

# Flying on Borr



For nearly 76 years, ALPA has worked tirelessly to make its motto, "Schedule with Safety," a reality. As a result of the efforts of countless volunteer members and their professional staff, ALPA has played a central role in making air travel in the United States and Canada the safest mode of transport in human history.

Despite this success, the work to ensure air transport safety is never done. New technologies, the shifting economic environment, increasing demands on human performance, and numerous other factors constantly combine to cause air travel risks. ALPA remains ever vigilant to these risks. Even as airlines slashed their safety and operational staffs, ALPA maintained its status as the largest nongovernmental aviation safety organization in the world. Even as the FAA lost funding for oversight and ATC staffing, ALPA pilots stepped forward to create new safety programs, filling the void.

The hard truth remains that the U.S. air transportation system is flying on borrowed time. The aviation industry and the U.S. government have not yet addressed several significant risks in the air transportation system. ALPA has compiled a high-priority list of these issues, detailed below, which it intends to communicate clearly to Congress, the U.S. federal bureaucracy, the airlines, and—most importantly—the traveling public.

## Pilot fatigue

Fatigue is a present and growing problem within the airline industry. ALPA's own internal research indicates that fatigue has reached an alarming level among airline pilots. ALPA recommended that Congress strongly encourage the FAA to modernize flight-time/duty-time regulations based on rational, scientifically based, working-hour limits for pilots engaged in all airline operations.

The present FAA flight-time, duty-time, and rest rules for



airline pilots are a dated patchwork of regulations developed over the past 60 years. These rules do not adequately incorporate fatigue research, circadian rhythms, and realistic sleep and the rest

requirements that the NTSB has recommended.

For example, domestic airline pilots (those who operate basically within the continental United States) currently abide by a weekly flight-time maximum of 30 hours. This weekly flight-time limitation for pilots does not include *any* of the required time spent performing ground-based duties. In reality, airline pilots often find themselves working shifts approaching 15 hours to log 7 to 8 hours, or less, of daily flight time.

Another vexing issue for ALPA concerning flight- and duty-time limits and minimum-rest requirements is the continuing loophole in the regulations that allow FAR Part 121 operations to use FAR Part 135 flight-time/duty-time rules for certain turboprops.

In the mid-1990s, the FAA agreed to ALPA's concept of One Level of Safety and eventually ruled that all scheduled passenger operations with 10 or more passenger seats transition to FAR Part 121 by March 20, 1997. The flight-time/duty-time regulations, however, were not part of this package, and FAR Part 121 reforms proposed in 1995 were never promulgated. The airlines were permitted to continue to operate certain turboprops under the FAR Part 135 flight-time/duty-time rules, pending the anticipated reform, which in fact has never taken place. Thus, some airliners continue to fly under the loophole of those less-restrictive rules.

Because the FAA's rules are inadequate and antiquated, the airline industry has frequently buttressed the rules in its collective bargaining agreements. However, such agreements affect only a part of the U.S. airline industry and do not result in uniform flight- and duty-time limits and rest requirements in all operations. This puts pressure on operators to reduce flight-crew rest in an insatiable drive to increase "productivity" and reduce workforce costs. This pressure has only intensified during the recent economic downturn of the airline industry.

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ALPA calls for updating airline flight/duty/rest practices based upon scientifically demonstrated human performance limitations, rather than on economic misperceptions. Moreover, ALPA has petitioned the FAA for changes to the flight-limitation rules several times and continues to press for modernization of the rules.

The core principles ALPA seeks to address pilot fatigue include the following:

- a minimum of 10 hours rest in every 24-hour period,
- a maximum scheduled duty period of 14 hours,
- established circadian rhythm disruption limits, and
- a flight-time limit of 8 hours between rest periods.

## Airport access

The U.S. Transportation Security Administration (TSA) requires airline pilots and their luggage and equipment to be screened and searched for dangerous, prohibited items in the

same manner as passengers, despite the fact that pilots have life-or-death control over their passengers, fellow crewmembers, and the airliners they fly. The result: the TSA screens highly vetted and prescreened pilots more than 40,000 times per day.

These efforts stretch the already overwhelmed TSA resources. Meanwhile, the agency recently announced it will increase random

passenger screenings within airport terminals and also search airplanes parked at terminal gates without increasing the size of the screening staff.

ALPA has tried to convince the TSA to focus its efforts on a risk-based system, which would leverage the trustworthiness of flight crews by substituting the current physical search of airline pilots at the screening checkpoint with a pilot identity and employment verification methodology using current credentials. The TSA rejected this request.

ALPA is now researching the use of a biometric-based technology, built on the Cockpit Access Security System (CASS), to use as a screening protocol. Using CASS at an airport alternate screening checkpoint, uniformed pilots

could quickly be identified, cleared, and allowed to proceed to their aircraft.

The TSA should remove pilots from passenger screening lines and employ alternate screening protocols because doing so would do the following:

- **Save the TSA time, money, and resources**—ALPA estimated in 2005 that the TSA was spending more than \$100 million annually to screen pilots. The TSA could apply these resources to better purposes, such as purchasing technology capable of detecting explosives.
- **Improve airline security**—Transportation security officers would have more time to scrutinize and process passengers to detect the presence of ill intents, dangerous weapons, and improvised explosive devices.
- **Benefit passengers**—Crowded security screening lines would shrink by removing pilots from those queues. Processing times would shorten, and passenger convenience would increase.
- **Benefit pilots**—Pilots have been trained to promote airline security and should be treated as part of the security solution, not the threat. All airline pilots must pass an FBI criminal history records check, background investigation, and psychological examination.

## NAS modernization

ALPA is proud to be a full partner with the FAA and others in the aviation industry.

Together, the industry is working to design and implement air traffic manage-

ment procedures and systems that will carry America forward. ALPA's president, Capt. John Prater, serves on the Institute Management Council of the Next Generation Air Transportation System (NGATS).

The NGATS Institute, established in 2005, provides a forum for a collaborative relationship between the government and the private sector. The Institute's goal is to serve as a catalyst for fostering a shared vision among government, industry,



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and academia to create a roadmap for the 2025 National Airspace System (NAS).

To keep the U.S. NAS functional, Congress must commit to long-term funding for improvements *now*. Modernization efforts must include upgrading computer and satellite systems to improve operational safety. More-effective tools must also be developed to increase capacity, resulting in lower fuel usage, reduced taxi time, more-efficient gate management, and more-efficient departures.

ALPA's six recommendations for system modernization include the following:

- **Required Navigation Performance (RNP)** systems based on GPS satellites could improve NAS efficiency and capacity by allowing instrument procedures that minimize noise, offer greater access to all runways in all weather conditions, and provide more safety than ever before. In April 2002, Administrator Blakey announced that the FAA would move away from a ground-based navigation system to an RNP system using GPS satellites.

- **Automatic Dependent Surveillance Broadcast (ADS-B)** upgrades could result in lower fuel usage, reduced taxi time, more-efficient gate management, and more-efficient departures. A year ago, Administrator Blakey announced that the FAA had chosen ADS-B to be the surveillance system of the future. With ADS-B, each aircraft broadcasts a position report because it does not rely on a ground-based surveillance system. ADS-B usage would increase surface situational awareness of both pilots and controllers. Flight data, such as departure time of a flight from the gate and the estimated time when a flight will touch down, can be used collaboratively by the airport, air traffic control, and airline managers to more effectively manage surface traffic.

- **New runways and operational safety measures** to create more-effective surface management could result in lower fuel usage, reduced taxi time, more-efficient gate management, and more-efficient departures. According to Administrator Blakey, the new runways envisioned by the current FAA Operational Evolution Partnership represent a huge potential increase in NAS operations. Each new runway takes, on average, more than 10 years to design and build and costs billions of dollars. ALPA stresses that it must be done intelligently. Therefore, accurate and effective planning proves essential to the airline industry's ability to safely accommodate all NAS operations as the need to put airplanes closer together continues to grow.

- **Wake turbulence research** is also critical for employing new equipment and procedures that allow the airline industry to position aircraft closer together safely. Positioning aircraft closer together introduces a higher likelihood of encounters with another aircraft's wake. As advanced as aviation is in many areas, currently very little hard operational data exist

about how wakes behave. The aviation industry knows that wakes can be dangerous, even deadly under certain circumstances, but we really do not know what those circumstances are—at least not with enough certainty to bet the lives of 200–300 people. Some research is being conducted, but these efforts must continue for us to safely operate in the NGATS environment. (See “The Often-Unseen Threat,” page 24.)

- **Enroute Automation Modernization (ERAM)** computer network upgrades are the heart of the computer networking system that would allow users to see what will be happening at each point in space over the next several hours, not just where each aircraft is in real time and what its pilots need to do to operate efficiently.

- **Risk assessment of unmanned aerial systems (UAS)** is needed to prove the equivalent level of safety (ELS) for operations in civil airspace. Thus far, the UAS accident record and datalink dependability do not support the claim that these aerial vehicles operate “just like any other airplane, but without a pilot on board.” Before the U.S. government allows these aircraft unrestricted access to the NAS, including permission to operate above or below the altitudes usually designated for airline operations, governing bodies must take the appropriate steps and perform detailed risk analyses.

## Runway safety

ALPA has three major areas of concern with respect to runway safety that merit congressional attention: (1) runway safety areas, (2) runway incursions, and (3) aircraft stopping performance.

The fatal overrun accident at Midway Airport in December 2005 highlighted the airline industry's need to improve runway safety areas at all airline airports. According to recent FAA statistics, 45 percent of the certificated airport runways in the United States need to be improved to meet the runway



safety area standards of the International Civil Aviation Organization. To address hazards that aircraft overruns and undershoots pose, airports can enhance runway safety areas, shorten available runway length, and install engineered arrestor beds at the ends of runways.

Runway incursions, the second concern, can be addressed through airport visual aids; aircraft, airport and ATC technology; training; and changes to procedures. To prevent further catastrophic events, ALPA calls upon the FAA and the aviation industry to make good on their earlier commitments to institute the recommended mitigations of the U.S. Commercial Aviation Safety Team (CAST).

Aircraft stopping performance can be improved through better runway friction measurement practices and timely, thorough contaminant removal. Runways contaminated with snow, ice, or other foreign materials continue to pose risks. The FAA does not require airplane manufacturers to conduct flight tests on any runway conditions other than dry or to account for contaminated runway effects on aircraft braking. Congress should require and fund research to develop means to measure runway friction and require manufacturers to relate these values to aircraft performance.

## Cargo One Level of Safety and Security

ALPA has advocated “One Level of Safety” in the airline industry since its founding in 1931. Nevertheless, several discrepancies still exist between cargo and passenger airline regulations that Congress and the FAA must address to bridge the safety gap. Cargo airliners must be operated under the same safety and security standards, regardless of payload. For example, requirements for flightdeck doors and airport firefighting, to name just two issues, simply do not provide the same safety and security for cargo airliners as for their passenger counterparts; legislation can fix that. ALPA urges the FAA to support the Association’s cargo safety and security recommendations, detailed below.

After the attacks on the United States on Sept. 11, 2001, the Department of Transportation’s Rapid Response Team recommended that reinforced flightdeck doors, among other measures, should be part of “a retrofit of the entire U.S. fleet of air[liners].” ALPA strongly believes that the intent of this recommendation must be applied to *all* U.S. airline cockpits, including those of cargo airliners. For more information, see the “Secondary Barriers and Procedures” section.

ALPA opposes any increase in the current payload weight limit for cargo airplanes operated under FAR Part 135. An increase in the current useful payload would result in hundreds, possibly thousands, of turboprop and jet airplanes leaving Part 121 requirements behind and being operated under a lesser safety standard as Part 135 airlines.



Current rules allow cargo airliners to operate with no requirement for airport firefighting or other emergency response. Under current law, an extensive set of airport-related conditions, capabilities, facilities, and equipment must be provided for the designated passenger airliner to operate into that airport, including such items as aircraft rescue and firefighting (ARFF). ALPA calls on Congress to require that the FAA broaden the applicability of pertinent regulations to include certification of airports that serve on-demand, all-cargo airlines.

ALPA believes that the current level of transportation regulations for electric batteries of all types is inadequate and that the degree of risk and incident history justifies more stringent control of batteries in air transportation. It is time to end the Special Provision in the Hazardous Materials Regulations (HMR) exempting the transport of batteries as cargo, especially in large quantities. ALPA strongly believes that cargo shipments of batteries should be fully incorporated in the HMR—including packaging requirements, acceptance checks, package testing, labeling, quantity limitations, and pilot notification—because damage to a battery may be all that is necessary to start a fire that may take place hours after the damage has occurred. Accordingly, the Association continues to urge the DOT’s Pipeline and Hazardous Materials Safety Administration to introduce rulemaking to end use of a Special Provision for transport of battery cargo shipments and respectfully solicits the support of Congress.

## Secondary barriers and procedures

ALPA is calling for installation of secondary barriers on passenger and all-cargo airliners. These inexpensive barriers (estimated cost: less than \$10,000 per airplane) would provide full-time protection to the flight deck and thwart the ability of an attacker to enter and hijack the airplane when the flightdeck door is opened during flight. An open cockpit door is an attractive opportunity for an attacker. The Oct. 3, 2006, hijacking of Turkish Airlines Flight 1476, a Boeing 737



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with 113 passengers and crew members aboard, highlighted this issue. The flight from Tirana, Albania, to Istanbul, Turkey, was commandeered in Greek airspace and later forced to land at Brindisi, Italy, by Italian F-16 interceptors.

The captain's after-action report indicated that *"while the chief stewardess entered the cockpit to ask if we needed anything, the terrorist entered by force. I tried to push him out, but he was a big man, and I failed to stop him."* Although this incident was resolved without fatalities, the assault and cockpit seizure provide clear evidence that a fortified flightdeck door does not guarantee deterrence and full protection. This hijacking incident provides a successful model for other attackers to follow.

As a part of the Aviation Transportation Security Act of 2001, the U.S. Congress mandated installation of a hardened flightdeck door, or "fortress door" in place of the original weak flightdeck door. The fortress door is a valuable security enhancement and virtually impossible to breach when closed. However, the fortified flightdeck door must be opened during extended flights for a variety of reasons, including crewmember coordination, meal service, and pilot physiological needs. When the door is opened, the flight deck becomes exposed to attack from the cabin. Some airlines, most notably Continental and United, developed sophisticated flightdeck access procedures, but many airlines do not have effective procedures to ensure secure door transitions.

In the unique all-cargo environment, not all airplanes are equipped with cockpit doors, nor are they required. Additionally, cargo flightcrew members are not supported by cabin attendants and are without protection when opening the cockpit door, if one has been installed. The ease of stowing away is a major flaw in aviation security that terrorists or other persons with malicious intent could readily exploit.

A secondary barrier installed aboard an all-cargo airplane would deter and delay an attack on the flight deck and provide crucial warning to the flight crew that an attempted breach was in progress.

No flight can be assured of having the protection of an armed law enforcement officer aboard to defend against a hijacking, but an inexpensive secondary barrier, used with appropriate crew procedures, can greatly lessen the danger of an attacker's gaining control of the flight deck.

## Federal Flight Deck Officer program

On Sept. 25, 2001, just two weeks after 9/11, ALPA became the first major organization to call for a program that would train and arm airline pilots. ALPA's proposal, presented at congressional hearings, was built on four basic principles: the program should be voluntary, applicants would undergo the same screening and background checks as federal law enforcement officers, they would receive intensive training

at a federal training center, and successful candidates would be sworn in as federal law enforcement agents.

On Nov. 26, 2002, the U.S. president signed the Homeland Security Act, which included implementing provisions of the Federal Flight Deck Officer (FFDO) program. The program tracked exactly with the ALPA proposal. The pilots' first training class was completed in April 2003, and additional classes have graduated weekly since. Although cargo airline pilots originally had been excluded from the program, ALPA sought and achieved a legislative change that allows them to participate.

The training curriculum incorporates an intensive, week-long combination of instruction in legal issues, use-of-force policies, firearms proficiency, and defensive tactics. Because the FFDO's jurisdiction is limited to defense of the cockpit, FFDO instructors teach pilots that their firearms can be used only to defend against a direct attack.

The FFDO program has transitioned from an experimental program that armed pilots into a substantial, cost-effective security institution. Since April 2003, pilots have volunteered and been trained by the thousands to protect passenger and cargo airliners flying throughout the United States 24 hours a day. Certain issues limit security effectiveness and the ability of volunteer pilots to participate.

Four areas require specific attention:

- **Weapon carriage:** Current regulations require FFDO pilots, unlike other law enforcement officers, to frequently remove the holstered weapon from their uniform and secure it in an alternate container, increasing the risk of accidental discharge, loss, or theft. This is in part because of a poor interpretation of the Homeland Security Act of 2002. ALPA agrees with law enforcement and aviation security experts that FFDOs should not be separated from their weapons while in transit. ALPA considers it vital that FFDOs be further trained and authorized to carry their weapons on their person, including when seated in an airliner cabin while deadheading, commuting, or on official travel for FFDO training. Further, FFDOs should never be required to remove their weapon from their person while performing duties as an operating flightcrew member.

- **Training opportunities:** ALPA pilots attend a week of intensive FFDO training in Artesia, N.M., before returning to their cockpits. With the exception of the semiannual requirement to demonstrate their marksmanship, postgraduate training and mentoring opportunities for FFDOs are almost nonexistent, with most communications between the TSA and the FFDO pilot limited to scheduling issues. Because of the very limited training dates and training locations available, pilots must often travel hundreds, if not thousands, of miles to attend training events *at their own expense*. This lack of additional training, enrichment, and refresher opportunities for pilots is inappropriate. The government must address this issue.



- **Leave to attend training:** Despite the added security protection provided to airline employers by the presence of armed pilots, many airline managements refuse to support participation and do not grant their FFDO-qualified pilots unpaid leave, time off, or use of vacation to attend training. ALPA believes that airlines should be required to grant pilots leave to attend FFDO training, similar to the requirement placed upon employers of military reservists and national guardsmen to grant them leave to defend the nation. Although this leave is unpaid for the pilot volunteer, it would make attending training possible and scheduling more reliable.

- **Reimbursement of reasonable expenses:** ALPA calls on the TSA to reimburse FFDO participants for all reasonable expenses, such as travel, food, and lodging, associated with participation in the FFDO program. Many pilots incur frequent and significant personal expenses to attend qualification and recurrent training. The approximate average out-of-pocket expenses to attend training include initial training, \$500; recurrent training, \$800; and requalification, \$75.

FFDOs now provide the most frequent and consistent form of trained, onboard security protection on flights within the United States. The benefits derived by the nation and the airline industry are significant. Pilots should not have to fund national security out of their own pockets.

## Safety Management Systems (SMS)

ALPA is an active participant in developing and implementing Safety Management Systems (SMS) for U.S. and Canadian airlines, airports, and the FAA's Air Traffic Organization. ALPA is a strong SMS advocate, and Congress needs to monitor the FAA's progress in SMS implementation to ensure compliance with the ICAO standard's deadline of Jan. 1, 2009.

SMS is a proactive business approach to managing aviation operations with the goal of increasing safety and reducing risk in the NAS. It offers the promise of increased safety for the airline industry through the partnership of regulatory,

industry, and labor organizations by integrating safety through every level of the organization.

In the past, airlines regularly exceeded minimum statutory requirements for operations. Economic pressures and the realities of competition have caused numerous airlines to reduce flight crew training, maintenance standards, staffing, and operational margins to the regulatory minimum. ALPA asks that Congress provide regulatory oversight for SMS and strongly opposes any attempts to use SMS to replace a comprehensive regulatory framework.

The Aviation Safety Action Program (ASAP) is a critical element of SMS or any other aviation safety program. It allows frontline employees to report safety and operational issues directly, enabling airlines, employees, and the FAA to work together to find solutions to difficult problems. Pilots and the airlines they fly for reap the safety and economic benefits of ASAP. In the air traffic arena, however, that same culture does not exist, and the frontline controllers' advice and input is often not welcomed.

Air traffic controllers do not have a means to report safety or operational issues in the same cultural environment that many pilots enjoy. Even though the FAA encouraged and promoted ASAP for U.S. airlines, it did not extend this offer internally for the benefit of its own organization. Frontline employee participation in safety risk assessment processes, safety reporting systems, and safety assurance programs is critical to a successful SMS. ALPA asked Congress to pressure Administrator Blakey to make ASAP a reality for air traffic controllers, citing a tremendous safety and efficiency effect on America's entire air transportation system.

## Outsourced maintenance oversight

One way that many airlines have cut costs since 9/11 is by reducing the amount of maintenance that they perform themselves. When maintenance is outsourced, oversight becomes more complex and difficult.

A recent fatal airline accident investigated by the NTSB exposed this problem. An airline contracted its maintenance to a vendor that then subcontracted to a company that then used yet another company to actually perform the mechanical work. Ironically, the actual work took place at a maintenance facility about a day's drive from the FAA's headquarters. Organizationally, however, the work was so far removed from both the airline and the FAA that no one entity properly supervised it.

ALPA is concerned that increased organizational distance placed between the maintenance completed and the people ultimately responsible for its correct completion will result in a more complicated oversight process. Congress must ensure that the FAA fulfills its oversight role in the new environment of outsourced maintenance. 🌐