Committee Corner

News from ALPA's Committees

ALPA Efforts Boost Runway Safety

Several of ALPA's longstanding and ongoing efforts to reduce the rate and severity of runway incursions and excursions have borne fruit recently.

Here's a status report on a few:

DFW turns runway status lights on again

On June 17, the FAA resumed the operational evaluation of a project aimed at reducing the frequency and severity of runway incursions at Dallas / Fort Worth International Airport (DFW) through use of a new, fully automatic, surveillance-driven lighting system on certain taxiway entrances to Runway 18L / 36R.

ALPA pilot safety representatives have been actively involved in the project, which was operational from February through May. The Association's Airport Ground Environment (AGE) Group enthusiastically supports the concept and encourages all pilots operating at DFW to provide feedback via (1) the paper forms provided for that purpose at DFW, or (2) a link from the ALPA website, www.alpa.org, or (3) at www.RWSL.net.

The Jeppesen insert pages 60-8 and 60-8A are still current. The FAA issued a NOTAM to confirm that the program has been resumed. The ATIS message will reflect current RWSL status.

ALPA'S AGE Group reminds all pilots operating at DFW:

1. Red means stop. Don't cross illuminated red lights.
2. When cleared to enter or cross a runway, if the lights are red, contact and advise ATC immediately.
3. Leave the transponder on in the aircraft movement area so that the ASDE-X airport surveillance radar can detect your aircraft and its position.
4. Maintain a high state of positional and traffic awareness, especially while entering runways, whether the RWSL system is operating or not.
5. If cleared to taxi on Runway 18L / 36R, maintain a normal taxi speed unless ATC otherwise directs. High-speed taxiing—i.e., taxiing faster than 30 knots—will make the RWSL lights illuminate.
6. Make sure that you still have Jeppesen insert pages 60-8 and 60-8A, or get them, and study them thoroughly.

Wiring has already been installed at San Diego International Airport (SAN) in California for a follow-up test of the RWSL system to be conducted at a later date not yet determined. The purpose of the SAN test will be to evaluate the performance of the system at an airport equipped with the older, less capable ASDE-3 airport surveillance radar.

Upgraded standards for taxiway markings

On April 29, the FAA issued Advisory Circular 150 / 5340-1J (Standards for Airport Markings). ALPA played a direct role in events that led to development of this latest revision of the AC, which has a direct bearing on runway safety. The revised AC includes needed improvements in national standards for taxiway centerline and holding position markings.

These enhancements were designed by the FAA and

JAN W. STEENBLIK

In late May, several of the people involved in ensuring the success of the DFW runway status light operational evaluation met at DFW to review the RWSL program. Left to right, Bill Phaneuf, ALPA senior staff engineer; Capt. Jack Eppard (American Eagle), ALPA Southwest Regional Safety Chairman and ALPA Airport Liaison Representative to DFW; James Eggert, Air Traffic Surveillance Group, MIT Lincoln Laboratory; Maria Picardi Kuffner, Human Factors specialist, ATC Systems, MIT Lincoln Laboratory; Vincent Chu, RWSL Program lead, FAA; Ron Nichol, RWSL coordinator, DFW Tower; Capt. Mitchell Serber (Comair), chairman, ALPA Airport Ground Environment Group; and Peter Hwoschinsky, Operations and Human Performance lead, FAA.

Airport Ground Environment Group

the MITRE Corporation to better define the location of holding position markings for flight crews. These markings, tested at Theodore Francis Green State Airport (PVD) in Providence, R.I., included (1) the enhanced taxiway centerline, (2) extension of existing holding position markings onto taxiway shoulders, (3) changing the color of the dashed lines from yellow to white on the holding position markings (which is not adopted at this time), and (4) enhanced use of holding position signs painted on taxiways and aprons.

The FAA is adopting the enhanced taxiway centerline as the standard for airports having commercial service and at least 1.5 million passenger enplanements in a calendar year. The enhanced taxiway centerline will be the only acceptable means of complying with FAR Part 139 for these airports effective June 30, 2008.

Similarly, the FAA is adopting extension of the runway holding position markings onto the paved shoulder as the only acceptable means of complying with FAR Part 139 for airports regularly served by aircraft in Aircraft Design Groups 5 and 6, also effective June 30, 2008. The standards for enhanced taxiway centerlines and extension of the runway holding position markings are optional for all other airports.

The FAA *recommends* the guidelines and standards contained in the AC for marking airport runways, taxiways, and aprons. These standards are the *only* method of complying with the marking of runways and taxiways at airports certificated under FAR Part 139. These standards are also *mandatory* for airport projects receiving federal funds under the Airport Grant Assistance program or funds received from the Passenger Facility Charge program. These standards are to be used on all new projects that are under development and are to be implemented at all Part 139 certificated airports no later than April 29, 2006.

In a July 2004 letter to the FAA, Capt. Robert Perkins (Air Canada Jazz), vice-chairman, and at the time, acting chairman, of ALPA's Airport Ground Environment Group, declared that, based on the demonstration of redesigned surface markings at PVD, ALPA offered "the strongest support for the implementation of its standards. The markings demonstration," he noted, "effectively presented the consensus opinions of a cross-section of the aviation industry.

"ALPA staff and pilot representatives participated in each of the meetings, workshops, and simulator demonstrations to develop the enhanced marking standards," Capt. Perkins continued. "When positive results were confirmed from the simulator tests, and demonstration at PVD was approved, we advertised the demonstration extensively to ensure survey participation by numerous ALPA pilots."

Surface markings, Capt. Perkins pointed out, may have contributed to the fatal 1990 crash of two airliners on a fog-shrouded Detroit runway. "During 1999, a similar incident during foggy conditions at PVD was further confirmation for us," he emphasized. "A potential collision was avoided only because a departing crew refused a takeoff clearance after they recognized that an arriving crew had become lost while searching for the terminal ramp in the fog.

"Considering those factors, and compelling experience gained through many runway safety studies at airports throughout the United States, ALPA believes that the recommendations of [the draft AC] should become the industry standard."

Regarding the enhanced taxiway centerline markings, Capt. Perkins pointed out, "Numerous reports from ALPA members have reinforced the fact that the use of black borders to outline runway and taxiway holding position markings has dramatically enhanced the visual holding message. Similar enhancement of centerline markings leading up to enhanced holding markings can only increase awareness of the message."

As for enhanced runway holding position markings on taxiways, he added, "Dramatic use of colors with the standard dashed and solid line symbols, and the increased dimension of the holding position line, effectively demonstrate the criticality of the message."

On that score, "Runway incursions remain one of the critical [types of] operational errors that must be eliminated," Capt. Perkins argued. He added, "Under conditions of reduced visibility, surface markings may even be the last location confirmation visible to the pilot….The changes offered in this revision could be a major contribution toward that goal if…this revision to the AC [becomes] the industry standard."

EMAS ("crushable concrete") for RSAs

ALPA has worked for decades to raise standards for runway safety areas and to reduce the risk of landing undershoots and takeoff or landing overruns. As ALPA told the NTSB in 1990, "with proper runway safety areas, many aircraft incidents can be prevented from becoming aircraft accidents."

The Association's interest in, and support of, the concept of "soft-ground arrestors" goes back to at least 1991. That summer, ALPA safety representatives observed a full-scale test of a foam arrestor bed at the FAA Technical Center in Atlantic City, N.J., and provided line pilot input about safety concerns that such a system would need to meet.

Today, a second-generation version of the same idea—the Engineered Material Arresting System (EMAS)—is installed at 17 runway ends at 14 airports throughout the United States. EMAS consists of an array of crushable concrete blocks placed in runway safety areas (RSAs).

Engineered Arresting Systems Corporation (ESCO), the company that makes EMAS and has been in the arresting gear business for more than 50 years, characterizes EMAS as "a safe and cost-effective option for decelerating large airplanes within a confined space." ALPA's Airport Ground Environment Group believes that the EMAS system is an excellent example of intelligent engineering applied to this all-too-common airport deficiency.

Consider the EMAS "catch" at John F. Kennedy International Airport (JFK) in New York in January 2005: EMAS prevented a Polar Air Cargo B-747 freighter, weighing 600,000 pounds and moving at 70 knots, from sliding off the end of Runway 22R and into Thurston Basin, which lies just 500 feet beyond the end of the runway.

ESCO Director of Project Engineering Dan Edwards, a furloughed American Airlines pilot, points out, "This safety product doesn't require a radio call to activate, you don't need to demonstrate your use of it in a checkride, and you don't even need to memorize anything. All you have to do is know where it is and be comfortable with the concept of stopping a large airplane with concrete—safely. I flew for American for more than three years in New York and didn't even know one was installed at JFK.

"Pilots with a military background are probably more familiar with ESCO's mechanical arresting systems like the BAK-9, BAK-12, and BAK-14," says Edwards. "ESCO began developing EMAS more than 10 years ago in con-

ESCO/EMAS

The "crushable concrete" beyond Runway 1 in Greenville, S.C., could prevent a nasty plunge during an overrun.

EMAS Installation List (as of July 1)

Number of Installations	Airport	Location	Departure End of Runway(s)	Date of Installation
1	JFK International	Jamaica, N.Y.	4R	1996
1	Minneapolis / St.Paul	Minneapolis, Minn.	12R	1999
2	Little Rock	Little Rock, Ark.	4R / 22R	2000 / 2003
1	Rochester International	Rochester, N.Y.	28	2001
1	Burbank	Burbank, Calif.	8	2002
1	Baton Rouge Metropolitan	Baton Rouge, La.	31	2002
2	Greater Binghamton	Binghamton, N.Y.	16 / 34	2002
1	Greenville Downtown	Greenville, S.C.	1	2003
1	Barnstable Municipal	Hyannis, Mass.	6	2003
1	Roanoke Regional	Roanoke, Va.	15	2004
2	Ft. Lauderdale Int'l	Ft. Lauderdale, Fla.	27R / 9L	2004
1	Dutchess County	Poughkeepsie, N.Y.	6	2004
1	La Guardia	New York, N.Y.	22	2005
1	Boston Logan	Boston, Mass.	27	2005

17 = Total Systems Installed

cert with the FAA. The only thing EMAS has in common with its mechanical cousins is that both systems are designed to decelerate airplanes in a finite space safely without exceeding any aircraft structural limits."

Designs for a specific runway are driven by many airplane variables such as airplane type, operating weight, center of gravity, plus the physical parameters of the RSA. EMAS is typically installed at an airport with a non-standard RSA (i.e., less than 1,000 feet long).

"ESCO is working with the FAA to develop a standard set of symbols to be used on a Jeppesen 10-7 or 10-8 airport information chart," Edwards reports. "Once they are aware of the location of the arrester bed, pilots can begin to think about what to expect during an overrun."

EMAS is designed to decelerate the airplane in all weather conditions. The landing gear sinks gradually into crushable concrete blocks, regardless of what type of braking action exists at the time. The further the airplane travels into the safety area, the deeper the concrete and the greater the deceleration.

"Each system is designed for the particular airport's fleet mix, so some beds are deeper than others," Edwards explains. "The typical bed ranges from 6 inches in depth in the front (nearest the runway) to 20 inches in the back. Each side and the back have two sets of steps built into the bed to permit responding airport rescue vehicles to drive up onto the EMAS and for deplaning passengers and crew to step down. The surface of the bed will support foot traffic, but any material disturbed and exposed during the arrestment will crush underfoot."

The standard procedures for operating on a runway with EMAS installed don't differ much from those for operating on a runway without the arrestor bed at the end.

"Regardless of the runway exit speed," Edwards advises, "pilots must follow their normal abort / max-effort stop procedures and try to track as straight as possible through the EMAS. Trying to steer so as to avoid the EMAS could degrade the quality of your deceleration and ultimately defeat the purpose of this critical piece of safety equipment.—*Jan W. Steenblik, Technical Editor*

ALPA Alerts Pilots on ATL RNAV SID Procedures and FMS

On June 8, ALPA issued ALPA Operations Bulletin 2005-06, "Revised Atlanta RNAV SID Procedures and Loading Correct Runway in FMS," part of a comprehensive plan to address an operational challenge relating to successful implementation of RNAV SIDs at Atlanta Hartsfield-Jackson International Airport (ATL).

Based on recent lateral flight path deviations resulting from incorrect loading of runways in flight management systems, the FAA has modified ATL RNAV departure procedures in the interest of safety:

• ATL Tower will now assign an initial radar vector with the takeoff clearance.
• Pilots should fly assigned radar vectors until cleared by ATL Departure Control to join the filed RNAV SID. Expect Departure Control to issue clearances direct to an RNAV waypoint, and then via the RNAV SID as filed in the flight plan. The requirement to contact Ground Metering before taxiing has been discontinued.
• The ATL ATIS has been updated with the following information: "ATL RNAV departures, expect vectors to join assigned RNAV route (SID)."

The RNAV procedures at ATL have proven successful in reducing radio communications as well as increasing efficiency and safety. The ongoing success of the RNAV program depends on pilots closely adhering to and complying with all operational aspects of the RNAV STARs and SIDs.

ALPA recommends that pilots
• fly the initial radar vector that is assigned by ATL Tower until cleared direct to an RNAV waypoint, and
• include the following items in takeoff briefings at ATL:
(1) runway (in addition to departure procedure) correct and active in the FMS, and
(2) first fix verified in FMS navigation mode.

The ALPA ops bulletin emphasizes that ensuring the correct runway is coded in the FMS before takeoff is relevant to all departures retrieved from the database in the national airspace system.

ALPA Air Traffic Services And Aircraft Design & Operations Groups

ALPA urges pilots operating at ATL to view the PowerPoint presentation available through the Association's website, www.alpa.org. Go to the ALPA Members Only Intranet section, locate Committees on the top menu bar, and select Air Safety Website. Scroll down and select Air Traffic Services Group (ATS); scroll down again and select Charting and Instrument Procedures (CHIPs), where a link called "Loading Correct Runway in FMS for RNAV SIDS-ATL" may be found.

Pilots who have questions or comments should contact the ALPA Engineering and Air Safety Department at 1-800-424-2470.