

# Committee Corner

## News from ALPA's Committees

### Iris Imaging: Is It Safe?

A major concern in the U.S. and Canadian airline industry has been the need to develop a reliable form of identification for flight crews. Unauthorized access to the secure area of the airport is of paramount concern from a security standpoint, and ALPA has been addressing this issue for many years. Does this individual have a right and a need to be in this area? Has he been properly vetted? And how do we know that he is indeed who he purports to be?

Initially, ALPA hoped the Universal Access System would address these concerns. UAS became an ALPA project in the mid-1990s. However, after the events of Sept. 11, 2001, U.S. authorities decided that the UAS was not sufficient and that the entire transportation sector needed a secure method of identification. And so the effort began to develop the Transportation Workers' Identification Credential.

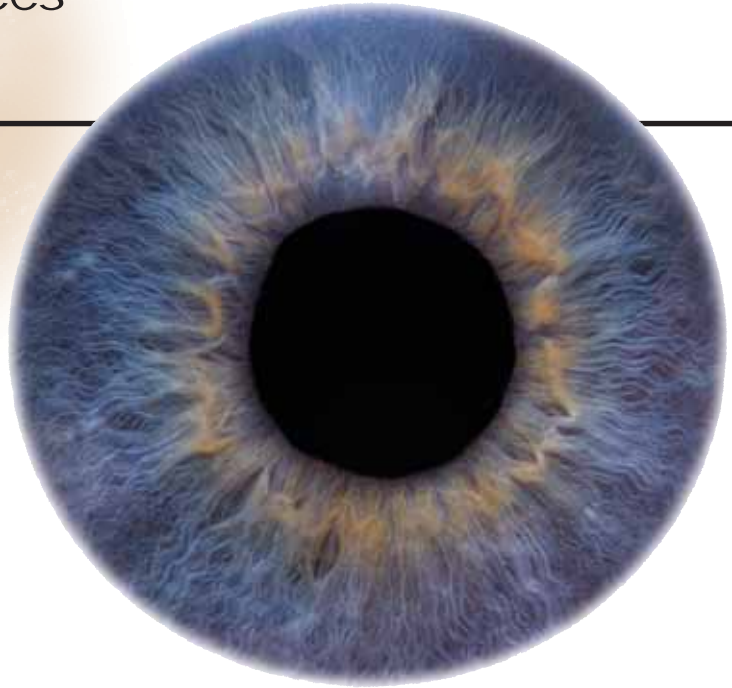
TWIC has presented many challenges. The feds' botch-



ing of TWIC implementation is outside the scope of this article, but north of the border some things have been happening that might give all pilots in North America some food for thought.

In Canada, regulators have historically taken an approach that's been fundamentally different from the one pursued in the United States. After the bombing of Air India Flight 182, which until the events of 9/11 was the largest terrorist attack in the history of the worldwide airline industry (329 deaths, mostly Canadian citizens), the Restricted Area Security Pass system was born. The first RASPs, issued in the late 1980s, were pretty low-tech—a green card with a black-and-white photograph laminated in plastic. They were, however, coupled with an extensive background check by the Canadian Security and Intelligence Service. This background check, which went much further than a simple criminal records check, was in fact a basic-level security clearance. This constituted a major paradigm shift in the way that Canada identified and vetted its flight crews.

In the mid-1990s, the RASP evolved into the Restricted Area Pass, which is still used in Canada. The RAP added better security features, including digital photographs and holograms, to help eliminate the possibility of fraudulent reproduction of the card. It was a major step forward.



Iris patterns showing individuality.

However, the RAP had one critical failing: Canada still did not have a good way of ensuring that the person presenting the card was indeed the person who owned it. Watch lists will not detect a fraudulent pass, and personal inspection of the pass depends on procedures that rely too

heavily on a human screener and thus are subject to human error.

Canada needed a better system. The answer was biometrics. In late 2002, after much lobbying by ALPA and other organizations in the aftermath of the September 2001 attacks, the Canadian government acknowledged that the RAP needed to be replaced. Funding was therefore committed to a project known as the Enhanced Restricted Area Pass, which



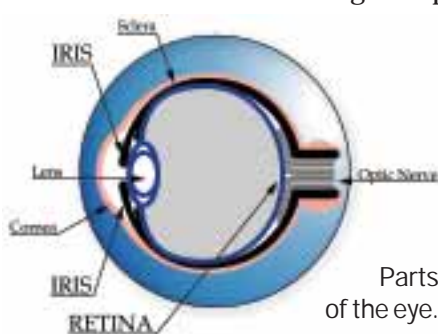
This is a sample Restricted Area Identification Card, which will be issued in a bilingual format in Québec.

would incorporate biometric technologies. The ERAP soon morphed into the Restricted Area Identification Card, which is now in the final stages of implementation and has begun to appear at some Canadian airports.

The RAIC uses two separate biometric technologies. Of the many possibilities considered, the two that were finally selected were the fingerprint and iris imaging. There were compelling reasons for choosing these two, not the least of which was cost.

Fingerprint was chosen due to its long acceptance by the general public as a reliable means of biometric identification, as well as the maturity of the technology. Also, fingerprint readers are relatively inexpensive and can be portable. This is a very good technology for smaller airports.

Iris imaging was chosen because of its reliability. Also, the technology was mature enough to maintain that reliability while at the same time allowing for advances that could be incorporated into the existing system. Although iris-imaging equipment is sometimes more expensive than fingerprint readers (depending on requirements), it is entirely suitable for installation at larger airports. In fact, it is in use in seven of Canada's largest airports as part of the



Parts of the eye.

CANPASS AIR program for expedited border clearance and for the U.S. NEXUS AIR program as it expands across Canada's airports. Iris imaging is also being

used as part of the TSA's Registered Traveler program and for other such programs internationally.

Before ALPA could lend its support to RAIC, questions about the safety, both real and perceived, of the different biometric technologies, most particularly the iris-imaging technology, had to be answered to pilots' satisfaction. Any time pilots' eyes are involved, we are always concerned.

How does iris imaging work?

Iris imaging involves taking a digital photograph of the coloured area of the eye around the pupil. Using a low-power infrared LED to illuminate the surface of the iris, the camera takes a picture of the iris and converts it to a 512-byte template. The digitized data are then compared to the data embedded in the card's memory chip.

The concern that ALPA and others initially had was

whether the LED would damage the eye. The infrared output of the LED used in the iris camera is similar to that of LEDs in use in many everyday articles, such as digital cameras, TV/VCR remote controls, and toys. And people are exposed to infrared light every day through simple exposure to sunlight. Bright natural light causes the eye to blink, the pupil to contract, and the person to avert his gaze from the light source. These defense mechanisms are caused by the intensity of the visible light and not the infrared end

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of the spectrum. The normal visible blue light we are exposed to every day is about 100 times more hazardous than infrared light.

Is iris imaging invasive?

It's important not to confuse iris imaging with retinal scanning. Dr. Don Hudson of ALPA's Aeromedical Office says, "I want to emphasize that iris imaging is *not* the same as a retinal scan. Unfortunately, most people's knowledge of 'eye scan' comes from what they see in *Star Trek* or spy movies like *The Bourne Identity*, both of which show iris imaging on the screen but call it 'retinal scan.'"

Retinal scanning analyses the layer of blood vessels at the back of the eye and involves using a low-intensity light source and an optical coupler; it can read the patterns at a great level of accuracy. Retinal scan requires the user to remove eyeglasses, place an eye close to the device, and focus on a certain point. The person being scanned looks through a small opening in the device at a small green light, keeping his head still and eye focused for several seconds, during which time the device will verify his identity. This process takes about 10 to 15 seconds total, which is considerably longer than the 2 to 5 seconds required for the iris imaging.

Retinal scan is by its very nature more invasive than iris imaging, as the scanning takes place inside the eye. Although retinal scan machines have been available for commercial use since 1984, they have not gained wide acceptance among the general public and have been largely used in military installations, nuclear power plants, and the like.

Iris imaging, on the other hand, does not involve the same level of invasiveness. The LED illuminates the eye so that the best-quality photograph possible can be taken, and also slightly varies the light source to enable the camera to watch for pupil dilation. This would remove the

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possibility of a “fake eye” fooling the system.

Iris imaging does have some limitations. For instance, watery eyes, long eyelashes, or hard contact lenses may cause a small percentage of failed readings. For these reasons, a dual biometric capability was built into the RAIC card; if one biometric fails, another can be used.

### Conclusions

In the opinion of David Sliney, Ph.D., “No health risks are associated with iris recognition, [which] uses a video camera to take a black-and-white picture of your eye. There are no flashes or bright lights as the camera uses low-level infrared illumination. The low-level infrared illumination is similar to what is used in TV remote controls.... Imager products meet U.S. and international eye safety standards, including ANSI/EISNA RP27.1-96 (Photobiological Safety of Lamps and Lighting Systems) and IEC 60825-1.2-2001.” Dr. Sliney is the manager of the Laser/Optical Radiation Program of the U.S. Army Center for Health Promotion and Preventive Medicine and is the consulting medical physicist for optical radiation hazard analysis. He developed safety-testing pro-



Panasonic ET 300 iris imager.

cedures used in a certification program for cameras manufactured by licensees of Iridian Technologies.

Iris-imaging technology is still comparatively new and therefore hasn't been in common use for an extended period of time. But reputable firms and individuals have made extensive

studies of the actual and predicted medium- and long-term effects, and every study has shown conclusively that the equipment meets every safety standard. In light of the data that are currently available, ALPA's National Security Committee is confident that iris imaging is safe for use by pilots.—*First Officer Craig Hall (Air Canada Jazz), ALPA National Security Committee Director (Canada)*

## Is Direct Best?

If I had a nickel for every time I've heard “How about asking for direct?” I wouldn't be worrying about my retirement. The same could be said for the words “Why did the previous controller clear me ‘direct XYZ and fly best speed,’ but the next controller told me, ‘Slow to 250 and prepare to hold?’”

Ongoing collaborative efforts of the FAA and the airline community are trying to bring some order to air traffic management, and they are affecting how we fly.

Airline managements have been pointing out for years that any time a pilot asks for direct, he or she needs to know what effect the winds will have on going direct. We need to ask ourselves if direct is helping or hurting. Now the discussion is turning to, will going direct have more

trol Command Center (SATCCC) in Herndon, Va., is tasked with making these high-level decisions.

The SATCCC holds regularly scheduled telephone conferences (telcons) with various airspace users' representatives. During telcons, the users and the FAA reach agreement on how air traffic should flow, which flights will be canceled if necessary, what kind of ATC sector workloads are expected, which airports will have to use ground delay programs and for how long, and more. This process, collaborative decision-making (CDM), plays an increasingly important role in the FAA's plan to deal with increasing air traffic congestion.

### Using the playbook

Think back to the last time you flew from, say, Tampa to Washington, D.C. Just before takeoff, ATC gave you a new clearance via ATL. Your first thought was, “Hey, I don't fly for Delta. Why are they sending me over Atlanta? These guys are clueless.”

Well, actually, they *aren't* clueless. They are using the FAA playbook, a predetermined set of routes that the FAA and the airlines have agreed upon.

When air traffic controllers know they are going to have to deal with enroute convective weather during a certain time period, they start advance planning by redirecting affected aircraft onto new routes. Controllers can't just start sending aircraft around the weather. Adjacent ATC sectors can't handle sudden surges in traffic. The sector loads must be planned in advance to ensure manageable controller workloads and acceptable safety.

Enter the playbook.

Obviously, you won't get a direct clearance right away,

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effect than just changing flying time or fuel burn?

Going direct may have unintended effects on traffic flow later in the flight, which in turn can overload ATC sectors and result in significant delays. In other words, am I just hurrying to the holding pattern?

Every pilot is familiar with delays into and out of Chicago O'Hare. Airspace congestion is a big factor in those delays—not just arrival and departure airspace, but the enroute airspace that funnels aircraft into and out of ORD and handles flights for many other major U.S. airports.

The FAA has known for a while that part of the efficiency our industry needs can be achieved by effective high-level decision-making. The FAA Strategic Air Traffic Con-



## Building the Profession from Within

► The annual ALPA Professional Standards Conference, held May 16–18, in St. Paul, Minn., emphasized the importance to all airline pilots of maintaining the highest level of professional conduct in providing safe transportation to the traveling public.

“The Conference provides an invaluable opportunity for meeting and interacting with others who work on these issues and to discuss those issues and problems of mutual concern,” says Capt. John Rosenberg (Northwest), chairman of the Professional Standards Committee.

This year’s event drew more than 140 attendees from 20 ALPA pilot groups as well as representatives of government and airline industry organizations who were looking to help build their profession from within.

Capt. Bob Lynch (United, Ret.) presented the basics of providing professional standards support, covering the scope and responsibilities of a ProStans Committee, and outlined how they were to be accomplished. He emphasized a confidential peer discussion to address professional conduct and crewmember interaction. He also emphasized that Professional Standards is an ALPA committee for crewmembers and not an arm of management; it must never be perceived as such.

Elizabeth Field, a Northwest flight attendant, led a flight attendant workshop.

Capt. Michael Sigman (American) led a discussion of the *Professional Standards Policy Manual* and how to apply it in everyday Professional Standards activities.

Suzanne Kalfus, senior attorney in ALPA’s Legal Department, discussed the necessity for confidentiality in Committee activities and how to ensure it. She also discussed prohibited discrimination in the workplace, including sexual harassment.

Dr. Donald Hudson, ALPA’s aeromedical advisor, related his office’s function and assistance that can be provided. He also described their caseload and the medical problems occurring among airline pilots. Dr. Dan Zenga led a discussion of dealing with change, especially when such change is out of an individual’s control, as well as recognizing and dealing with discouragement through positive encouragement. He also discussed the need for and provision of conflict resolution.

The second day started with a lively discussion, led by Tom Haueter and Dr. Evan Bryne of the NTSB, on maintaining professional conduct among today’s airline pilots amid forces that may lead to erosion of such conduct.

Brian Murray of Humanitas Employee Assistance Programs, Inc., helped the attendees develop good listening skills. He has been providing ALPA Pilot Assistance Committee training for many years and shared techniques and skills used in that program.

The Conference also had reenactments of professional standards cases and a roundtable discussion of general professional standards issues for individuals and committees. —*Bill Edmunds, Senior Human Performance Specialist, ALPA Engineering and Air Safety Department*

but a little later in the flight, asking ATC for a more direct routing isn’t out of the question. In summary, if you’re on an ATC-directed reroute, asking for more direct is appropriate; if you’re on the company-requested routing, consider staying on that routing.

This information is disseminated to the users—at least, some of them. Neither you nor the air traffic controller working your particular flight may have the “big picture.”

The users are the airlines, represented by their dispatchers. Often, dispatchers are able to see what is going on and what game plan from the FAA playbook is in effect.

Unfortunately, pilots usually don’t know this information, and simply are trying to do their best to make up time and cut any route corners they can. Most pilots will try to make up some of a 20-minute ground delay to minimize the ripple effect throughout the airline’s operations.

Controllers also play an unwitting part in this situation by giving pilots what they ask for, if possible. ATC shouldn’t give us direct if that will create a problem later in the flight. Unfortunately, the controller may not know it will create a problem, and so together we pilots and controllers manage to mess up the very solution to the problem that the 20-minute ground delay was trying to address—air traffic congestion at or near your destination.

What’s the solution?

Flooding the cockpit with tons of information is certainly not the answer. I think most pilots would agree that we want to know only just what we need to know. We probably need to know if cutting corners on our route and going direct will have an adverse effect later in the flight.

If you are thinking about speeding up or cutting corners, ask your dispatcher to see if he or she agrees. Because CDM includes airlines, our dispatchers should be able to give us the information we need to make the right decision.

The FAA recently took steps to get the information to controllers so they can let you know why you’re not on the most efficient routing. However, the controller might not know, or might not have the time to tell you, even if he or she does know. Again, dispatch is your best source. If your dispatcher doesn’t know, he or she can find out through the ATC liaison.

We pilots have to accept that we only have a small piece of the big picture, and we have to trust that controllers know what they are doing. We also have to trust that the FAA is working diligently to improve communications, allowing controllers to better manage our trajectories and our desire to be efficient. —*Capt. Larry Newman (Delta), Chairman, ALPA Air Traffic Services Group*