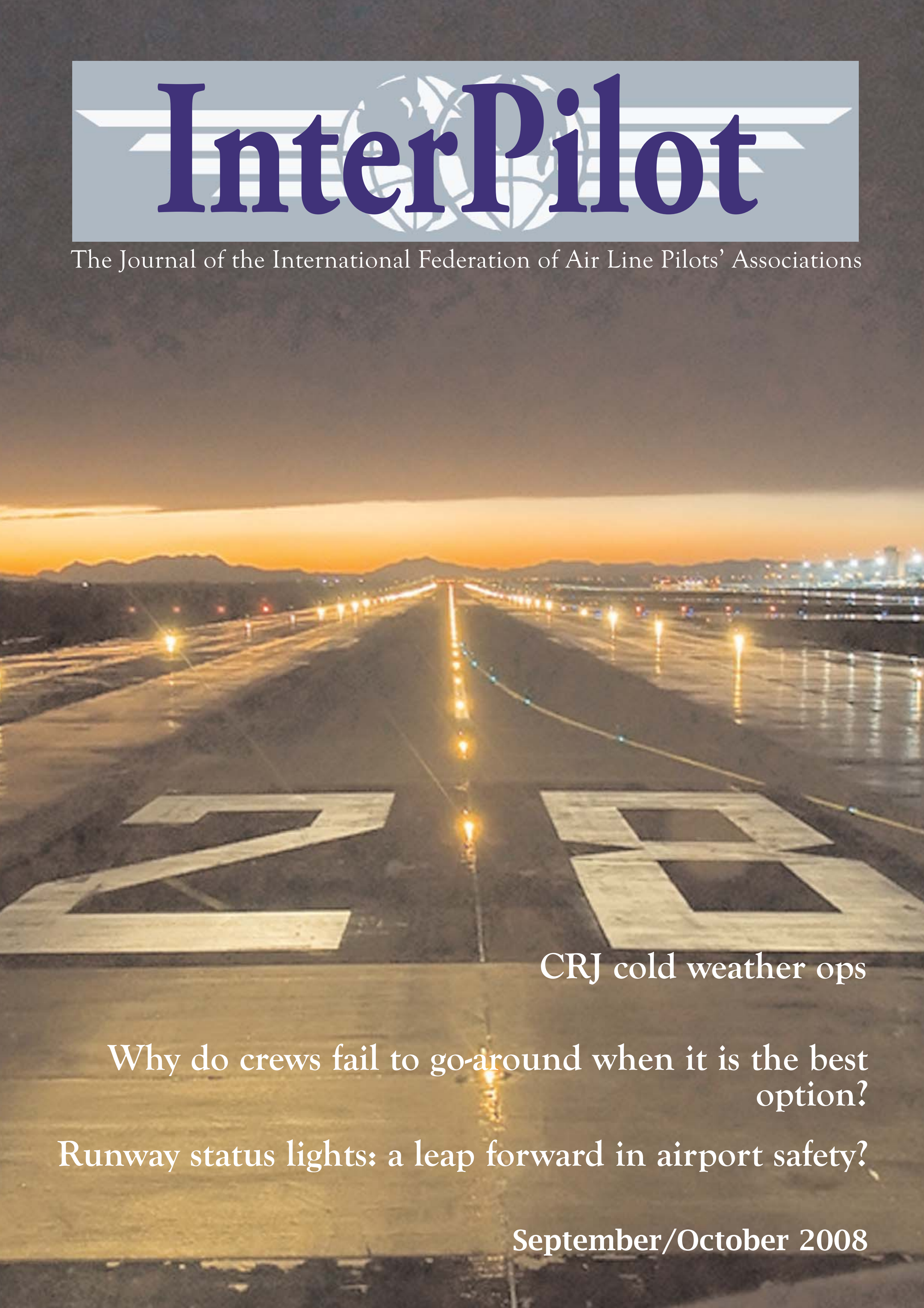
InterPilot

The Journal of the International Federation of Air Line Pilots' Associations

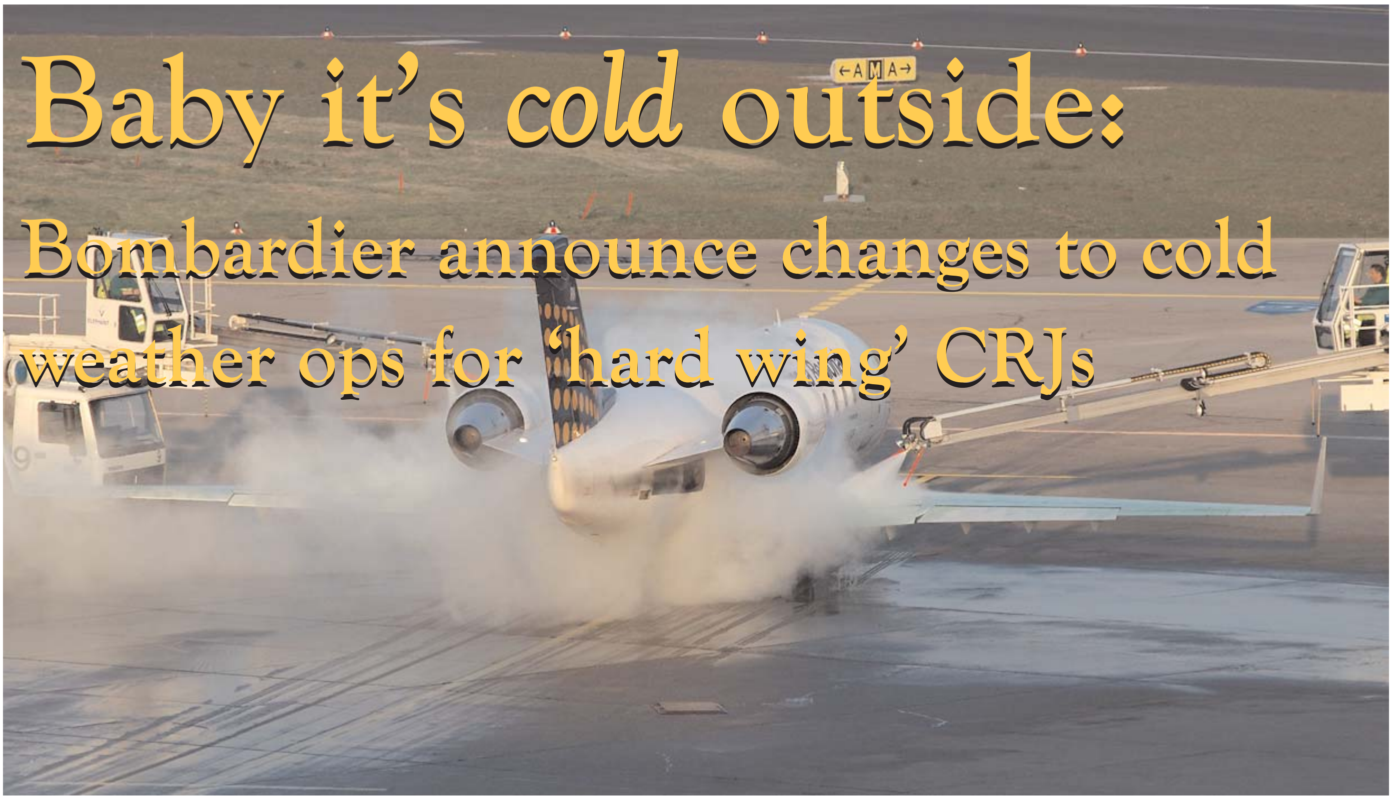


CRJ cold weather ops

Why do crews fail to go-around when it is the best option?

Runway status lights: a leap forward in airport safety?

September/October 2008



Baby it's *cold* outside:

Bombardier announce changes to cold weather ops for 'hard wing' CRJs

In the wake of a number of stall on rotation accidents, Bombardier has released training materials which highlight threat mitigation procedures for the CRJ100/200/440 series regional jets and the CL600/850 series corporate jets when icing conditions are present. ***Gideon Ewers*** *looks at the changes and takes an icing conditions refresher.*

In recent years, there have been a number of accidents and incidents involving aircraft from Bombardier's CRJ100/200/440 RJs & CL-600 series Challenger business aircraft in cold weather conditions. These incidents have had similar patterns, a normal take off roll, then a sudden and un-stoppable wing drop on rotation. In some of the cases this roll has been arrested and the flight recovered, in others the result has had a tragic outcome. However in all cases the aircraft have succumbed to the same condition, an aerodynamic stall with leading edge separation.

In theory of course this shouldn't happen. We know that long before the wing will stall protection devices like the stick shaker or pusher ensure that the critical angle of attack (AOA) is not reached. Yet it has happened and the threat for recurrence as winter approaches remains. An NTSB study of 583 accidents in the United States between 1982 and 2000 where air frame icing was a factor revealed that although the frequency of these events is declining, a trend is emerging that it attributes to a combination of better weather forecasting and greater pilot awareness of the icing hazard. While the overwhelming majority of the accidents in the study involved general aviation aircraft, perhaps unsurprisingly it also noted that in accidents involving aircraft engaged in air transport operations 70% occurred in the take off phase of flight which suggests that even highly experienced pilots are prey to complacency to the hazards posed by wing contamination and pre-flight inspection procedures are not rigorously being ahered to.

> ***During takeoff pilots will not notice any degradation in performance due to the presence of contamination until rotation.***
> *Bombardier Icing Awareness Training*

In order to consider the scale of the problem let's take a trip back to the classroom and ground school lectures on aerodynamics. If you recall, for a wing which is thick with a rounded leading edge and camber, the stall begins with a progressive breakdown of laminar flow from the trailing edge which progresses forward along the wing's chord until the maximum lift co-efficient is reached. Even so, the remaining transition to stalled flight is relatively benign and there is plenty of pre-stall buffet to warn the unwary pilot of the proximity of the stall.

On wings designed for high speed flight the situation is more acute (and especially so on performance wings without slats or other leading edge devices). As with the thick wing even in normal operations the wing has a certain amount of turbulent flow. There is a separation from laminar flow near the leading edge of the wing which quickly re-attaches creating a small 'bubble' of turbulent flow however this bubble has little or no impact on the lift created by the wing when the AOA is below the stall value. However as AOA increases so the pressure peak at the on the upper surface of the leading edge rapidly increases and at higher values the speed of the airflow over the leading edge may increase into the transonic or supersonic range setting up a shockwave. Increase AOA to the critical stall value and the 'bubble' bursts and the turbulent flow is established instantly and over the entire chord of the wing. Spanwise this type of stall tends to initiate at mid span or toward the wing tip. The suddenness of the stall causes flow to be disturbed around the area of the initial separation promoting a rapid spread of the stalled condition.

Prior to this type of stall there is no aerodynamic stall warning in the form of natural buffet, it is complete and it is sudden. Due to the suddenness of the stall it rarely occurs symmetrically and induces a wing drop into the stalled wing. The wing drop results in the apparent AOA of the down going wing to be increased while reducing the AOA on the up going wing in other words the classic auto rotation spin. As the aircraft departs from controlled flight in this manner even full aileron and rudder inputs will not arrest the roll of an aircraft in this type of stall. The only recovery possible is for the AOA to be reduced which will result in loss of altitude. OK, nothing new there, and as I mentioned earlier there are adequate protections in the form of stall warning devices, stick shakers and pushers, to stop this from occurring. However, it is important that the impact of ground effect and wing contamination is taken into account. Stall protection devices are designed to react to the aircraft's AOA with defined values as trigger points. Ground effect as we all know increases the effective lift of a wing but nothing in aviation is free, and while lift is increased so the wing's maximum AOA is reduced, in maximum ground effect this is as much as a 2 to 4 degree reduction in stall AOA. Of course, this effect reduces as you climb and one span AGL ceases to be a factor altogether but in stall on rotation type event this is clearly a significant factor.

Contamination a killer

Add to the element introduced by ground effect the impact of contamination on a wing. Any contamination will reduce the performance of a wing and the effect is greater the smaller the aircraft. To illustrate the point, Bombardier say that if CRJ100/200/440 sized aircraft had leading edge contamination equivalent to being coated with 40 grit sandpaper then the lift coefficient would be reduced by up to 30% and the stall AOA - would reduce by as much as 7 degrees. Significantly even small amounts of contamination result in a significant reduction in the stall AOA some case to around 3-5 degrees. If the right combination of contamination and ground effect is present the aircraft will suffer an asymmetric aerodynamic stall which in the words of Bombardier "Unfortunately may not be recoverable"

Even small amounts of ice snow or slush on the wing leading edges and forward wing upper surface may adversely change the stall speeds, stall characteristic and the protection provided by the stall protection system which may result in a loss of control on takeoff.
Bombardier CRJ100/200/440 FCOM Vol 2

In today's environment the pilot in command is faced with a number of operational pressures. There is the need to keep to schedule, to meet slot times when the there may be a long wait for the de-icing truck for a first or second application of de-icing fluid, there are the commercial pressures that arise from the cost of the fluid as well as increased fuel burn as a result of extended ground operations. However these pressures can be mitigated with greater knowledge (both of the impact of contamination on a wing's aerodynamic performance and how the de-icing fluid performs) and is clearly a good place to start but this decision making must also be supported by well defined company policies that are rooted in a culture that promotes safety as paramount supported by a safety management system and a non-punitive reporting culture.

Mitigation strategies

In reaction to this hazard Bombardier have made a series of important changes to the limitations and procedures for CRJ100/200/440 & Challenger 850 (they also apply to the Challenger 600/601/604/605) contained in the

In ground effect, the lift of a wing increases and, at the same time, the maximum AOA will decrease. It has been shown that in maximum ground effect at the point of rotation or touchdown the stall may occur at an AOA value 2 to 4 deg lower compared with clear air. This impact reduces to zero at a height around one wingspan from the ground.

Quick Reference Handbook (QRH), and Flight Crew Operating Manuals (FCOM). While these changes are obviously focused on the CL-600 family of aircraft many of the recommendations apply to any aircraft. Many of the notes in the FCOM and QRH as well as the icing conditions training offered on the Bombardier website centre on recognition of the hazard presented by flight in icing conditions as well as the mitigations available.
This, argues Bombardier, starts with the pre-flight. What are the conditions? Are they conducive to icing? Sometimes this may be obvious but as the parameters set out are: Outside Air Temperature (OAT) less than +5C (+41F) and there is any kind of visible moisture (clouds fog or mist) below 400 ft AGL (a good benchmark is when the OAT/dew point spread is less than 3C (5.4F)) or the runway and or taxiways and aprons are contaminated. If an aircraft has been stored in a warm hangar for a period of time so that that the skin of the aircraft has warmed above freezing and then towed out to a gate prior to flight 'dry' blowing snow melts on contact and then re-freezes as clear ice. Equally, an aircraft parked overnight in frost conditions may have frost persisting on the airframe even when the OAT is over 5C
Another frost creator is cold soaked fuel.
If the aircraft has just landed from a long flight with a reasonable amount of fuel remaining in the tanks and the fuel temperature has fallen below 0C (32F) then frost may form on the airframe even if the OAT is over 5C the phenomena has been observed with an OAT of 10C (50F) when the relative humidity has been high.

Ice detection

When the weather turns cold the only reliable wing is a clean wing, that is to say one that is free of any contamination. When the prevailing conditions indicate that icing might be present than always ensure a careful pre flight inspection of the aircraft with ice in mind, don't forget that some forms of ice, for example clear ice, may be difficult to spot especially when the lighting conditions are poor. Sometimes the only reliable test is a 'gloves off' tactile test. It might be cold but it could save your life!
Two exceptions to the clean aircraft rule are permitted according to Bombardier. If the upper surface of the fuselage has light contamination, in other words lines and markings on the surface of the fuselages are still visible, then this contamination can be left. Likewise, if the under surface of the wing is frosted as a result of cold soaked fuel then provided the frost is less than 3mm thick it need not be removed however it is worth restating that ANY contamination to the upper surface of the wing and on ANY surface of the horizontal stabiliser MUST be removed

De/Anti-Icing

Anti-ice 'hold over times' are variables based on a number of factors so that the figures in the charts, although generally conservative, must not be seen as absolutes, as ambient conditions can radically shorten holdover times for example if there is heavy precipitation or high humidity.
In the revised CRJ QRH and FCOM the procedure for taxi when the OAT is lower than +5C is to select wing anti-ice to ON for final taxi to allow time for the wing leading edge to heat up prior to take off unless the aircraft has been de-iced using Type II, III or IV fluid since these materials lose effectiveness if heated when on the wing. In the case of a single engine taxi the recommendation is to delay this until after starting the second engine. The revised manual also notes that crews may see the L or R WING A/ICE caution messages displayed during taxi but they must be verified as out and the WING A/ICE ON advisory light

Excessive rotation rates (exceeding 3 deg/sec) or over-rotations may lead to high pitch attitudes and AOA being attained while the aircraft is near the ground. This can reduce stall margins significantly resulting in stick shaker/pusher activation and potentially loss of control. Pilots must rotate smoothly towards the target pitch attitude then transition to speed control.

CRJ AFM Vol 2 – Limitations – Operating limitations

Even at normal speeds taxiing on wet taxiways especially those contaminated with slush or snow may cause contaminents to be thrown onto the leading edge of the wing as well as the horizontal stabiliser and flap tracks

is on prior to take off. Furthermore, if the wing anti ice is not required for takeoff it should be selected OFF prior to take off. If wing anti ice is selected ON then the cowl anti ice should also be selected ON for takeoff but doesn't apply to taxi operations

Taxi tactics

Clearly there are some common sense strategies to reduce the risk of wing contamination during the taxi. Obviously taxiing at higher speeds on wet taxiways especially those contaminated with slush or snow may cause contaminents to be thrown onto the leading edge of the wing as well as the horizontal stabiliser and flap tracks (this is a possibility even at normal taxi speeds). For this reason Bombardier also suggest avoiding the use of reverse thrust during taxi.

Other mitigations to consider are delaying flap extension (and /or completion of the taxi checklist), monitoring flap position indicators when the flaps are in transit and increasing the following distance behind other aircraft since anti-ice fluids can be displaced by the effects of jet blast and prop wash from preceding aircraft and thus significantly reduce hold over times not to mention the risk of contamination being blown onto the wing or into the engines. It's worth recalling that the taxiing too close to preceding aircraft was cited as a factor in the 1982 crash of Air Florida 90, a 737 which stalled shortly after takeoff from Washington Reagan.

Prior to take off, if holdover time expires or there is any doubt over the condition of the wing then return for a detailed inspection and if needed a second de-icing and re-application of anti –ice fluid.

As always one of the best hazard reduction strategies is an adherence to the procedures laid down in the manuals. In the accidents involving their aircraft Bombardier noticed a trend for early rotation (this is initiating rotation below the computed VR) and 'over aggressive' rotation, in other words, a pitch rate of greater than the recommended 2-3 degrees per second toward initial pitch attitude. Furthermore, failure to set the pitch trim to the computed centre of gravity may result in excessive rotation rate at take off

On the CRJ, the -904 or the -037 flight control computer has a set 12 deg pitch up target for take off with all engines and 10 deg for single engine operations. Reducing the target pitch attitude to 10 deg will reduce the tendancy to over rotate the aircraft while at the same time keep takeoff performance consistant with published data. For aircraft with older versions of the FCC it is possible to manually set the pitch target to 10deg, for instructions on how to do this see the FCOM Vol 2 section "Supplementary Procedures – Automatic Flight Control System – Take Off".

This article was based on the training materials that can be found on the Bombardier training website www.batraining.com

Why crews don't go around

While the old saying "what goes around tends to land better" is one of aviation's great truths there are still a significant number of approach and landing phase incidents and accidents which might have been prevented by a go around.
Capt. Gavin McKellar *considers why crews continue with approaches that might have been better thrown away.*

At the Flight Safety Foundation International Advisory Committee (FSF IAC) meeting in Montreal, a good presentation was made on the value of the go around as a prevention strategy for approach and landing accidents. I decided to share my findings so they can be added to those of others and the FSF IAC work can be of use and perhaps, help, in the building of a go around culture and in preventing approach and landing accidents.
My input stemmed from my time as the Flight Data Analysis (FDA) Manager at South African Airways (SAA), I ran the department for five years. Prior to that I was on the FDA Committee and in the last year I have served as the FDA 'gatekeeper'. In these roles I've had the opportunity to talk to pilots involved in exceedances. Two questions I've often asked when talking to crews involved in deviations in the approach and landing phase is "did you consider a go around?" and "if you thought about going around, why didn't you?" Armed with this feedback I was able to correlate the factual FDA data with qualitative findings from crews.
The quantitative data comes from the output from the software used in the SAA FDA programme, namely AIMS and AirFase. The interviews were based either on crew reports, FDA feedback reports, emails, telephone or face to face interviews. In fact I developed the feedback report form myself (see figure 1) and designed it so that additional questions could be easily added if required. Obviously, we need to have good quantative data for our safety management efforts but I also believe that you cannot do without the value that qualitative data brings since it is here that many of the whys and wherefores of human factors issues lay.

The findings

When considering this data you must remember that your response to it will be skewed by your own pre-conceptions where one looks or perhaps how one looks, so one will find answers. It depends on your focus. Nevertheless here are my findings.

The most common reason crews would give me for not going around is that they did not consider it unsafe to continue the approach. When I went through the event again with the crew, as well as explained how safety is subjective and acceptable risk is often found in legal compliance, procedures and SOPS, then the crew would almost always agree that a go around should have been carried out.

The second most popular reason in my mind is that crews felt invulnerable. They never seemed to believe that their flight profile could lead to an accident. Rationalization was high on the list. Crews would look for the positive signs and have them override the negative. For example, crews would be happy that the landing was 'on the markers' and this would override the fact that they were fast. The question is, is risk increased proportionally the more we rationalize?

I found that sometimes commanders would override the F/O's call to go around. It appeared that the call from an F/O was taken more as a hint or suggestion. There were a few cases when calls to go around were ignored although this occurred more frequently when the Captain was acting as PF. A much more seldom scenario was one in which the F/O would ignore a Captain's call to 'go around'. However, there were cases when an F/O complied with a Captain's call to go around but disagreed with the call and sometimes this was only resolved in the post flight debrief or not even until the debrief meeting with me.

I found hazard enhancing thought patterns. In addition to the invulnerability attitude mentioned earlier, I found instances of the anti-authority, macho and resignation attitudes.

Sometimes confusion of procedures was an issue. At SAA we had a stable approach by 1000ft in IMC conditions reducing to 500ft when VMC prevailed this was later changed to 1,000ft AGL on radio altimeter (RA) on all approaches. There was an allowance that in VMC the wings had to be level by 500ft but that the approach must be stable in speed and flight path angle by 1000ft RA in both VMC and IMC. What happened was that they found themselves unstable at the 1000ft gate continued to 500ft in VMC satisfied that they complied with the stable approach parameters. No matter how many times the actual requirements were re-briefed and emphasised I still found the confusion remained. Mind you I also noticed that once a pilot had used this reason it was not used again. They then recalled the stable by 1000ft RA for all approaches requirement(at SAA we have a three strikes policy - the first instance of an exceedance results in an informal debriefing, the second time (within 12 months) there is a further, formal debrief with a Pilot Association representative present and in the third similar exceedance (again within 12 months) the pilot's name is passed to the Chief Pilot – mind you we have only got to this stage on a few occasions in the 19 years that the FDA programme has been running).

Another reason given for the continue decision was pressure from other elements, most commonly keeping to schedule when a flight had already departed late. The next most common was when the go around would take the aircraft into poor weather. These were followed by passenger inconvenience and discomfort, the go-around requiring a tricky manoeuvre with a new F/O and finally fuel issues, for example "if we had gone around we would have had to divert due to being on minimum fuel"

My statistics also revealed that the most exceedances (44%) occurred during visual approaches while 39% of cases the Captain was the PF. Poor weather was responsible in 35% of cases. New crew was a factor in 30% while ATC factors were blamed in 25% of cases. Training flights accounted for 20%. CRM issues also came into play in 20% of cases with fatigue a possible factor in 16% of exceedances. Interestingly, I found that newly promoted Captains seemed reluctant to fix exceedances early and instead hinted or cajoled the PF to 'get in the slot early' rather than issuing an instruction.

Sample of prevention strategies used

We used our FDA data for accident prevention and education and here are some of the safety initiatives we developed, directly or indirectly as a result of our FDA programme. (I believe in an effort to create a culture of closing the safety loop-we must discuss implementation of prevention strategies after we identify risks and problems). So we introduced examples from our FDA data on CRM training courses. We introduced threat and error management training. We started teaching the concept of the safety window being the red box. The blue box was then that area from top of descent to the red box. We encouraged crew to identify and rectify their exceedances in the blue box and not wait until they entered the red box, or arrived unstable at the 1000 feet gate. We introduced Approach and Landing Accident Reduction (ALAR) training and aspects of FDA and

A missed approach procedure that would take the aircraft toward poor weather or high ground was frequently cited as a reason a go-around was not executed.

ALAR were taught on the command course taken by potential Captains. A notable element we picked up from the FDR interviews was that some reluctance to go-around may have stemmed from the requirement to report the event with the attendant paper work. We were able to amend the company's operations manual so that go-arounds are now considered a 'normal' manoeuvre which no longer requires a report. We also looked to the role that our colleagues in ATC have and discussed with them ways to prevent exceedances from being 'ATC generated'.

FDA a two way street

In addition to the training we also disseminated information from the FDA programme, for example each month a FDA summary was put on crew room notice boards. Crews can also view their flights on the AirFase computer in order to conduct a self-debrief. Furthermore, FDA data was also used to improve training effectiveness. As an example we had noticed that go arounds from higher altitudes often lead to exceedances so this was introduced into the syllabus. Away from the go-around (or non-go-around arena) we also noticed that on some types, pilots were having fast rotation rates. Again the syllabus was altered in an effort to eliminate these types of event. As I mentioned earlier with fatigue considered a factor in a significant number of exceedances we also introduced fatigue awareness training.

FLIGHT DATA ANALYSIS PROGRAMME

Date xx-xx-200X

Dear

DETAILS; DATE OF EVENT-
REGISTRATION
FLIGHT NUMBER

EVENT DESCRIPTION
(Please check if you were in command/crew on the flight and then please provide me the applicable feedback. This is so I can understand the hard data and look to see what trends I can pick up in the interest of prevention. Besides explaining what and why it happened. Please also consider;

Was it a visual approach as declared with ATC?

Who was the PF?

Was a go around considered and if so, why was it not executed?

Are either crew < 1 year on type or in command?

Was it training or checking sector?

What was the weather like?

Any CRM comments?

Fatigue issues or long flight and duty?

ATC involvement?

Man –machine interface problems?

Training issues?

Any other ideas for prevention of a reoccurance?

Supplementary information

Please return to my box 2K in JNB or CT13 or better still email me at gavin.mckellar@wam.co.za
Telephone 00 000 0000 or cell 000 000 0000 (anytime)

Yours truly, Gavin McKellar

THIS FDA SUMMARY DATA IS CONFIDENTIAL. IT IS GAINED, MANAGED AND USED AS PART OF AN AGREEMENT BETWEEN SAA AND SAAPA. IT IS RESTRICTED FOR SAA SAFETY ACCIDENT PREVENTION USE ONLY

Example report form

There I was…and I learned about flying from that

It is always a good thing to learn from errors so that they are not repeated and better still if you can learn from the errors of others, many a valuable lesson has been taught through the medium of hangar flying! So we also started an awareness programme through magazine articles in which the lessons learned and feedback from the de-identified FDA interviews was shared to all crew. We included articles on visual approach hazards, approach and landing accident reduction, tail strike avoidance, situational awareness and control and the importance of landing in the touchdown zone.

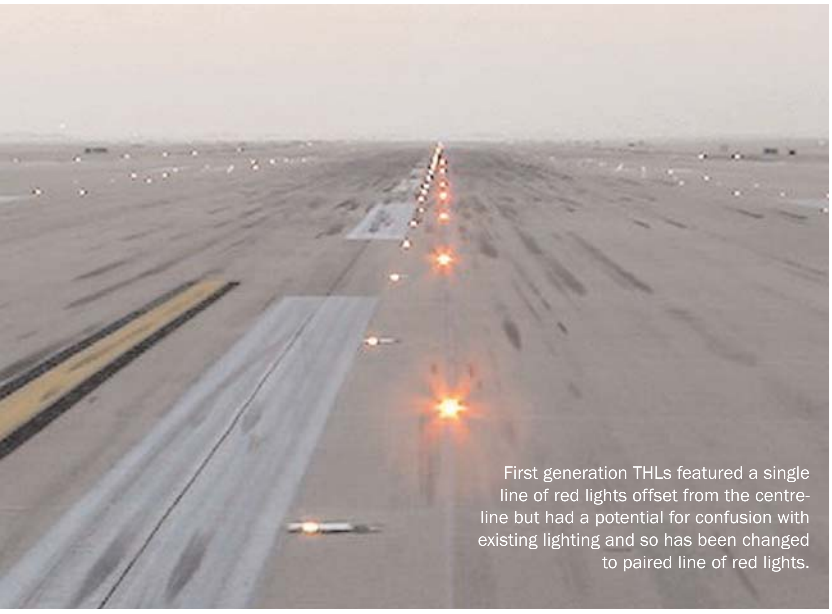
Working with the company

In order for the data gained from the FDA programme to be meaningfully supported by the feedback from de-brief interviews; immunity from disciplinary action is an absolute. Without it, the candor of the interviews and thus the validity of the data is irreparably damaged. So we secured agreement from the company management that the parameters set out in the FDA agreement are strictly adhered to. Furthermore we were able to secure as part of just culture development an immunity policy this was supported by a published policy signed by the SAA CEO.

Red lights...mean danger...a warning...

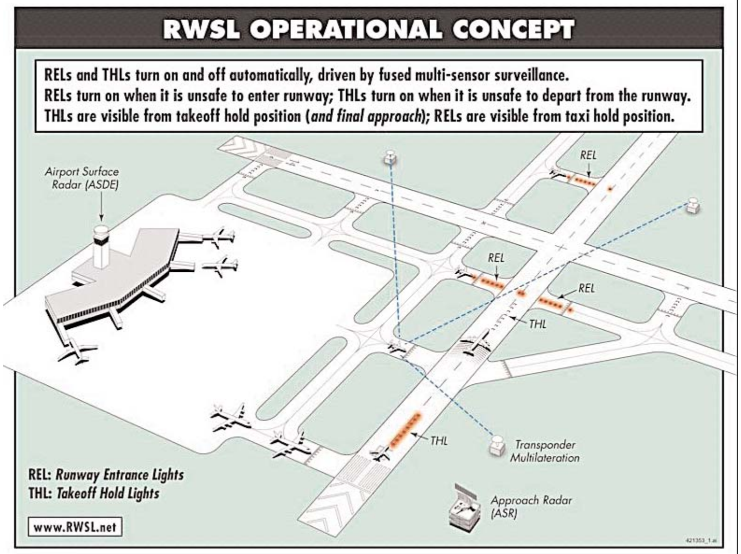
As the Motown great warned red lights can warn of bad news. The use of lights to indicate runway occupancy is a concept that has been around since the early 1990s but now the technology is maturing to a level where the concept can become a reality. ***Gideon Ewers*** *investigates.*

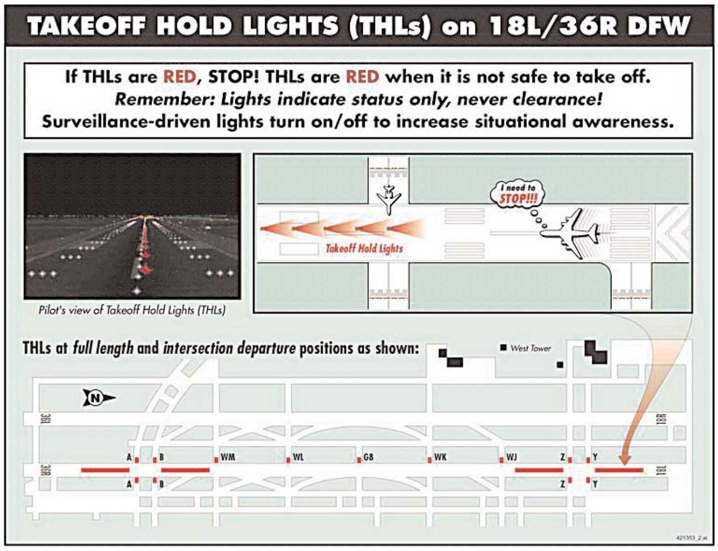
Runway incursions remain on the top on the safety agenda for most organisations involved in air transport safety. The fact remains that these events occur regularly and they pose a real and significant threat. As traffic increases so airports become more congested and the risk of an incursion increases. Clearly there are a number of solutions that can be implemented especially when an airport is being developed or extended. Reducing or eliminating the need for runway crossings as watch word in the design is of course the optimum. Existing airports too can be improved by the construction of end- around or perimeter taxiways. In addition, there are a host of other procedural initiatives that can be employed to reduce or mitigate incursion risk. At the same time, there are technology based solutions that can be adopted. One of the solutions is the use of Runway Status Lights (RWSL). The use of RWSL as a runway incursion prevention measure has been the subject of a study by The Massachusetts Institute of Technology's Lincoln Lab for more than 15 years Starting in the early 1990s the Lab developed an operational concept which was field tested at Boston Logan Airport (KBOS). This work was supported by the NASA Langley Research Center which looked at the human factors elements and the Volpe National Transportation Systems Center which investigated the installation and operations issues. These studies all concluded that the RWSL system would prove a very effective means to prevent runway incursions.



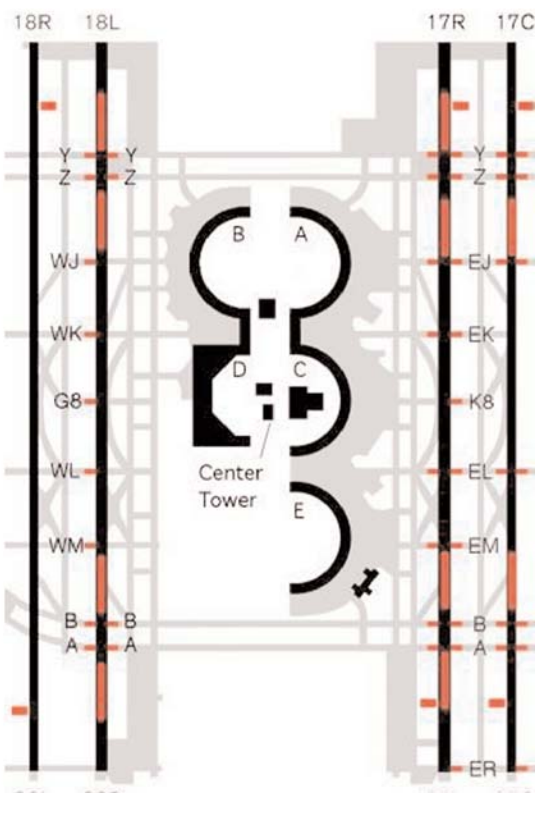
First generation THLs featured a single line of red lights offset from the centreline but had a potential for confusion with existing lighting and so has been changed to paired line of red lights.

However the systems performance would depend on high quality surface surveillance radar. A level of fidelity that has only recently come to fruition with the development of ASDE-X and AMASS system (where surface movement plots are fused with beacon multilateration position estimates) just after the turn of the century. This development prompted a 2002 re-examination of the earlier RWSL work prompted a test programmes for runway entry lights (RELs) at Dallas Ft Worth (KDFW) and San Diego (KSAN) airports. The REL systems were placed at a number of key runway/taxiway intersections and almost immediately began to receive positive feedback from pilots. Like all good ideas the system is relatively straightforward. The Surface Surveillance radar detects that there is traffic on a runway and that further it will present a conflict to any crossing traffic. The parameters set in the system basically are looking for high speed traffic that indicates arriving or departing traffic on the runway. When this happens a line of red lights illuminate along the taxiway centreline delivering a clear indication to the crew that even if they have been given a clearance to cross the runway (in error or otherwise) that the runway is not safe to cross. This process happens automatically without the need for controller action. Even more interesting as the aircraft on the runway passes the relevant intersection then the red stop lights are extinguished, again without the need for controller input (although the lights going out should not be seen as a tacit clearance to cross the runway).





The present RWSL set up at Dallas Ft Worth

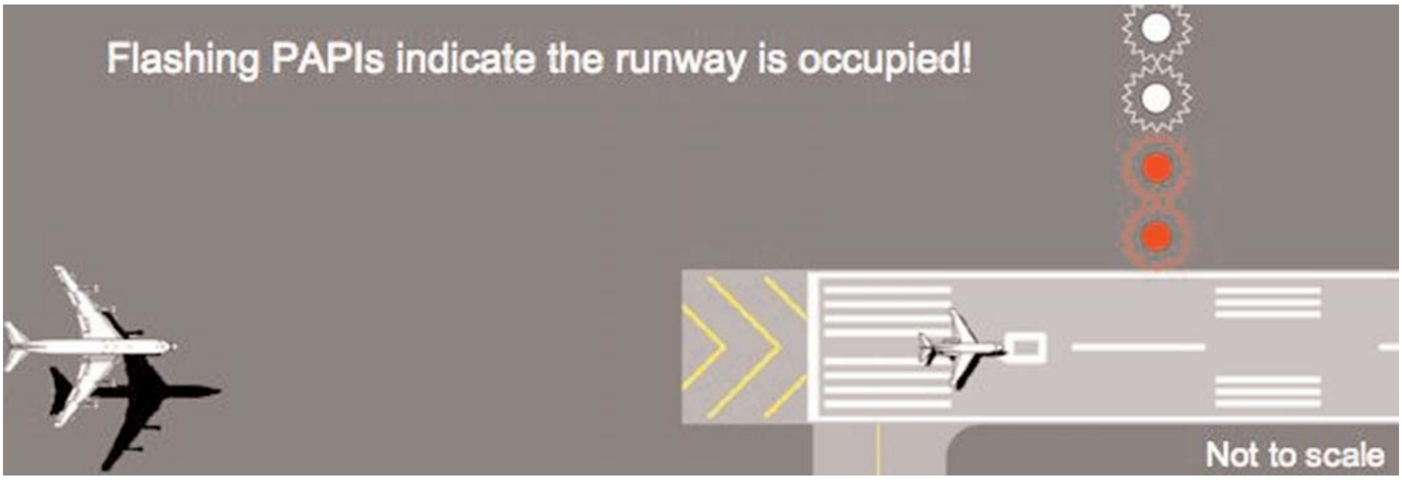


THLs make saves at DFW

The concept was extended earlier this year with the start of trials of Takeoff Hold Lights (THL) on runway 18L/36R at Dallas Ft Worth. The system shares the system logic of the REL lights already in operation on that runway except that that pairs of red lights will illuminate down the first third of the runway when it is unsafe to start the take off roll due to conflicting traffic this time crossing the runway.

Almost as soon as the system was operational it began to prove its worth with two potentially disastrous events averted by the system's provision of safety critical incursion/collision risk information in real time and without controller input.

In the first case a Saab 340 was cleared for an intersection takeoff (from the Bravo intersection on 36R). Seconds later, the controller wrongly believing that a position and hold clearance had been issued to the Saab, cleared an MD 80 to cross the runway (at taxiway Yankee). The Saab crew meanwhile having received clearance to take off noticed the chain of THLs and held position telling the controller "we were cleared for take-



off but we've got the red lights". The controller then amended the clearance to a position and hold.
Within weeks ATC cleared a large commercial aircraft but the takeoff was rejected early in the roll by its crew when they noticed the THLs triggered by a crossing regional jet. Commenting on the incident the Captain said "We started the takeoff roll but then saw the lights so we immediately aborted the takeoff. I looked down the runway and saw the lights of an aircraft crossing the runway left to right. I noticed the red lights before I saw the intruding RJ. The RWSL worked – this is awesome...put them everywhere".

FAROS out there

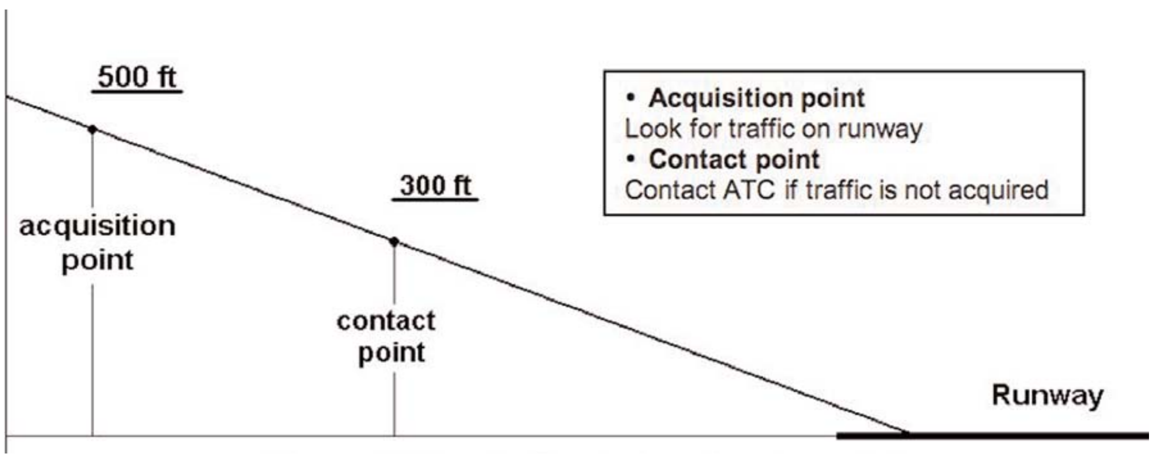
The next stage in the development of the system is to give pilots on final approach a visual indication of the occupancy status. Obviously the visual nature of the indicator will limit its effectiveness in low visibility operations but none the less could provide pilots with an additional cue that the runway ahead may be occupied for whatever reason and especially at night. The Final Approach Occupancy System (FAROS) uses the existing lights of the Precision Approach Slope Indicator (PAPI) to provide the warning that the runway ahead is occupied – when it is occupied the PAPIs will flash and as soon as it is clear they revert to their normal, steady, state. As with the THLs the FAROS will be trialled first at Dallas Ft Worth. Trials began with a shadow operation on runway 18R/36L and will be extended to include runways 17R/35L and 17C/35C.

The way forward

The FAA has called for the RWSL programme to be accelerated with the system installed at 22 airports in the United States by 2011 including the international hubs at Atlanta (KATL), Baltimore-Washington (KBWI), Boston (KBOS), Chicago (KORD), Denver (KDEN) Houston (KIAH), Los Angeles (KLAX), Newark (KEWR), New York (KJFK) and Washington (KIAD). In the meantime trials will continue and pilot feedback is especially welcome and encouraged.

You can find out more about the RWSL and give the programme your feedback at www.rwsl.net

Pilot actions when FAROs is employed



Eurocontrol ARM course

The Aerodrome Resource Management (ARM) Course was held from September 8th-12th at the Eurocontrol Institute of Air Navigation Services (IANS).
Brian Greeves *attended and reports from Luxembourg.*

I attended the course at the kind invitation of Yvonne Page, Project Manager for Runway Safety, Eurocontrol, and with the permission of the Deputy President, Captain Paul Rice. The invitation was issued following Yvonne Page's participation as guest presenter in the Local Runway Safety Team Course held in Luxembourg in June 2008. This occasion also provided an opportunity to visit the IANS, view the facilities and open a dialogue with the IANS Director of Training on the mutual exchange of training materials and the development of joint training courses.
The purpose of my attendance at the ARM's course was to view the course as "student", to assess its usefulness to IFALPA, to see what, if anything, could be used from this specific course for the IFALPA Training Programme and to conclude the earlier discussions with Mr Rik (Hendrik) Dermont, the IANS Director of Training on training cooperation.

Course aim and objectives

The aim of the course is "train the trainers" first by having the Human Factor modules on Communications, Error Management and Situational Awareness, as they relate to airports, demonstrated by the instructors (facilitators) and at the same time to learn how to deliver the modules using facilitation techniques. The objective is to minimise the impact of human error at airports.

"The ARM course strives to develop positive attitudes and behaviours by raising awareness of: controller/ pilot /vehicle driver to communication issues, potential hazards in operating procedures, situational awareness and error management."

The course includes modules on Communication Error Management Situational Awareness together with case studies, incidents analysis, movies and exercises

Overview of the course

Yvonne Page, Project Manager Runway Safety, opened the course and set the scene by showing an overview of runway incursions and prevention measures in Europe together with the European Action Plan for the Prevention of Runway Incursions. The ARM course was part of the strategy outlined in the plan to train and educate the stakeholders, in order to have effective Local Runway Safety Teams at every major and regional airport in Europe.
Basically, the participants needed to understand the material (for those not familiar with it) and to learn how to facilitate through the demonstration by the two instructors, Mikeal Henriksson and Capt. Johann Rollén. One is an air traffic controller and the other an airline pilot, as well as being airport experts .
I was a little sceptical that it would be both possible to

Course Format:

This is a 4.5 day course:

Days 1-3:Instructors demonstrate how to facilitate by presenting one module per day with the accompanying case studies;

Day 4 Participants deliver the ARM course, using the facilitation techniques learnt and based on the material presented;

Day 5 Local implementation: Participants Explain how they will use what they have learnt on the course to implement change at their own airport.

impart the subject matter (which is really CRM for airports) and "train the trainers" in facilitation techniques at the same time. In the event, this was successfully achieved, as shown by the presentations made by the three groups on Day 4 covering respectively each of the main topics. This success was without doubt due to the personalities and facilitation skills of the two instructors, along with the dynamics of the group, which included airport managers, operation staff, air traffic controllers, a regulator and a pilot (me). Likewise it was refreshing to hear the action plans presented by the participants to Yvonne Page on the last day, which clearly showed that the lessons learnt would be put into action at their respective airports. This is good for all of us, especially those operating within Europe.

The presence of an "IFALPA pilot" was greatly appreciated and I acted as both a student and an additional facilitator (with the willing consent of the two instructors) in getting the Airport Liaison Representative (ALR) message across, including using some of the materials from the IFALPA Local Runway Safety Team (LRST) course. There was tremendous warmth shown to me, because of the openness of the discussions, the admission of the mistakes I made when flying and by sharing the expertise both as a pilot and as an IFALPA airport expert.

The value of this was immense in "selling our Pilot Friendly Airport" concept and it is why I am recommending that experienced members of the IFALPA/ECA AGE Committee attend future courses. The course is FREE. In addition, we should encourage actual and potential LRST pilot representatives to attend in order to build a rapport and network with airport and air traffic personnel, to learn about the other person's point of view, receive further training and education concerning runway safety and to share and exchange information.

It was a good learning experience for me and I enjoyed it very much and now have an enlarged network of airport contacts, which will be of direct use to IFALPA. I will utilise some of the case studies and parts of the modules in future IFALPA courses. In conclusion, it was one of the most satisfying courses that I have attended both professionally and socially and would strongly recommend others to attend.

Training cooperation

I had extremely positive discussions with the IANS Director of Training, Rik Dermont and his staff on the use of Eurocontrol E-learning Modules, the use of its course materials and vice versa and areas, where we could develop joint courses.

The E-learning modules can be made available in two ways. One is to embed them into the IFALPA E-learning site and the other is to allow access to them on the Eurocontrol training site. The first will enable them to be used as pre-course training for participants in the IFALPA courses and the second to provide general training/education for our pilot members. Essentially, there are two types of modules; those that are available to anyone visiting the Eurocontrol training site and those that require a user ID and password. Access to the latter is limited by the number of licences available. I will work closely with the Eurocontrol manager responsible for E-learning, but the initial proposal is that a link can be made available on the IFALPA website to take anyone direct to the Eurocontrol site, where the "public access" modules can be viewed.

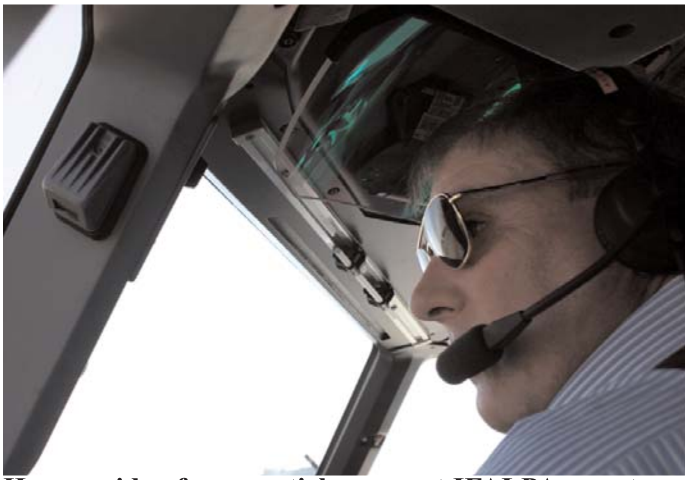
Some of the modules, which are of interest to IFALPA and are available in the Scorm format, but have a restricted access, will be uploaded onto the IFALPA E-learning site. The others will be available primarily to participants of IFALPA Training Programmes and to elected Federation officers and staff members. This is because the number of licences available to IFALPA, as an international organisation, is presently 500.

Other Course material, such as presentations, will be made available to IFALPA under a simple protocol. In return, IFALPA will allow the use of its modules (subject to copyright) to be used by IANS. IFALPA will be invited to send speakers, presenters and participants to the various training conferences, workshops and courses, as appropriate. IANS will make available its training facilities to IFALPA, subject to its own training requirements. Finally, IFALPA and Eurocontrol will look at ways to develop joint training programmes in the future.

All this has now been agreed in principle, subject, of course, to Executive Board approval. If this cooperation is approved, it will greatly enhance the IFALPA Training Programme at near zero costs as all the material will be made available, under a licence agreement, free of charge. In addition, the excellent training facilities will be available to IFALPA/ECA; there will a mutual exchange of training material; and the opportunity to develop joint training courses.

IFALPA joins struggle for JAL907 Controller Justice

IFALPA is joining with colleagues from ALPA Japan in supporting the appeal to the Japanese Supreme Court by Mr. Hideki Hachitani and Ms. Yasuko Momii the two air traffic control officers involved in the near miss between Japan Air Lines flights 907 and 958 on January 31, 2001. In March 2006, charges of professional negligence brought against the two by the Public Prosecutor were dismissed by Judge Hisaharu Yasui of the Tokyo District Court. This verdict was appealed by the prosecution and in April of this year the two were sentenced to a year and eighteen months imprisonment respectively. It is against this conviction that the appeal will be filed on October 31. The reason for the appeal is that there was no intent to cause harm by either of the two appellants and therefore the conviction is flawed. Worse than that, a climate of punishment for honest mistakes has a negative effect on the improvement of air safety and is contrary to the internationally agreed precepts set down in ICAO Annex 13. IFALPA has already begun its campaign of support and is working to raise awareness of the Japanese Governments refusal to comply with its Chicago Convention commitments.



Have an idea for an article or want IFALPAnews to cover your story? Contact Gideon Ewers, IFALPA Media and Communications Officer Tel. +44 1932 579041 or email gideonewers@ifalpa.org

Dates for your Diary

October

21-23
Accident Analysis & Prevention Committee Meeting
Bali, Indonesia
Contact: Arnaud du Bedat arnauddubedat@ifalpa.org

22-24
Human Performance Committee Meeting
Pretoria, South Africa
Contact: Donna Fogden donnafogden@ifalpa.org

November

10-12
Aerodrome and Ground Environment Meeting
Vancouver, Canada
Contact: Arnaud du Bedat arnauddubedat@ifalpa.org

11-13
Asia Pacific Regional Meeting
Seoul, Korea
Contact Carole Couchman carolecouchman@ifalpa.org

14-16
Air Traffic Services Committee Meeting
Kuala Lumpur, Malaysia
Contact: Sacha Whitehead sachawhitehead@ifalpa.org

December

2-4
Aircraft Design and Operation Committee Meeting
Tobago
Contact: Arnaud du Bedat arnauddubedat@ifalpa.org

3-5
Caribbean & South America Regional Meeting
Panama City, Panama
Contact Carole Couchman carolecouchman@ifalpa.org

8-9
Legal Committee Meeting
Pretoria, South Africa
Contact Donna Fogden donnafogden@ifalpa.org