Aviation Human Factors Industry News

Volume VIII. Issue 27, July 06, 2012

Charles E. Taylor — WRIGHT BROTHERS MECHANIC
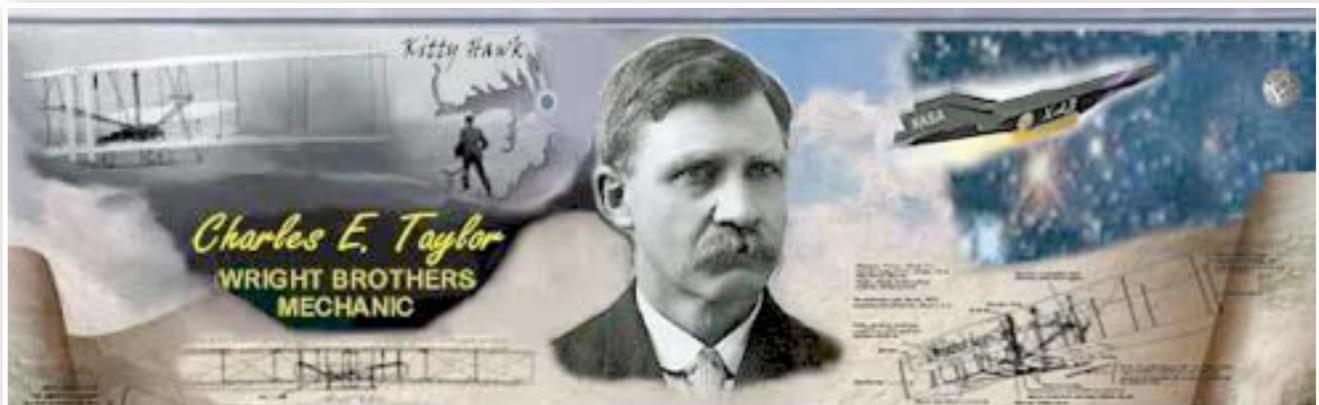
From the sands of Kitty Hawk, the tradition lives on.

Hello all,

To subscribe send an email to: rhughes@humanfactorsedu.com

In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

★**Human Factors 1-Day Recurrent Course for Trainers and Instructors**

★**Tenth anniversary of Überlingen accident: approach to safety has changed radically**

★**Three Were Aboard An Aircraft Intended To Seat Two**

★**Speedbrakes not armed before Southwest 737 excursion**

★**Deadly Private-Plane Crashes Prompt U.S. Call for Basics**

★**To Error is Human … But Not With Aircraft**

Human Factors 1-Day Recurrent Course for Trainers and Instructors

October 24th, 2012, in beautiful Myrtle Beach, SC, USA

The Aviation Consulting Group

Above All...Safer Skies

This course is designed specifically for those people that train others in human factors subjects. It is assumed that attendees already have a solid foundation of human factors knowledge and therefore will be able to contribute significantly to the objectives which include high-level thinking, sharing of knowledge, best practices and recommendations. With a core focus on current HF issues, as well as training methods and techniques, this course is highly interactive and conducted in a workshop fashion. Attendees are required to make a short presentation in order to facilitate a group learning and sharing experience.

COURSE NAME: Human Factors Recurrent for Trainers and Instructors

WHO SHOULD ATTEND? Human factors trainers and instructors. This course is not limited to maintenance trainers. HF instructors from all domains are encouraged to attend

PREREQUISITES: Must be a current HF instructor with a significant, demonstrable knowledge base

COURSE DURATION: 8.0 hrs. (1 day)

Download the course brochure

http://www.tacgworldwide.com/TACG%20HF%20Recurrent%20for%20Trainers.pdf

http://www.tacgworldwide.com/HFRecurrent1024.htm

Tenth anniversary of Überlingen accident: approach to safety has changed radically

Sunday 1 July 2012 marks the tenth anniversary of the mid-air collision in the skies above Überlingen. These days, the personnel of skyguide is in thoughts with the victims of the disaster and their loved ones, as well as with the people from the region who brought their help after the accident.It was on 1 July 2002 that a passenger aircraft of Bashkirian Airlines collided with a dedicated freighter of logistics provider DHL in the skyguide-controlled airspace above Überlingen in Southern Germany. Seventy-one people lost their lives. Ten years on, the tragedy remains a source of strong emotions to skyguide and all its employees; and the victims, the bereaved and the people from the Überlingen region who helped, will be much in their thoughts on this anniversary day.

Skyguide profoundly transformed its safety culture

The Überlingen accident transformed attitudes and approaches to safety in both the Swiss and the international aviation world. All the safety recommendations formulated by the investigating authorities were implemented by skyguide in full. Switzerland's air navigation service provider has also consistently further developed and expanded its own Safety Management System in the intervening decade.

Today at skyguide, some 40 specialists are dedicated exclusively to safety issues, and the Safety department is directly attached to the Executive Board. At the same time, skyguide cultivates and promotes an open and broad supporting safety culture. All the company's 1,400 employees are sensitized to safety issues and concerns in appropriate training courses. Each staff member is entirely free to report without prejudice and to request the investigation of an incident or any matter they have observed. Open exchange about safety issues is also fostered with partners, customers and authorities.

Air navigation services thus substantially contribute to constantly further reinforcing safety and safety culture within the aviation industry.

https://www.google.com/url?url=http://www.youtube.com/watch%3Fv%3Dx7IJyP4h2EE&rct=j&sa=X&ei=vInqT-abM4S06gGP4LnbAQ&ved=0CF4QuAIwAg&q=%C3%9Cberlingen+accident&usg=AFQjCNEutQdJQQCTrIDyVjTWyfidpCEIaw&cad=rja

Three Were Aboard An Aircraft Intended To Seat Two

A Fathers' Day accident involving an ICA Brasov glider resulted in the fatal injury of all three people on board the aircraft.Those on board were identified as 68-year-old Fred Blair, his 32-year-old wife Matilda, and her 3-year-old son Andrew. Investigators say the woman was likely holding her son in her lap in the rear seat in the aircraft.

Television station KPRC in Houston reports that NTSB investigators said the 200-foot-long tow rope for the aircraft either broke, or the glider was released prematurely by the tow plane pilot or Blair, who was flying the glider. The release came at about 75 feet of altitude, and the glider reportedly nose-dived into a field in Fort Bend County, TX.

FAA and NTSB investigators continued to work at the accident scene Monday. Officials said all of those fatally injured in the accident were related.

Speedbrakes not armed before Southwest 737 excursion

US investigators have determined that the speedbrakes on a Southwest Airlines Boeing 737-700 were not armed before the twinjet slid off the runway at Chicago Midway.

The crew did not deploy the thrust reversers until 16s after touchdown on runway 13C, which was damp as a result of rain showers.

In an update to the inquiry the National Transportation Safety Board says the braking action was reported as "fair" by a preceding Southwest 737 crew.

But it adds that flight recorder information shows the pilots of the incident flight did not arm the speedbrakes during preparations for arrival.The crew had created extra workload by initially uploading and briefing the wrong approach procedure, and not realizing the error until receiving clearance to leave the holding pattern and begin the approach to Midway.

Having reprogrammed the flight-management system for the correct approach, a recalculation indicated sufficient landing distance available. Runway 13C is 6,522ft (1,988m) long.

The crew correctly set the autobrake but the NTSB says the pilots experienced "additional operational distractions" during the final minutes of the approach, including a momentary flap overspeed.

This flap issue occurred at about the time that the before-landing checklist would normally have been performed - a checklist which includes arming of the speedbrakes.

But the NTSB says "no mention" of the checklist or the speedbrakes was found on the cockpit-voice recorder, and the flight-data recorder shows that the speedbrakes were not armed.

After touchdown the speedbrakes did not deploy and the thrust reversers were not activated. The captain "quickly" applied full manual braking after realizing that the aircraft was not slowing as expected, says the NTSB, and reverse thrust was engaged with about 1,500ft of runway remaining - an action which automatically deployed the speedbrakes.

"As the airplane neared the end of the pavement, the captain attempted to turn onto the connecting taxiway but was unable," it states. The 737 hit a taxiway light and rolled 200ft into grass.

Without the speedbrakes' interruption of lift, the deceleration capability is "severely degraded", the NTSB says, because the braking effectiveness on the type is reduced by as much as 60%. Delay in the selection of reverse thrust also contributed to the amount of runway used.

Simulations determined that, had the speedbrakes deployed at touchdown, the 737 would have stopped with 900ft of runway to spare - and as much as 1,950ft if the thrust reversers had been activated at the same time.

None of the 139 passengers and crew members was injured in the 26 April 2011 incident.

Deadly Private-Plane Crashes Prompt U.S. Call for Basics

The last fatal airline crash killed 50 people when a Colgan Air flight slammed into a neighborhood near Buffalo, New York, in February 2009. Private-plane wrecks since then have killed 30 times as many. The crash rate on private-pilot flights -- up 20 percent since 2000 -- contrasts with a roughly 85 percent drop in accidents on commercial jetliners, according to data from the U.S. National Transportation Safety Board. The disparity is a dark spot on decades of aviation-safety improvements, and the board is weighing how to make non-commercial flying less hazardous in a two-day forum that began last week.

Chart: Private Plane Fatality Rate Not Improving

Many so-called general aviation accidents have resulted from pilots' inattention to basics, according to research by a group run jointly by industry and the federal government. Pilots have overloaded planes, failed to check weather reports, and made flying mistakes that caused planes to lose lift or go out of control.

"In spite of the advances we have made in both commercial and corporate aviation-safety records, the GA accident rate is stubbornly stuck," NTSB Chairman Debbie Hersman said at the hearing. "GA pilots are not learning from the deadly mistakes made by their brethren."

Since the 1990s, commercial-airline crashes due to icing, inadvertently hitting the ground, mid-air collisions, wind shear and other causes have been almost wiped out with improved technology and pilot training, according to NTSB accident statistics.

Weather Report

By contrast, the types of accidents in non-commercial flying recur even as the safety board has often called for improvement, Hersman said.

In 2005, the board issued a study focusing on the role of weather as a common cause of small-plane accidents, she said.

Hersman pointed to a May 20, 2011, crash in Taos, New Mexico, after a Beechcraft Bonanza flew into a cloud and slammed into a mountainside. Investigators found that the pilot, who died, hadn't checked weather reports for the route he flew.

"Our investigators see crashes resulting from the same causes over and over again," Hersman said.

The accident rates for general aviation, including corporate and instructional flights, have changed little since 2000, according to safety board data.

12 Times

The accident rate for all general aviation was about seven per 100,000 flying hours from 2007 through 2010. By comparison, accidents involving private pilots in their own or rented planes, mostly small, single-engine aircraft, averaged about 12 per 100,000 flight hours during the same period, according to Jill Demko, an NTSB investigator who spoke at the forum.

Those numbers were broken out from the broader general- aviation statistics. Private-flight crashes were 12 times higher than the average rate for other types of general-aviation flying, Demko said.

The rate of deadly wrecks in such private flying has grown faster than accidents as a whole, up 25 percent since 2000, Earl Weener, an NTSB board member, said in an interview before the forum. About 1,500 people have died on general-aviation flights since the crash by Pinnacle Airlines Corp. Colgan, Weener said.

"That's part of the reason for the focus" of the NTSB's inquiry, Weener said. The board, which has no regulatory power, recommends safety improvements to government agencies and industry.

Losing Control

Seeking ways to stem the fatalities, industry groups and the U.S. Federal Aviation Administration, which regulates private flying and sets safety standards, last year used the General Aviation Joint Steering Committee to study accidents.

The group found that the largest category of accidents are those in which pilots lose control during flight, said Bruce Landsberg, head of the safety arm of the Aircraft Owners and Pilots Association, an advocacy group based in Frederick, Maryland.

Landsberg, co-chairman of the steering committee, said the panel endorses working with the FAA to make it cheaper for small planes to install a device that warns pilots when wings are in danger of losing lift. Such devices are standard on commercial airliners.

Other frequent crash causes are inadvertently flying into the ground, loss of power and weather-related issues, Landsberg said.

Airfield Buzzed

Human error underlies the majority of personal flight crashes, Landsberg and Weener said.

An accident cited on Landsberg's AOPA Air Safety Institute's website highlights how pilot miscalculations can be deadly.

On Feb. 15, 2010, a Cessna T337G twin-engine plane crashed near Monmouth County Executive Airport in Farmingdale, New Jersey, as family members of those on board watched. The three adults and two children on the plane died.

After buzzing the airfield at high speed, the plane pulled into a climb and a section of the right wing came off, according to the NTSB's findings. The plane was overloaded and flying too fast for such a maneuver, the agency found.

Education and training programs by Landsberg's group and flying clubs haven't reached all pilots, Jonathan Greenway, president of HCC Insurance Holdings Inc. (HCC)'s Avemco Insurance Co. unit, told the forum. The firm insures aircraft owners.

"We're not getting the dog food to the right dogs," Greenway said.

Technical Solution

The number of accidents in which pilots in poor visibility fly into the ground appears to be decreasing, Tony Fazio, chief of the FAA's Office of Accident Investigation and Prevention, told the forum.

The drop has coincided with increased use of handheld devices that alert pilots when they get too close to mountains or other obstructions, Fazio said.

Fazio, who helps lead the steering committee with Landsberg, said safety may not improve as much in private flying as it has with airlines. Private flying is less regulated and the planes typically have fewer safety systems, he said.

Landsberg said the general-aviation community doesn't see a need for additional regulations.

"I don't think you can crash an airplane unless you have broken one and possibly two regulations," Landsberg said. "If everyone flew to the private-pilot practical test standards, we would have a pretty good system."

He also pointed to the fact that, however tragic, the numbers of fatalities in plane crashes are far outstripped by those in accidents on the nation's highways -- 32,885 in 2010, compared with 450 in general aviation.

http://www.bloomberg.com/chart/iAsLEpdVAlz4/

To Error is Human … But Not With Aircraft

The very famous quote that is often used to justify our mistakes was made way back in 1709 by Alexander Pope. The second half of this quote, much less quoted, is "To forgive (is) divine." I would like to apply this 300-year old quote to our modern day profession, aircraft maintenance, and see what we can do to lessen this human trait.

We humans do make a lot of errors and these errors range from the trivial ("where did I leave my car keys?"), to the ultimate tragic loss of life(s).

Firstly, what is an error? In its simplest form, it is "anything in which the result was not what you expected". Thus, if you are divorced, you made an error when you married. Interestingly, some of us go on to repeat the same error more than once. (has anyone been divorced twice?)

Alexander Pope
1688 - 1744
"To err is human. To forgive divine"

Thus, if we are to reduce human error, we have to learn from our mistakes. This can be an expensive way to learn as it requires us to make an error before we react. Sadly, we don't always learn, but blame the error on being careless, stupid, dumb or just too lazy to do it right. Then it comes as a surprise when you make the same mistake again. In order to learn from our mistakes we have to first learn why we make them and what we can do to avoid making them in the future. With that understanding, we can now begin learn from the errors we make. We can begin to create "Safety Nets" in order to ensure that we don't make the mistake again. A Safety Net is a practice or procedure that you use to

help ensure that an error is not repeated. For example: you decide to always leave your keys hanging on a special hook whenever you enter the house. This will lessen the chances of you losing them somewhere. Better yet, let's try to learn from the mistakes of others as well. That is a lot less expensive and often a lot less painful. To do this we need to know about the mistakes and thus they have to be reported and analyzed.

This is where the other half of Pope's quotation comes to play – To forgive (is) divine. Giselle Richardson, a keynote speaker at a human factors symposium, informed our industry that "only the Mafia with their cement boots have a harsher discipline policy."

Often we, and others in our industry, will tend to hide the things that we don't have to report. Before most people will report their errors, they have to understand why they made the error, and trust the system to treat them fairly if they report their error. To trust the system there must be a just culture in place.

A just culture is one where any error or near miss will not result in discipline except in cases of recklessness. Recklessness must be defined as a case of an error in which the person knew there was a significant chance that an error could occur and chose to do it anyway.

These reported errors can now be analyzed (risk analyses) and corrective actions can be put in place to eliminate or lessen the chance of the error occurring. That is what a correctly functioning Safety Management System will do. What we are talking about is really very simple. We begin to sweat the small stuff so that we don't have to sweat the big stuff. We work, breathe and sweat the small stuff and with our participation, we and our industry will be Safer.

Mr. Pope had it right over 300-years ago.

Gordon Dupont
System Safety Services