*

Anchorage Center: *Do you have good sight on the ash plume at this time?*

KLM 867: *Yeah, it's just cloudy. It could be ashes. It's just a little browner than a normal cloud.*

KLM 867: *...we have to go left now...it's smoky in the cockpit at the moment, sir.*

Anchorage Center: *KLM 867 heavy, roger, left at your discretion.*

KLM 867: *Climbing to level 390, we're in the black cloud, and the heading is 130.*

KLM 867: *KLM 867, we have a flameout all engines and we are descending now.*

KLM 867: *KLM 867 heavy, we are now descending, now...we are in a fall!*

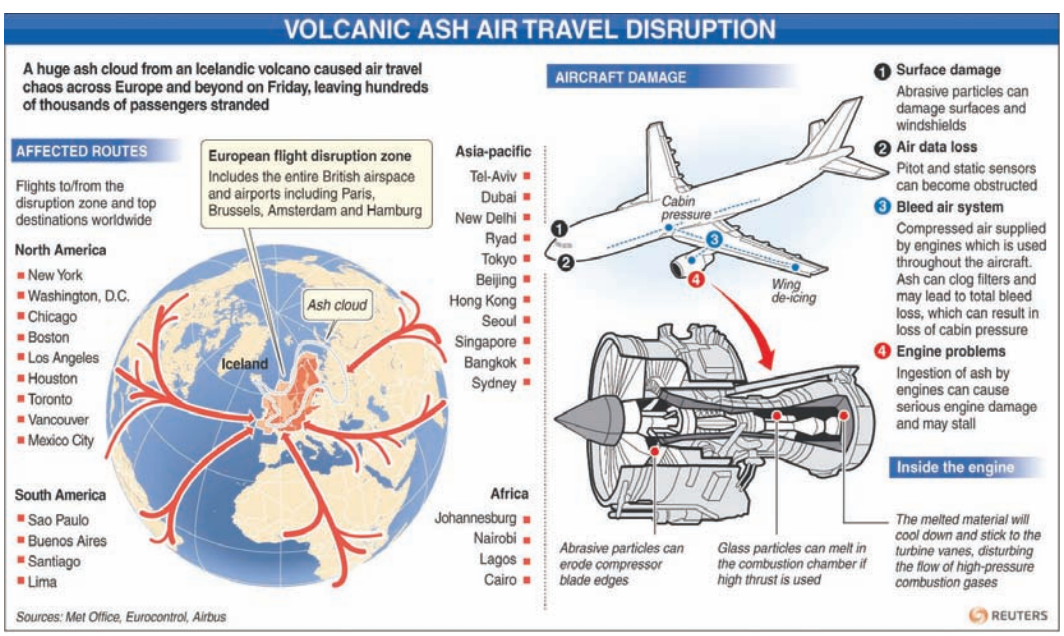
While the crew attempted several engine-restarts, KLM flight 867 plummeted more than two miles—dropping from 27,900 feet to 13,300 feet. Getting close to the Talkeetna mountain peaks, the pilot was finally able to start all four engines and nurse the crippled jet to Anchorage.

Before takeoff from Amsterdam, the Netherlands, the crew had received advisories of volcanic eruption some 100 miles southwest of their destination. En route, they received an advisory for a second eruption. But ATC radar could only detect volcanic ash for a five- to ten-minute period after eruption. Meanwhile, the ash cloud had been forecast to move north-northeast at 60 knots, but satellite later showed it actually had moved at a speed of about 120 knots.

No one on board was hurt, but the ash blast filled the cockpit with smoke and eroded windows, fuselage, wings, and engine nacelles. The engine flameout caused electrical power interruption, loss of airspeed indication, and a forward cargo area fire alarm.

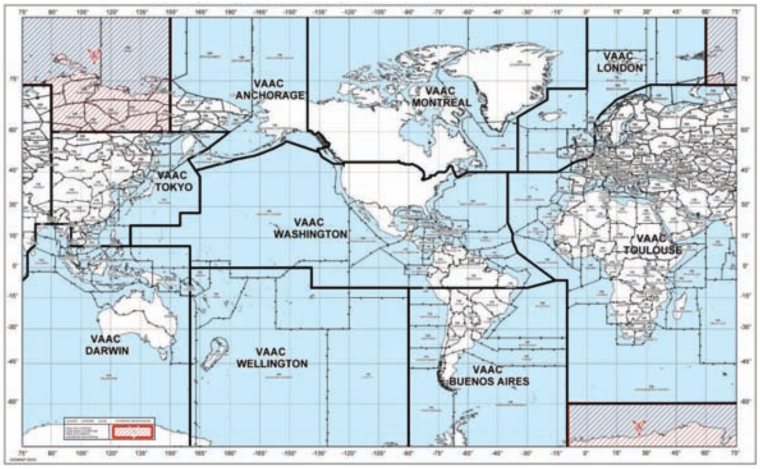
The NTSB cited "lack of available information about the ash cloud to all" as a related factor in this accident. Since then, U.S. government agencies such as the U.S. Geological Survey—which had begun to address hazards posed by airborne volcanic ash in the North Pacific when it established the Alaska Volcano Observatory (AVO) in 1988—and NOAA's NWS and the NESDIS have stepped up research and analysis of volcanic ash phenomenon. They are now crucial in providing pilots accurate forecasts and warnings of volcanic eruptions (See "Safety Experts" on the next page).

Machteld Smith is a senior aviation technical writer for the AOPA Air Safety Foundation and a multiengine instrument-rated commercial pilot.



Safety Experts:
NOAA—analysis, tracking, and forecasting volcanic ash

BY JEFFREY OSIENSKY



NOAA's National Weather Service (NWS) and National Environmental Satellite Data and Information Service (NESDIS) is the global leader in providing volcanic ash information. Volcanic ash, which is highly abrasive, damages the airframe and windscreen—and most critical, it may cause damage to the aircraft engines. Two notable volcanic ash encounters in the 1980s (British Airways over Indonesia in 1982 and KLM over Alaska in 1989) had all four engines flame out for a time before successful restarts allowed safe landings. Since then, many researchers have studied the effects of volcanic ash on aircraft.

The United States has a "zero tolerance" rule with respect to volcanic ash and aircraft operators are urged to avoid ash. The warning product issued by a Meteorological Watch Office (MWO) is the Volcanic Ash SIGMET (WV). These "warnings" are issued for periods of up to six hours and define an area of volcanic ash. The ash is usually identified through remote sensing techniques—most often through satellite imagery. There are three MWOs in the U.S.: Kansas City, Anchorage, and Honolulu.

The office responsible for the analysis and detection of volcanic ash is the Volcanic Ash Advisory Center (VAAC). There are nine international VAACs serving most areas of the globe. In the United States there are two VAACs (Washington, D.C., and Anchorage, AK). VAAC's forecasters are responsible for issuing Volcanic Ash Advisories (VAA) for areas of observed and forecasted ash. The forecasts are available out through 18 hours. VAACs run volcanic ash dispersion models to help determine where ash plumes will travel based upon winds aloft. There are several ash dispersion models; however, the official model is known as HYSPLIT ***(http://ready.arl.noaa.gov/READYVolcAsh.php).***

Volcanic ash is considered a hazard to aviation due to its abrasive and melting/congealing nature. It may block intakes, cause false instrumentation readings, and produce an acrid and dusty condition in the cockpit and cabin. In a worst case scenario, ash may seize aircraft engines and cause the plane to crash. Airline pilots are trained in how to deal with the hazard in the event they encounter an unexpected ash cloud.

Meteorologists have several tools available to help detect volcanic ash. Satellite imagery, radar data, and pilot reports (PIREPs) are some of the most common data used. Model output combined with this data helps to make the most accurate and timely forecast for the aviation community. Meteorologists work closely with volcanologists and seismologists from the Volcano Observatories (VO). The VO provides seismic and other precursory information to the meteorologists and air traffic authorities. Once a volcano erupts, the VO and meteorological authority collaborate and inform the aviation authorities of changes in the character of the ash plume.

Volcanoes erupt frequently across the globe. At any one time, there may be at least one volcanic eruption taking place somewhere on earth. Recently, the eruption of Iceland's Eyjafjallajökull volcano caused major disruptions to air travel across the North Atlantic and Europe. Several eruptions over a multi-week period caused the industry to lose well over two billion dollars in revenue. Airlines, engine manufacturers, and meteorological and aviation authorities have taken this opportunity to discuss the impact and attempt to determine a safe threshold for operating in volcanic ash. This will continue to be explored and may eventually lead to agreed upon standards. For now, the United States continues a "zero tolerance" operation when it comes to volcanic ash.

The bottom line? Provide a safe operating environment to our nation's airline and aviation industry by providing the most accurate and timely forecasts of volcanic ash plumes to flight operations.

Jeff Osiensky is the National Weather Service Volcanic Ash Program Manager and the team lead for NOAA's Volcanic Ash Services ***(www.noaa.gov).***

Look at all it does

BY BRUCE LANDSBERG
President, AOPA Air Safety Foundation

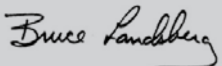
The more deeply I get involved with advanced technology the more appreciative, yet cautious, I become. The glass cockpit of today is truly marvelous although there are times when the complexity makes me wonder what the designers were thinking. It sometimes takes two knob twists and four button-pushes to access something that used to have its own dedicated controls. Then it was one knob twist and maybe a button push. Downside was it took more space.

The manuals, if anyone still uses them, have gotten much thicker and simulation is almost essential to really learn something and stay proficient with it. If you're flying daily and in the same aircraft it's a good bit easier, but the weekend warrior or renter has a tall hill to climb.

The manufacturers often say "But look at all it does." My feeling is the same as it is to most computer software—I don't need but 20 percent with gusts to 35 percent. Time, speed, bearing, distance, and altitude are essential—beyond that we're getting into nice-to-know. Despite sounding a bit curmudgeonly, I've learned and used five different FMS/GPS systems in IMC conditions so perhaps my Luddite standing isn't quite deserved...yet. The new systems are better but a favorite quote from Antoine de St.-Exupery: "A designer knows he has achieved perfection not when there is nothing left to add, but when there is nothing left to take away."

We're not there yet.

Safe Flights...



Bruce Landsberg
President, AOPA Air Safety Foundation

www.asf.org

421 Aviation Way
Frederick, Maryland 21701

USAIG
AMERICA'S FIRST NAME IN AVIATION INSURANCE

212.952.0100 ph
212.349.8226 fax

www.usaig.com

Publishers
David L. McKay
President and COO, USAIG

Bruce Landsberg
President, ASF

Editor
Machteld A. Smith

Designer
Angie Ebersole

Premium on Safety: Data Diving—Gear-up accidents

I thought the item on gear-up accidents (*Data Diving*, Issue 03) was misleading because you didn't define *accident.* The low numbers that you used are accidents recorded by the NTSB, but understate the frequency of gear-up landings by thousands of percent. There is an average of one gear-up per day on the FAA's preliminary accident and incident report, but almost none of those rise to the NTSB definition of accident. However, every one of them results in an insurance claim.

So, instead of 234 gear-up accidents in 10 years, there were more like 3,650 if *accident* is used in the normal sense, not the NTSB term you used without defining it. The NTSB database is useful, but it misleads as much as it sheds light.

—*Mac McClellan, New York*

David Kenny responds:
Point well taken, and allow me to clarify. While I agree that numerous gear-ups don't meet this criterion, the only outcome that's reported consistently enough to support statistical analysis is accidents by the Part 830 definition. This is limited to events that cause "substantial" damage to the aircraft, but the NTSB does not consider damage to landing gear or belly skins "substantial." *Insurance companies regard their claims data as proprietary, and reporting to the FAA incident database is inconsistent and incomplete. The FAA preliminary reports do provide a snapshot of gear-up incidents in real time, but only remain available for two weeks after they're filed, and to the best of my knowledge are not archived anywhere.*

Are there topics you'd like to see covered? Send suggestions to: ASF Editor, *Premium on Safety*, 421 Aviation Way, Frederick, Maryland 21701, or asf@aopa.org. We welcome your feedback as we plan upcoming editions.

—*The Newsletter Team*

Premium on Safety is published for the United States Aircraft Insurance Group (USAIG) by the AOPA Air Safety Foundation (ASF) © 2010. We welcome your comments. Address letters to: ASF Editor, *Premium on Safety*, 421 Aviation Way, Frederick, Maryland 21701. Send e-mail to asf@aopa.org. Please include your full name and address on all correspondence, including e-mail. Letters will be edited for length and style.