THE CHARTERS SAFETY CHRONICLE

1st Quarter 2020

OK, So Where's The Runway?

We have reached the end of a uneventful night's flying. Our destination is an airport with a part time control tower and the tower is currently closed. There is some lightning on the south side of the airport, but the ASOS is giving the weather as "Wind 14005 KT, 2 1/2 SM –RA BR, BKN005 OVC010". So there is a little drizzle and mist, but the ceiling is above minimums, so we should be fat. Just have to watch the weather on the miss.

As we rocket down the approach, the non-flying pilot calls out "runway in sight" and, just as the flying pilot starts to transition outside, the whole airport disappears in a wall of heavy rain. As we execute the miss, the far end of the runway reappears in some light drizzle and mist. A recheck of the ASOS reveals no change in the weather reported at the field.

What the heck happened here? Well, the ASOS is doing exactly what it is designed to do, report weather at its location. The only problem is that the ASOS is not located anywhere near our intended runway. In the USA this is a very common occurrence.

Back in the day, weather was reported by a human. That human was required to scan representative portions of the horizon and sky to produce prevailing visibility and ceiling. If a significant portion of the horizon or sky was different than the prevailing values, it was noted in the report or ATIS.

Enter the computer age. Entering the 1990's technology and cost reached the level where replacing the humans with automated observation systems become reasonable and cost effective. Today, most airports are equipped with either an ASOS (Automatic Surface Observing System) or AWOS (Automated Weather Observing System). ASOS is the standard a all large and mid-sized airports and AWOS, being less expensive, is more common at smaller airports that are maintained by local airport authorities.

However, bureaucrats do not necessarily see all the pitfalls of a when intended program. AWOS and ASOS standardize the reporting criteria across many airports and free up the humans for other tasks. But, they only observe a limited portion of the horizon and sky.

The FAA tried to locate ASOS stations as close as possible to the most active touchdown zone of the airport's primary runway. But, practical considerations, such as obstacles that affect wind flow, proximity to surfaces that skew the temperature and sheer number of runways to choose from (think O'Hare), make ASOS location somewhat subjective. When faced with the issues noted above, the most common alternative location was to place the ASOS at, or near, the airport reference point. To give that some perspective, in Atlanta, if you were landing on runway 10, you are 1 3/8 nautical miles from the ASOS station.

Runway?.....cont

While ASOS has up to three ceilometers, each one is capable of only looking at a portion of the sky. And, the visibility transmitter is located quite close to its receiver. If the ASOS is located on a slight rise, it might never see the fog blanketing the lower lying runway area.

ASOS is a wonderfully accurate device, but it is important to recognize that the weather you read on a METAR or listen to on the ATIS may be very different from the view out the window when you get to minimums.

Reverse CRM

Thought that would get your attention. "What does he mean by that?" is probably rolling off your lips about now. Well, read on and see if this sounds familiar…

We all know what CRM is. Every year we sit through recurrent training and see the same videos and hear the same stories about how non-assertiveness and bad CRM by the captain got the crew of (you pick your favorite accident) killed. However, there is a flip side to this. I like to call it "Reverse CRM". That is where two perfectly competent pilots talk each other into doing something that neither one would have signed up for on his own.

Picture this. You are operating into a New York area airport. As is the prevailing custom, you have been instructed to descend to about 10 feet and cross 8 million miles from the airport level at said 10 feet. And, stand by for holding instructions. New York center tells you to "Hold north of Somewhere on Victor 123. Expect further clearance eventually." A quick check of the flight plan confirms that neither Somewhere, nor Victor 123 are part of your route of flight.

Your workload has just increased about 500%. First, grab the low chart and find Victor 123. Turns out it is the same as the Jet Airway you are flying. Good. And Somewhere is 4 miles in he say anything about a turn direction?" you ask your fellow pilot. "No." "Okay, that means standard turns, and that is left, right?" you ask with absolutely no confidence. The other pilot, who was kind of leaning towards right turns, but was hoping to Phone a Friend or Ask the Audience, gets a little more confidence and says "Yeah, that's it, left turns, final answer."

About 30 degrees into the left turn, the first pilot starts to see a flicker in his Career Dissipation Light and decides that he needs a way to ask Center about the proper direction for a standard holding pattern without sounding like an idiot. "Center, Kalitta 456, did you want left or right turns at Somewhere?" Center responds with "Right turns."

Both pilots give each other that "uh-oh" look and deftly turn to the right to enter the hold using the "dinosaur head" holding pattern entry. (draw it and you will get the idea). The remainder of the conversation is devoted to figuring out where the NASA forms are in the paperwork kit.

So what happened here? Start with the procedural stuff. First, You always need to have ALL of the relevant charts close at hand. ATC thinks nothing of giving you an obscure airways clearance at the drop of a hat. The controllers assume that you have all of the charts open and are keeping very close tabs on our progress. (We all do that, right?) In addition to the high chart, you need to have the low and terminal charts out anytime you are below 18,000 feet, or heading there. Second, if you cannot execute a clearance, don't accept it. ATC should realistically give you at least 3 minutes prior to the holding fix to setup for the hold. This is implied in the Airman's Information Manual under holding (see AIM 5-3-7d). When the pilots discovered that they were only seconds from the fix, they should have told ATC that they refuse the clearance. You don't have to be ugly about it. Something like "Center, Kalitta 456 needs a little more time to set up the hold, can you give us a vector?" would work just fine, even in New York.

Reverse CRM cont.

Now we add in the power of suggestion. The "Reverse CRM" factor.

…..Continued on Page 3

One pilot is not sure and looks at his partner for help, saying "I think it is left turns". The other pilot does not interpret this as a question, but as a statement. His original instinct was for right turns, but with the PIC suggesting left turns, he is not so sure. He thinks for a couple seconds and then says "Yep, left turns". That is all it takes. We see this happen in our everyday lives, out of the cockpit, too. Try having a conversation with your wife about paint colors and you will get the idea.

The above occurrence is one that did not have great potential for catastrophe. But, toss in a non-radar environment and move the holding location from New York to Mexico City and a wrong direction turn could really have an ugly result. CRM is not just about making nice in the cockpit and seeking opinions from the entire crew. It is about recognizing when someone is unsure. It is about making sure that you are willing to tell the other guy that you don't know and need to ask for some help.

DOD Inspection

Kalitta Charters has been contacted by the Department of Defense (DOD) Air Carrier Survey and Analysis Office for a re-inspection to begin on the 22nd of October. This periodic re-inspection is required as a condition of our Air Mobility Command (AMC) contract flying. These inspectors will be conducting on-site evaluations, and also conducting line flight evaluations, for a period of several days. Please welcome them as they visit your departments and cockpits.

Proper Sizing Of Footwear

Picking out shoes should be a simple enough task. After all, everyone knows their own shoe size. Right? Well, most of us do, but many of us forget that shoe sizes can change over a lifetime.

For best foot health and comfort, have your feet measured regularly. Feet are rarely perfectly matched, so have both measured and buy shoes based on the larger foot.

Feet tend to swell during the course of the day, so try to make your shoe purchases later in the day. Make sure the ball of your foot fits in the widest portion of the shoe. Because sizes vary between manufacturers, always purchase shoes based on fit, not on marked sizes.

Many maintenance and operations personnel can spend their entire work day on their feet. Proper shoe fit is essential to do a stand up job at your stand up job.

The Kalitta Charters Safety Chronicle is published every quarter by the Safety Department. Please feel free to contact us with questions, comments and suggestions at:

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KALITTA CHARTERS

THE CHARTERS SAFETY CHRONICLE

2nd Quarter 2020

Fuel System Maintenance: Key Issues to Consider

Fuel—having enough of it and assuring its steady flow to the engines—is so central to an aircraft's operation that by many measures, the machine is designed around its fuel's inflight storage and delivery. Wing and center body tanks are most commonplace and fuel is delivered through a combination of gravity and electrical power. A complex system of valves, pumps and measurement devices must all work together to assure a constant feed and to provide the flight deck crew with the information necessary to safely complete the mission.

One infamous example of that system breakdown is the 'Gimli Glider' incident. On July 23, 1983, an Air Canada 767 crew was planning a flight from Montreal (YUL) to Edmonton, Alberta (YEG). The Fuel Quantity Indicating System (FQIS) had been disabled due to a maintenance issue. Accordingly, a dip tank test was performed, but at the time, there was a lack of standardization of fuel delivery and recording due to the country's then evolving adoption of the metric system. As a result, what was thought to be a measure of pounds/gallons was actually of liters/kilograms.

The flight to Edmonton was uneventful until about two-thirds of the way when the crew got a low-fuel-pressure notification on the left side. Believing the problem was a faulty fuel pump, the pilots shut it down.

A few moments later, they got the same indication on the right side, followed by a shut down of the left engine, and then the right. What ensued then can only be described as an astonishing act of airmanship, whereby the pilots glided the powerless aircraft to a safe landing at an old military airstrip in Gimli, Manitoba, which had been converted to a race track.

Modern aircraft fuel systems provide many challenges for maintainers. From delivery and measurement systems, to mechanical structures like tanks, filters, valves and plumbing, all of which require knowledge and experience to keep them functioning properly. In addition to operational wear, the fuel system is under constant attack from contamination.

Water and debris intrusion from outside the aircraft is always a concern since it can lead to an insidious attack from a fungus that feeds on the fuel hydrocarbons. There is much trouble for which technicians and those who manage them need to be alert and have a plan of corrective action.

Fuel Systems

Knowing how much fuel you have on board is key, obviously. Unless you are flying very long distances over water, the days of topping off the tanks for every flight are long gone. For most missions, cost and weight/performance considerations outweigh endurance, making takeoff fuel quantity and fuel burn in flight important measurements.

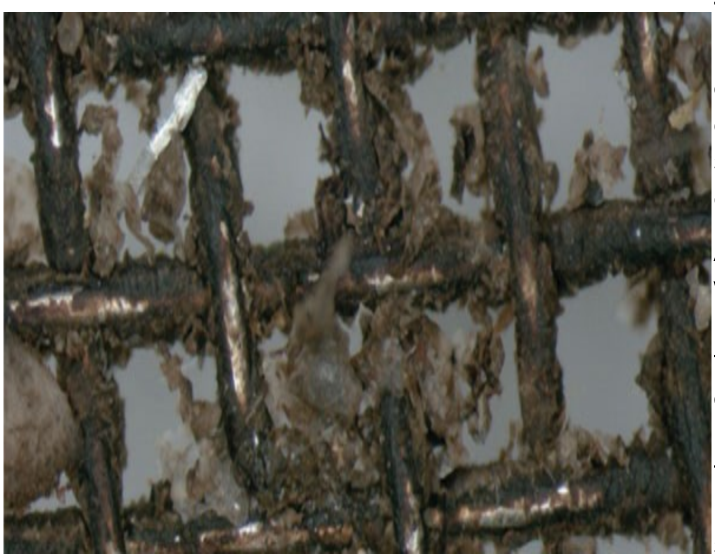
Today's aircraft use electrical capacitance systems to measure the dielectric value of the gap between the plates of the sensor

Continued on page 2…...

Fuel System Maintenance Cont….

As fuel quantity changes, so too does the resistance and the result appears in the cockpit indicator. Advanced systems use a compensator to adjust the value depending on fuel temperature since that varies its density. When changing probes or sensors, technicians must calibrate them to ensure they read correctly. The procedure often involves adding a measured quantity of fuel, with a known temperature and density, which is then calibrated through the indicator of a signal conditioning unit.

For aircraft with multiple tanks, there are multiple probes and measuring units. Balancing the fuel load is aided by gravity and/or pumps. Multiengine aircraft have redundant lines, hoses and valves to ensure supply to each engine. Fuel tanks need to be vented to allow air in and prevent a vacuum, but they also need a check valve to prevent siphoning. Each component needs to be both functioning properly and free from defect, as the smallest leak can allow air into the system, which can result in a flameout. In addition, many aircraft have pressure refueling valves and both check- and shut-off valves to prevent over pressurization of the fuel tanks. For many large aircraft, there is a mechanical backup system where a dipstick can be dropped in the tank to measure fuel.



This filter screen is contaminated with particulates and a gum residue. Credit: Boeing

Bugs and Fuel

Water and contaminants have always been the enemy within aircraft fuel systems. Terrestrial fuel delivery systems are the first line of defense against the invaders, and generally do a good job.

As a result, the most common method for water ingress into an aircraft is through condensation. Water vapor settles from the air space above the liquid fuel and sinks to the low spot in a tank, whereupon it can be removed.

The brown-black debris on the bottom of this tank is made up of fungus and bacteria. This growth can clog fuel filters causing the airplane fuel quantity indication system to read incorrect values, and eventually cause structural corrosion of the aluminum stringers and wing skin. Credit: Boeing

To detect water in a fuel, a small amount of liquid is drained and inspected. The frequency for conducting this procedure varies based upon the operating environment. In general, any aircraft that sits motionless for several days should be checked, but always follow OEM guidelines.

A problem for most turbine aircraft greater than water ingress is the existence of a particularly nasty bug — Hormoconis Resinae — a fungus that feeds on hydrocarbon molecules in Jet A. It grows very fast, especially in warm temperatures; it can go dormant when it gets cold, but reactivates when the temperature rise again. The bacterial waste from the bug is extremely corrosive to tanks and it can also eat away sealant resulting in leaks and other serious issues.

Continued on page 3….

Fuel System Maintenance Cont….

A problem with sump checks is that often the sump valve sticks and the checker gets drenched with fuel. Moreover, the check is difficult to conduct on aircraft with a particularly low fuselage. Such realities, over time, can cause some checkers to become lax in their checking. Even though many OEMs allow pilots to perform sump checks as part of their preflight inspection, many defer this task to their maintenance technicians. Regardless, it is especially important that those aircraft traveling frequently overseas or sitting for long periods of time undergo sump checks before launching.

"The entire aircraft is sumped monthly," says Mark Jones, director of Maintenance and a pilot for a small, IS-BAO registered, mid-western U.S. flight department. "When the aircraft leaves the country it is sumped immediately upon return. We also treat every three months with BioBor JF using the shock method and let it set for at least 24 hr. before adding any additional fuel. When we find anything, we immediately investigate and remedy the situation."

Operators should treat fuel with an anti-microbial biostat in accordance with your OEM recommendations. Many manufacturers suggest regular treatment even if there is no indication of bacterial growth. If samples come back positive, you can kill the fungi with a biocide. A typical biocide uses about one quart of chemical per 1,000 gallons of fuel and takes 24 to 36 hr. to kill the microbes. Be sure to follow the manufacturer's recommendations for post-biocide application. You may need to increase the frequency of drain and filter checks until you are certain your tank is clean.

Periodic fuel tests include a dye check and microbial growth media. You place the sample in the tube and wait a few days for the result. You can send your sample to the lab as well, but new technology had enabled a much quicker turn-around time (see sidebar). Put a few drops in the analyzer and within ten minutes of so, you have the results.

While not cheap, this option can quickly assess the status of your system, a particularly helpful piece of information if you're planning a long trip or are heading overseas after an extended period of inactivity.

Many technicians inspect tanks at the C check, and if finding them clean, assume that condition will continue until the next check. However, the fact is microbial growth can consume a tank in as little as six weeks.

The sump check also requires a safe way to dispose of the fuel. There was a time when we'd just return a non-contaminated sample back to the tank, but that actually that actually increases the chances of contamination. The best procedure is to hand the samples to the fuel service provider and let it to the disposal.

"We try to do most of the sumping on our aircraft in our hangar as we do have an environmental company that regularly picks up the used fuel and oil. When traveling internationally we use only airports that have air carrier service and that gives us a good and quality fuel to be put in the aircraft," Jones says. "When fueling, most FBO's are more than accommodating to letting us see the strainers and fuel test results."

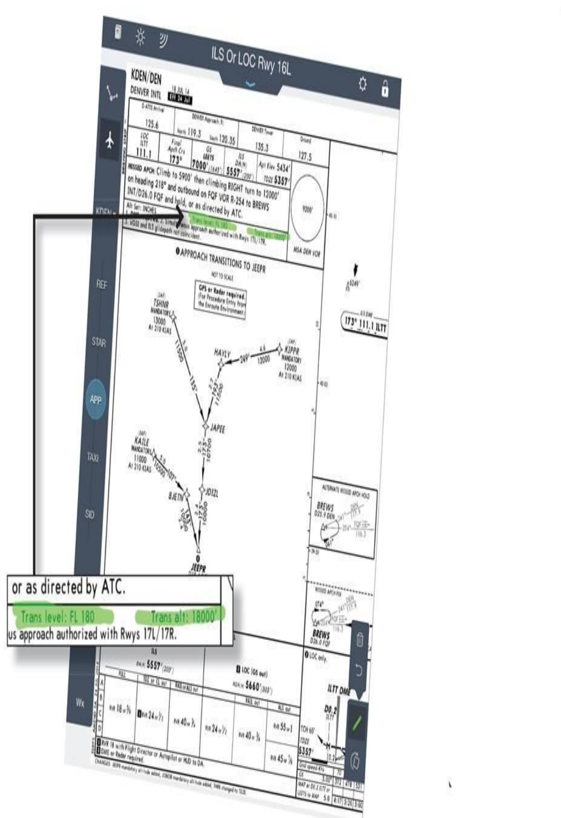
This is a portion of an article titled: Fuel System Maintenance: Key Issues to Consider, that appears in the February 2016 issue of Business & Commercial Aviation magazine with the title "Fuel System Maintenance."

ON INSTRUMENTS: TRANSITIONING UP AND DOWN

FLYING THROUGH ALTITUDES AND LEVELS

May 11, 2016 By Thomas A. Horne

Most of us fly in North America, so we're well acquainted with the need to change our altimeter settings when and if we ever climb or descend through the boundary of Class A airspace—18,000 feet msl, or Flight Level 180 (FL180). Climbing through 18,000 feet, you'll need to change from an altimeter setting referenced to corrected sea level pressure to the standard atmospheric pressure setting of 29.92 inches of mercury (in Hg). You'll also need to have an instrument rating and be on an instrument flight rules (IFR) flight plan, because 18,000 feet msl also happens to be the floor of positive-control airspace.



In other words, when you climb into Class A airspace, your altitude switches from one based on your height above local, surface-based barometric pressure readings to an altitude based on a common pressure surface of 29.92 in Hg (dubbed "QNE"). Now you're flying along the height of a constant pressure level. But so is everyone else up there, so if the height of the pressure surface rises (as it does when temperatures are higher than standard) or falls (when temperatures are colder than standard) there will be adequate vertical separation as long as everyone maintains his or her assigned altitude. Above FL180, a 1,000-foot vertical separation is the rule for IFR operations.

When the surface-based atmospheric pressure (called "QNH") in the local area drops below 29.92 in Hg, then the lowest usable flight level is raised from FL180 to FL185—or higher—because otherwise, someone flying IFR at, say, 17,000 feet msl may be closer than 1,000 feet to aircraft flying in the lower flight levels.

Descending through FL180, it's time to change from 29.92 in Hg to whatever the local altimeter setting might be. So in North America, the boundary between QNH and QNE and positive-control Class A airspace and the airspace below it is easy to comprehend. There's only one boundary—and it's nearly always 18,000 feet msl.

But I'm thinking that many pilots long for the day when they'll get a chance to fly in foreign airspace. I hope you do. Altitude-wise, that's where the game changes, whether you're flying IFR or VFR.

Transition altitude

Let's say you're taking off from an airport in Europe. When you receive the airport weather, you'll be issued a local altimeter setting, just like in the United States. You'll use that altimeter setting for takeoff and the initial climb, but at some point you'll cross the boundary of what's known as the transition altitude. Continued on Page 5……..

ON INSTRUMENTS CONT…

That's when you'll make the change from a QNH altitude based on the airport's sea-level setting to a standard altimeter setting of 29.92 in Hg. (Or, more likely, 1013.2 millibars, which is the equivalent.) Again, just like the United States.

In most cases, however, this change doesn't often come at altitudes as high as 18,000 feet msl. On the contrary, transition altitudes can be as low as 3,000 or 4,000 feet msl. In Germany, for example, typical transition altitudes run around 5,000 feet msl. In the United Kingdom, it's usually 3,000 feet, but 6,000 feet in the London area. Transition altitudes can be raised when local altimeter settings or temperatures drop below their standard levels.

Transition level

As for descents, foreign airspace uses what's called a transition level to mark the change from standard to local altimeter settings. The transition level is the lowest flight level available for use above the transition altitude, and it's published on approach plates. The height of the transition level depends, as with transition altitudes, on terrain, local altimeter settings, and temperature. Air traffic control doesn't want airplanes coming out of the flight levels into high-to-low, look-out-below issues. So transition levels are not set in stone. As a procedural matter, ATC may issue an altimeter change at its discretion to a pilot in a descent. That amounts to a directive to switch from the standard altimeter setting to a local one. Comply with it, and, presto—you've left the flight levels.

It can be confusing to keep the terms straight at first, so a memory aid helps. The "A" in transition altitude points upward, a reminder that these apply to climb situations. The "V" in transition level points downward, a reminder that leaving a transition level involves a descent.

For all the talk about a united European community, its airspace still reflects a hodgepodge of transition altitudes and levels. There's an initiative to combine them, United States-style—into one common altitude. But it's been slow going, and until the Single European Sky Air Traffic Management System is fully implemented, it's unlikely that local ATC jurisdictions will give up their practices. As for the rest of the world, expect the status quo to persist. Luckily for North American pilots flying domestically, 18,000 feet and FL180 remain transition altitude and transition level, all rolled into one. Still, there are hints that the terms may become internationalized. Jeppesen, for example, now publishes transition levels on United States approach plates. It's always FL180, so we're lucky that way. But be prepared if you fly to a foreign locale.

The Kalitta Charters Safety Chronicle is published every quarter by the Safety Department. Please feel free to contact us with questions, comments and suggestions at:

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THE CHARTERS SAFETY CHRONICLE

3rd Quarter 2020

Ed: TALPA is coming. The following announcement and accompanying chart will explain the new runway condition assessment program that is to be implemented on October 1st.]

FAA IS CHANGING RUNWAY CONDITIONS REPORTING

The Federal Aviation Administration (FAA) and other members of the aviation community have developed new standards to improve safety at U.S. airports during inclement weather. On October 1, 2016, U.S. airports, airline flight crews, dispatchers, general aviation pilots, and air traffic controllers will begin using new Takeoff and Landing Performance Assessment (TALPA) standards to reduce the risk of runway overrun accidents and incidents due to runway contamination caused by weather and other factors.

The FAA developed the standards based on the work of the Takeoff and Landing Performance Assessment (TALPA) Aviation Rulemaking Committee (ARC), which was formed after the December 2005 overrun accident at Chicago Midway Airport. In that accident, Southwest Flight 1248 ran off the end of the runway and into a city street after landing during a snowstorm.

As a result of the committee's work, the FAA has developed a new method for airports and air traffic controllers to communicate actual runway conditions to the pilots in terms that directly relate to the way a particular aircraft is expected to perform. TALPA improves the way the aviation community assesses runway conditions, based on contaminant type and depth, which provides an aircraft operator with the effective information to anticipate airplane braking performance.

Airport operators will use the Runway Condition Assessment Matrix (RCAM) to categorize runway conditions and pilots will use it to interpret reported runway conditions. The RCAM is presented in a standardized format, based on airplane performance data supplied by airplane manufacturers, for each of the stated contaminant types and depths. The RCAM replaces subjective judgments of runway conditions with objective assessments tied directly to contaminant type and depth categories.

For example, using today's assessment process, a runway that is covered with two inches of dry snow would be reported as "FICON 2IN DRY SN OBSERVED AT 1601010139. 1601010151-1601020145" along with Mu values as "TAP MU 29/27/29 OBSERVED AT 1601010139. 1601010151-1601020145.

A Mu number describes a braking co-efficient of friction.

Starting October 1, 2016, the same NOTAM with contaminants would be reported using Runway Conditions Codes as follows:

DEN RWY 17R FICON (5/5/3) 25 PRCT 1/8 IN DRY SN, 25 PRCT 1/8 IN DRY SN, 50 PRCT 2 IN DRY SN OBSERVED AT 1601010139. 1601010151-1601020145

The pilot or dispatcher would then consult the aircraft manufacturer data to determine what kind of stopping performance to expect from the specific airplane they are operating.

The airport operator will assess surfaces, report contaminants present, and determine the numerical Runway Condition Codes (RwyCC) based on the RCAM. The RwyCCs may vary for each third of the runway if different contaminants are present. However, the same RwyCC may be applied when a uniform coverage of contaminants exists. RwyCCs will replace Mu numbers, which will no longer be published in the FAA's Notice to Airman (NOTAM) system.

Pilot braking action reports will continue to be used to assess braking performance. Beginning October 1, the terminology "Fair" will be replaced by "Medium."

Continued on page 2…...

CONDITIONS REPORTING…….Cont'd

It will no longer be acceptable for an airport to report a NIL braking action condition. NIL conditions on any surface require the closure of that surface. These surfaces will not be opened until the airport operator is satisfied that the NIL braking condition no longer exists.

Airports will start reporting runway conditions using the RCAM on October 1. The FAA is advising operators to develop procedures for pilots and dispatchers that address the changes to runway condition reporting procedures.

OPERATIONAL RUNWAY CONDITION ASSESSMENT MATRIX (RCAM)
BRAKING ACTION CODES AND DEFINITIONS

Assessment Criteria		Control/Braking Assessment Criteria	
Runway Condition Description	RwyCC	Deceleration or Directional Control Observation	Pilot Reported Braking Action
• Dry	6	---	---
• Frost • Wet (Includes damp and 1/8 inch depth or less of water) *1/8 inch (3mm) depth or less of:* • Slush • Dry Snow • Wet Snow	5	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
-15ºC and Colder outside air temperature: • Compacted Snow	4	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (any depth) over Compacted Snow *Greater than 1/8 inch (3 mm) depth of:* • Dry Snow • Wet Snow *Warmer than -15ºC outside air temperature:* • Compacted Snow	3	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 inch(3 mm) depth of: • Water • Slush	2	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice	1	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice • Slush over Ice • Water over Compacted Snow • Dry Snow or Wet Snow over Ice	0	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

NOTE: The braking action term "FAIR" will be replaced with "MEDIUM," effective October 1, 2016. Until October 1, 2016, the current use of the term "FAIR" applies.

Note: The unshaded portion of the RCAM is associated with how an airport operator conducts a runway condition assessment.
Note: The shaded portion of the RCAM is associated with the pilot's experience with braking action.
Note: The Operational RCAM illustration will differ from the RCAM illustration used by Airport Operators.
Note: Runway condition codes, one for each third of the landing surface, for example 4/3/3, represent the runway condition description as reported by the airport operator. The reporting of codes by runway thirds is expected to begin in October of 2016.

DEVIL IN THE DETAILS

The devil is in the details" quoted a wise man years ago. And, for us in aviation, that is a powerful statement. One which we seem to lose track of from time to time.

Spending time in the schoolhouse (lots and lots of it… sigh…), I often observe the after effects of those airmen who fail to account for the details. The result is usually a stern lecture and admonishment to not to let the little things slip by. But, in real life, the result could be a letter of investigation from the Administrator, certificate action against you, or worse.

Aviation is a detail business. Particularly, when it comes to all the assorted reading tasks that come along with maintaining flying skills. Manuals, non-normal checklists, the notes that appear on en-route and terminal charts, airport briefing pages and the assorted Fore Flight/Jeppesen publications that are carried in electronic format. Yes, that IS a lot of crap to read. (Heard the eye roll and sigh when you looked at the list.)

Why the manual reading burden? Well, for starters it keeps you familiar with aircraft limitations, systems and, any procedural changes that have been made. Also a lot can be said for a periodic review of the QRH. That is the stuff that can save you in a real abnormal or emergency situation.

Next up, airport reference pages. As you all know, there can be many of them at some of the more complicated airports. Within them are buried the details of how and when to obtain clearances, what sort of noise abatement departures you are to fly, and many other procedures that will get you, as a minimum, a stern tongue lashing from the local controllers if you don't follow them. Ditto the various notes that appear on terminal procedure charts. These notes can whittle down the decision about whether you are supposed to be on the ILS X or the ILS Z. Or, tell you what part of the procedure applies during the day and what part at night. If your failure to follow local custom is severe enough, you can expect a Letter of Investigation from the local FSDO, or worse.

Notes on enroute charts will tell you when and how to communicate with ATC. If you need to check in with some version of their military prior to crossing an FIR boundary, and so on. Failure to comply could get you intercepted, or forced to land for an "inspection" of your aircraft. Definitely the start of a very long day.

Text publications. Now that is some exciting reading. Stuff is dry as a bone. But, nonetheless, that stuff is required knowledge in the flying game. And, the rules can change from time to time, so keeping up with the State Rules and Procedures under ATC is definitely worth reviewing before any international trip. There is a notice of revision in the fore-flight app, so the only way to see if anything changed is to review the information before every arrival and departure.

Despite the efforts of ICAO to standardize the world, we all still seem to do things just a little differently. Interestingly enough, the good ole' USA is one of the worst offenders when it comes to ICAO compliance. So, that means those of you who have ingrained all of the procedures, speeds, phrases and more that came with your domestic background have a genuine need to read just about everything in every publication that is available to you.

We all hate the boring stuff. But, that boring stuff is just as important a part of our career as the flying part. Don't let the devil in the details burn you're a*s…

STATEMENT ABOUT ALCOHOL USE

Kalitta Charters is committed to providing a safe and sober environment for both our employees and our customers. It is important that our employees understand the risks and hazards associated with drug and alcohol use, both while at work and at home. While many of us indulge in an occasional drink, frequent alcohol consumption can have a negative impact on an individual's overall health and wellbeing. According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), drinking large quantities of alcohol and/or chronic alcohol consumption can cause high blood pressure and Cardiomyopathy; stretching and drooping of the muscles in the heart. Frequent drinking can also cause irreversible liver damage including alcoholic hepatitis, cirrhosis and liver failure, as well as various other health problems. Alcohol use is also the leading cause for both liver and esophageal cancer.

Since alcohol consumption affects our overall health, a healthy relationship with alcohol is important to maintain proper wellbeing as well as a safe and efficient work environment. A standard drink in the United States is 0.6 ounces of pure alcohol. This translates to:

- 12oz of beer (5% alcohol content)
- 8oz malt liquor (7% alcohol content)
- 5oz wine (12% alcohol content)
- 1.5oz liquor (40% alcohol content)

The CDC defines moderate drinking as one (1) standard alcoholic drink per day for women and 2 drinks per day for men. Heavy drinking, which is linked to the health problems listed above, is defined as 8 (or more) standard drinks per week for a woman and 15 (or more) standard drinks per week for a man.

There are many factors that determine someone's blood alcohol content after consuming an alcoholic drink. Some of these factors include:

- Age
- Weight
- Gender
- Race/Ethnicity
- Physical Fitness/Overall Health
- Medications/Drugs
- How quickly the alcohol was consumed

According to 49CFR part 40 and 14CFR part 120, an alcohol concentration of 0.020 to 0.039 requires the employee to be removed from work for a minimum of 8 hours. An alcohol concentration of 0.04 or higher is considered a federal violation and will require an employee to undergo a series of steps in order to return to work, including a chemical dependency evaluation and unannounced follow-up testing for a minimum of 12 months. For comparison purposes, the violation level for alcohol consumption while operating a motor vehicle in Michigan is 0.08. This means, drunken driving laws are 2x higher than the Federal Regulations our employees are required to abide by.

Roughly 17.7 million people in the US (or 1 in 12) suffer from alcohol abuse or alcohol dependence. With alcohol use being such a prominent concern in our society, it can be helpful to know where to turn in the event you, or someone you know experiences a problem with drinking.

EAP Service

Kalitta provides its employees with an Employee Assistance Program (EAP) through a company called Unum (800-854-1146). While Unum's EAP service can be helpful with various life struggles, one key feature they offer is resources for drug and alcohol treatment and counseling services; many of which are covered under our company sponsored health plan.

HIMS Program

There is also a program, specifically designed for Crewmembers called the HIMS Program. "HIMS is specific to commercial pilots and coordinates the identification, treatment and return to the cockpit of impaired aviators. It is an industry-wide effort in which companies, pilot unions, and FAA work together to preserve careers and further air safety." 281-433-2324 or 817-681-4757

The Kalitta Charters Safety Chronicle is published every quarter by the Safety Department. Please feel free to contact us with questions, comments and suggestions at:

Kalitta Charters
RONALD FANSLER - Dir of Safety

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THE CHARTERS SAFETY CHRONICLE

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COLGAN AIR LEGACY

[Ed: The following article was written by NTSB Chairman Robert Sumwalt. He is one of us who retired from airline flying to join the NTSB. It is the leadoff article this issue because it ties into at least one of the other articles. I know that there are career implications to the enactment of the PRD as mandated by Congress. But we have a responsibility to the public, and ourselves, to be honest about our proficiency, or lack there- of.]

TWELVE YEARS AFTER COLGAN 3407, FAA STILL HASN'T IMPLE- MENTED PILOT RECORDS DATA- BASE

By Chairman Robert Sumwalt

I grew up in the South, and people sometimes say we do things slowly in that part of the country. Whether there's any validity to that claim, I can't say with certainty. What I can say with great certainty, however, is that speed isn't an attribute commonly associated with the Federal Aviation Administration (FAA), an agency within the US Department of Transportation. Below is a sad, but true, example of the glacial pace of the FAA's rulemaking processes - even in the wake of a congressional mandate to get something done. Perhaps the new secretary of transportation can give a needed boost to this untenable situation.

On this date 12 years ago - February 12, 2009 - while on approach to the Buffalo Niagara International Airport in New York, Colgan Air flight 3407, a Bombardier Q-400 turboprop, plunged from the sky. Fifty lives were lost, in- cluding that of a man who died when the turboprop crashed into his home.

The NTSB's year-long investigation revealed that, as the airplane slowed on approach, the captain became startled by the activation of the aircraft's stall warning system. In response to some- thing that should have been easily dealt with, the captain inappropriately manipulated the elevator controls, forcing the aircraft into its fateful dive. Our investigation found that the captain had a history of piloting performance deficiencies, including having failed several flight tests. Possibly more troubling, he concealed these performance deficiencies from Colgan when he applied for employment.

The Colgan crash was the deadliest US airline disaster in the past 19 years.

In response to this tragedy, the NTSB issued safety recommendations to the FAA to strengthen the way airlines as- certain a pilot applicant's background, including requiring previous employers to disclose training records and records of any previous failures.

Continued on page 2...

COLGAN…...cont'd

Congress took note of these recommendations and included them in a bill signed into law in Au - gust 2010. This law required the FAA to establish a pilot records database (PRD), and stipulated that "before allowing an individual to begin service as a pilot, an air carrier shall access and evaluate information pertaining to the individual from the pilot records database." Items required to be entered into the PRD, and considered by hiring airlines, included "training, qualifications, proficiency, or professional competence of the individual, including comments and evaluations made by a check airman any disciplinary action taken with respect to the individual that was not subsequently overturned; and any release from employment or resignation, termination, or dis- qualification with respect to employment." Congress appropriated $6 million per year for the next 4 years to help facilitate creation of the PRD - a total of $24 million.

The FAA's response reminds me of my college's football team - they get off to a good start, but after scoring on the opening drive, they have difficulty executing for the rest of the game. In early 2011, the FAA established an aviation rulemaking committee (ARC) to develop recommendations on the best way to implement the PRD. De-spite the ARC completing its work and is- suing a report to the FAA in July 2011 -just 6 months after being tasked with developing recommendations it wasn't until September 2015 that the FAA began a phased approach to implementing the PRD.

By July 2016, Congress had become impatient with the FAA's lack of progress. After all, it had been 6 years since the FAA was required to create the PRD, and there was still no appreciable progress. this pilot concealed his history of performance deficiencies, which deprived Atlas Air the opportunity to fully evaluate his aptitude and competency as a pilot.

Congress gave the FAA a new dead- line: it mandated the PRD be in place by April 30, 2017.

Unfortunately, April 30, 2017, came and went. Still no PRD. Meanwhile, 40 days after that deadline, a young pilot applied for employment at Atlas Air and was hired shortly thereafter. As with the Colgan Air captain, this pilot concealed his history of performance deficiencies, which deprived Atlas Air the opportunity to fully evaluate his aptitude and competency as a pilot.

He struggled with training at Atlas, but after failing his check ride, he was retrained and passed. Tragically, on February 23, 2019, on what should have been a routine cargo flight from Miami to Houston, this pilot, like the Colgan Air captain, encountered something that startled him. He over- reacted and put the Boeing 767 into a fatal dive. The commonalities between the Colgan Air crash and the Atlas Air crash are striking: Both pilots had a record of poor performance prior to their employment, both pilots concealed that information when applying for airline employment, and both pilots misapplied the flight controls following events they weren't expecting. Events that should have been easily corrected. Events that, tragically, led to their aircraft plunging to the ground.

Neither of these sad events was an isolated case. Including these two crashes, the NTSB has investigated 11 air carrier accidents over 3 decades in which pilots with a history of unsatis- factory performance were hired by an airline and then were later involved in an accident attributed to their poor piloting performance.

Continued on page 3

COLGAN…...cont'd

After years of foot dragging, last March, the FAA provided its first visible indication of moving for- ward with the PRD, publishing a notice of pro- posed rulemaking (NPRM) to give the public a glimpse of what the proposed rule may look like 10 years after Congress initially mandated it, and 3 years after the April 2017 deadline that Congress eventually imposed.

The NPRM indicated that the PRD should be implemented sometime this year; however, the NPRM also proposes allowing a 2-year phase-in This puts complete implementation somewhere around a 2023 timeframe, assuming this proposed timeline holds. If that's the case, we will finally have the PRD 14 years after the Colgan Air disaster, 13 years after Congress mandated it, 5 years after the deadline imposed by Congress, and 4 years after the Atlas Air crash.
A crash is a tragedy. It's even more tragic to see a similar crash hap- pen again and again and not have the regulatory agency responsible for safeguarding the skies take corrective action in a reasonable timeframe. We're past the point of reasonable, and the traveling public deserves better.

STUDY SHOWS ACCIDENTS LESS LIKELY WITH ADS-B IN

ADS-B uses satellites instead of ground-based radar to determine aircraft position, and is a key technology behind the FAA's Next Generation Air Transportation System. The FAA has mandated ADS-B Out equipage for flights after Jan. 1, 2020, in airspace where a transponder is required today. ADS-B In, which is optional, increases pilot situational awareness by making a variety of weather and traffic information available in the cockpit. The paper, "Measured Impact of ADS-B In Applications on General Aviation and Air Taxi Accident Rates," by D. Howell and J. King of the Regulus Group, will be presented at the Thirty-eighth Digital Avionics Systems Conference in September. The Regulus Group provides system engineering, program management, and air traffic support for multiple FAA and Department of Defense programs.
Focusing on data for five years—2013 to 2017—Regulus researchers used a fleet method to identify those reductions. They determined the number of ADS-B In-equipped non-air carrier aircraft and compared that to the FAA's fleet forecast for GA. Accidents, by type, involving ADS-B In-equipped aircraft were divided by the number of equipped operations. Their paper includes more **details on the methodology and analysis**.
A 2007 business case prepared by the FAA's Surveillance and Broadcast Services (SBS) Program Office drove the move to ADS-B services. It estimated that ADS-B would help to reduce four types of GA and air taxi accidents: midair collisions, weather-related accidents, controlled flight into terrain (CFIT), and weather/CFIT accidents.
"In the CONUS, the accident rate analysis focused on reductions in midair collisions, weather-related accidents, and some incremental impacts on controlled flight into terrain," said Dan Howell, one of the study's authors. "For Alaska, the rate analysis considered all aviation accidents. In both analyses, the assumptions mirrored the claims made by prior FAA SBS business cases [2007 and 2012] and were commissioned by the SBS program office as part of the program management oversight process.

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"The accident rate reduction results are, in general, more positive than originally claimed," he noted, adding that the data will be used to guide future SBS business cases for expansion of services.

The data showed aircraft equipped with ADS-B In experienced accidents less often, Howell said. "In both the CONUS and Alaska, aircraft with ADS-B In-capable equipment have experienced a reduced accident rate as compared to those without. The analysis does not prove that ADS-B In applications could have prevented the accidents for the unequipped flights; however, the trend is very positive and supports the effectiveness claims made by the program."

AOPA has been advocating for increasing ADS-B coverage, and the study shows the return possible from that investment, said Rune Duke, AOPA senior director of airspace, air traffic, and aviation security. "Although we caution against saying there is any single factor that prevents or causes an accident, these results highlight the safety benefits of ADS-B. The FAA had been assuming a 20-percent reduction in accidents for equipped aircraft in their business cases for ground stations. Based on this study, the FAA is considering increasing the percentage, which may assist in justifying additional ground stations."

Duke said that AOPA has been advocating for and working with the FAA on the business case for more ground-based radio stations for years, and wrote a letter to the FAA's SBS office on the topic in early 2017.

Alaska is a focus area for us," said Duke, explaining that ground station coverage is very sparse in Alaska compared to the 48 contiguous states. "We have also provided information to the FAA in support of Section 321 in the 2018 FAA Reauthorization." That legislation requires the FAA administrator to evaluate adding additional ADS-B ground stations to create a minimum operational network along major flight routes in Alaska.

In 2016, an informal AOPA Aviation eBrief poll asked readers, "Have you ever had a close call but averted a collision because you had traffic information from ADS-B In equipment?" Nearly 3,000 people responded to the nonscientific survey, and 456—about 15 percent —replied in the affirmative.

Many of those early ADS-B adopters are enthusiastic about ADS-B traffic. A summary of those responses can be found online.

AOPA also continues to advocate for new and improved ADS-B In products. Most recently, the FAA approved two new airspace products for Flight Information Services-Broadcast (FIS-B): temporary restricted areas and temporary military operations areas. Duke noted, "we should see those airspace areas being graphically provided to pilots soon over FIS-B. Graphically displaying these airspace areas to pilots will further improve safety and the benefit of equipping with ADS-B."

The Kalitta Charters Safety Chronicle is published every quarter by the Safety Department. Please feel free to contact us with questions, comments and suggestions at:

Kalitta Charters
RONALD FANSLER — Dir. Of Safety
Willow Run Airport

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