Testimony of the Air Line Pilots Association, International
Before the Aviation Subcommittee
Transportation and Infrastructure Committee
U.S. House of Representatives

Aviation and the Environment

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Washington, DC

Mr. Chairman, Ranking Member and members of the Committee, I am Captain Mary Ann Schaffer, chairperson of the Air Lines Pilots Association's Aviation Sustainability and Environment Task Force. It is a pleasure and an honor for me to be here today at this hearing to represent ALPA's President, Captain John Prater, and our 56,000 pilot members who fly for 43 airlines in the U.S. and Canada. We appreciate the Committee's interest in this subject and the opportunity to present out views on it today.

It may not be apparent why ALPA would have an interest in this subject, so I will explain. ALPA's motto, since its beginning almost 77 years ago, has been "Schedule with Safety." A former FAA Administrator and others have dubbed ALPA the "conscience of the airline industry" and in that role, we take very seriously the need to ensure that any new operational measures are fully understood and thoroughly considered before implementation. Pilots literally sit at the intersection of new technology, operational measures, air traffic control procedures, and varying aircraft capabilities. This gives us a unique vantage point to see and experience first hand what well-intended, but unrealistic operational procedures can do to safety margins.

Another principal reason for our interest in this subject is the need to ensure the ongoing viability, what we call the sustainability, of our airline industry. We recognize all too well that our employers are under tremendous financial stress due to the record high cost of fuel and pressures from environmental concerns to reduce fuel consumption and corresponding emissions. Pilots have a genuine ability to help their airlines burn less fuel, and thereby put less noise and tailpipe emissions into the environment. Pilots look for opportunities to reduce fuel burn and do so every day.

Pilots and the airline industry as a whole have already made great strides toward reducing total fuel burn, noise, and tailpipe emissions. We believe Congress should take this into account when it considers any legislation regarding greenhouse gas (GHG) emissions. I will discuss later the extraordinary investments that our employers have made to reduce consumption and pollution.

With oil selling at $118 per barrel, airlines are parking airplanes because they can no longer afford to fly them, name-brand legacy carriers are looking for mergers in order to survive, airlines are spending about 40% of their revenues on fuel, and airline pilots are

facing an uncertain future in an industry unstable because of this energy crisis.[1] Airlines and aviation face unique challenges. First are the long and expensive lead times for the research, development, design, and certification implementation for new technologies. Second is the lack of any economically viable alternative to fossil-based fuel. Compounding these issues is the lack of a comprehensive national energy policy that addresses the short and long term needs of our transportation systems.

ALPA's Work to Improve the Environment

As evidenced by the creation of our President's Task Force on Aviation Sustainability and Environment, ALPA takes environmental concerns very seriously. We are, and will continue to be, part of the solution as evidenced by the following activities:

- ALPA is participating in the work of Commercial Aviation Alternative Fuel Initiative (CAAFI), which involves the airlines, aircraft manufacturers, and the scientific community collaborating to find new and better sources of fuel for aviation.
- We are also a member of the Advisory Board for the Partnership for AiR Transportation Noise and Emissions Reduction (PARTNER) effort and the FAA's Joint Planning and Development Office (JPDO) Environmental Working Group.
- Our most recent success story: ALPA was a principal co-sponsor of a two-day conference for more than 200 government and industry participants in March, called *Aviation and the Environment: A Primer for North American Stakeholders*. The purpose of the forum was threefold:

    1. Put the environment debate into context and educate the members of the co-hosting associations on the basic facts.
    2. Examine some of the policy options, measures and decisions proposed to curtail and reduce overall noise and emissions.
    3. Provide a platform to communicate aviation's already impressive gains in the reduction of noise and emissions and highlight ongoing industry environmental initiatives.

Safety and Operations

Airline pilots can, and do, save fuel and emissions through operating techniques. Safety is our utmost concern, of course, but where safety is not impacted, airline pilots will reduce fuel usage through such measures as:

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[1] "Aviation and the Environment: A National Vision Statement, Framework for Goals and Recommended Actions," Report to the United States Congress, December 2004. Recommendation 2: Tools and Metrics states the tools should "account for airline economics and affordability in evaluating regulatory and research opportunities."

- Single-engine outbound taxi –Under certain conditions, it is not necessary that all aircraft engines be operated to taxi on the ramp or on taxiways. When conditions permit, only one engine may be started out of two or more available engines until reaching the end of the runway for takeoff.
- Engine shut-down during inbound taxi – Once the aircraft has departed the landing runway and is headed to the gate or parking stand, one or more operating engines may be shut down either in the taxiway environment or on the ramp.
- Technology enhanced departure procedures – New procedures are being developed with the aid of Area Navigation (RNAV) and Required Navigation Performance (RNP) technology which permit shortening the distance and time traveled during approach and departure.
- Optimal altitude – Each jet aircraft, based on weight and ambient conditions, has an optimum altitude where fuel burn is minimized. To the extent that conditions and circumstances permit, pilots may request that optimal altitude in order to conserve fuel, which reduces emissions.
- Optimal speed flight plans – Planning and operating a flight at an efficient speed can save fuel. Pilots can optimize fuel burn based on aircraft weight, winds, and atmospheric conditions.
- Continuous Descent Arrival (CDA)/Optimized Descent Procedure (OPD) – Normal approach and landing procedures require an aircraft to reduce power, descend to a new altitude, and then add considerable power to level off and fly straight and level – that process may be repeated several times during and approach and landing. A new approach procedure, the CDA, or what we refer to as an OPD, is being developed that permits pilots to reduce power on all engines and not use significant thrust until safety concerns dictate establishing a stabilized approach configuration just before landing. This procedure cannot work at all airports at all times due to operational constraints, but at those locations where it can be used, it can save substantial fuel on a single approach.
- Reduced Vertical Separation Minimum (RVSM) – Taking advantage of improved technology, appropriately equipped aircraft can now fly at 1,000 feet – compared with 2,000 feet previously – vertical separation at higher altitudes. This operational change added six additional useable altitudes increasing the opportunity for pilots to fly their aircraft at the optimal, most fuel efficient altitude, in addition to permitting much greater airspace utilization.

Aviation's Enviable Environmental Record

Aviation arguably has the most successful record of limiting its impact on the environment while increasing its productivity of any industrial sector. Airlines have greatly reduced carbon-based emissions through engine technology which reduces fuel burn and emission of undesirable gases and particulates. Compared to aircraft in use in 1972, the U.S. airline industry now carries six (6) times more payload using 60% less fuel and has reduced by 95% the number of people significantly impacted by aircraft

noise.[2] This outstanding record of environmental achievement has resulted almost entirely from the airlines continually demanding new aircraft from the manufacturers that burn less fuel, carry greater payloads, and create less noise. Boeing is preparing for the first flight of the B-787; due to its cutting edge technology, that aircraft is designed to use 20% less fuel – thereby create 20% less GHG emissions – than current aircraft of the same size. This aircraft is just one example of the kinds of investments that the airlines make in a very heavily capitalized industry; those investments should be taken into account by any legislation that deals with fuel conservation and GHG emissions.

Recommendations

As described, the airline industry has already made great progress toward reducing GHG emissions without the creation of a new commodity market that would funnel its assets to other industries and entities. That said, the industry does need your help to boost our great progress:

- Provide sufficient and timely funding to the FAA for necessary improvements in the U.S. National Aviation System (NAS). Funding the national airspace system modernization components needed to enhance aircraft efficiency, safety, and capacity will help in reducing delays, fuel consumption, and emissions. Implementation of the Next Generation Air Transportation System (NEXTGEN) could eliminate as much as 15% of today's delays, increase safety and capacity, and concurrently reduce emissions. Funding important studies like wake vortex investigations will also help. More information and understanding of wake vortex patterns around runways will allow spacing of traffic on the runway based on real hazards – a more accurate standard than mileage separation.
- Continue funding for important infrastructure improvements including runway and taxiway additions and improvements. Poor airport design, including those with intersecting runways, increases taxi time and increases fuel use. Adding high-speed taxi way exits from runways can reduce runway occupancy time thus increasing airport capacity. Additional runways, like those in progress at Seattle-Tacoma and Washington Dulles, reduce fuel wasted in holding patterns and long lines of aircraft waiting for take-off.
- Give greater support to research for alternative fuels which are renewable, pollute less or not at all, and are less expensive than today's fuels. Because of aircraft engine design and extreme atmospheric conditions at altitude, the airline industry relies entirely on petroleum-based fuels; it cannot currently substitute ethanol or other fuels as some industries are able to do.
- Avoid adding economic burdens, in the form of market-based measures, to an already crippled industry. Such measures as are currently imposed in Europe and proposed in the Lieberman-Warner bill are biased against the airline industry and

[2] "Aviation and the Environment: A National Vision Statement, Framework for Goals and Recommended Actions," Report to the United States Congress, December 2004; *see also*, "Aviation and the Environment: A Pilots' Perspective," British Air Line Pilots Association, March 2007.

do not provide sufficient re-investment of revenue for new aviation technologies and fuel.

- Work with ICAO to establish emissions standards and operating measures for uniform application across this global industry.

Conclusion

Aviation is a good news story; we safely move hundreds of millions of passengers around the world in comfort, at great speed, and with less impact on the environment than any other mode of transportation in history. However, aviation is a visible target and has drawn the attention of many groups around the world who condemn the industry for being a driver of projected climate change.

As pilots, we deal with facts, and the facts clearly show that while aviation is a contributor of greenhouse gas and other emissions, it plays only a small role in the overall issue. Indeed, we could ground the entire world's fleet, and not have a significant effect on the climate change issue. The industry is poised to make great strides in reducing emissions through technology and operating procedures. We believe that the best way to achieve those results is the same way that we have made such great advances thus far, namely, through industry's investments in increasingly higher technology.

Thank you again for the opportunity to testify today. We urge Congress' support of our ongoing and future efforts to reduce aviation's environmental impacts.