STATEMENT OF DR. JOHN L. MCLUCAS, ADMINISTRATOR OF THE FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION ON AIRCRAFT NOISE ABATEMENT, FEBRUARY 26, 1976.

Mr. Chairman and Members of the Subcommittee:

I welcome the opportunity to appear today to discuss some of the issues involved in aircraft noise abatement actions by the Federal Government. Earlier in these hearings, you have heard testimony from some of my FAA associates concerning airport noise policy and operational procedures for noise abatement. Therefore, I will not discuss these topics directly again.

Before I begin my statement I want to add that the FAA has carefully followed the entire course of these hearings before your Subcommittee. I believe they have provided an unprecedented forum where many of the interested and affected groups from the public, industry and government have been given the opportunity to comment on the important national concern of aircraft noise abatement. I applaud the efforts of your Subcommittee and staff and believe these hearings will have a significant positive impact in the formulation of a national aircraft noise abatement policy.

Mr. Chairman, balancing the demands of the American public and the needs of American business to form a healthy environment for both is one of the greatest challenges we face in this decade. You are well aware that we are currently considering various proposals to reduce aircraft noise at its source. That means reducing the amount of noise generated by the aircraft itself. Noise levels for aircraft have been established in Federal

Aviation Regulation Part 36. In accordance with statutory guidelines these are the lowest possible levels consistent with technological feasibility and economic reasonableness. To date, these regulations have only been applied prospectively. Now, we must consider whether we should make these regulations apply to aircraft already built and flying. Today, I want to share with you some of my thoughts and the analysis which will form part of the basis for the decision whether to, in fact, promulgate such a rule.

We are considering the cost-effectiveness, the environmental benefits and international implications of retrofit/replacement. As Administrator of FAA, I have made a personal review of these factors. Accordingly, I am now consulting with the Secretary of Transportation on possible implementation of this program. You have already been provided for the record, I believe, a paper to Secretary Coleman transmitted on January 26, 1976. As I informed the Secretary at that time, my purpose in forwarding that paper, was to provide a basis for further discussions with a view to arriving at a mutually agreeable position as soon as possible.

Aircraft noise is a major problem affecting the present viability and challenging the future of the air transportation system. Just last week, Paul Ignatius, President of ATA characterized noise as a possible "major constraint" on commercial aviation. Such constraints are manifested by operational restrictions being imposed by local airports. Examples of the kinds of restrictions being imposed or proposed include: curfews, total jet bans, exclusion of non-Part 36 aircraft,

and limits on numbers of operations. I believe that the proliferation of these restrictions will continue unless meaningful noise relief by other means is achieved. Certainly the testimony received thus far in the course of these hearings has consistently emphasized the concern of many groups that aircraft noise should be reduced. The FAA not only shares that concern but recognizes our obligation to take affirmative action to accomplish that objective.

In 1968 the FAA was empowered to promulgate rules to protect the American public from unnecessary aircraft noise. Within six months we published a Notice of Proposed Rulemaking, and in November 1969 issued Federal Aviation Regulation Part 36 which put a ceiling on the noise levels of all new type certificated subsonic jet airplanes over 75,000 pounds gross weight. Before promulgating a rule the FAA must show that the requirement is

- o Consistent with the highest degree of safety in air commerce or air transportation in the public interest;
- o Economically reasonable;
- o Technologically practicable;
- o Appropriate for the particular type of aircraft.

Through the cooperative research efforts of NASA and the aerospace industry we were able to develop the technology which, in 1973, allowed us to require that after December 31, 1974, all newly produced subsonic jet airplanes built for use in the United States had to meet the noise standards of FAR Part 36. Having placed a ceiling on the noise levels

of all jet airplanes being produced for use in the United States, we then turned to the task of assuring that future generations of aircraft would be required to meet even lower noise standards. This has been done. We have issued a Notice of Proposed Rulemaking which when finalized will provide for significant reductions in the noise level of the next generation of subsonic jet airplanes. The proposed changes would lower the FAR Part 36 noise levels from 1 to 4 decibels (db) for 4 engine aircraft depending on weight; from 3 to 6 db for 3 engine types and from 3 to 9 db for 2 engine jets.

As an indication of the advancements achieved we now have commercial jet airplanes which are twice the size of their predecessors yet sound half as noisy; smaller business jet airplanes which are significantly quieter than some propeller-driven airplanes.

These rules are only part of the answer. We also are considering the need to reduce the noise levels of aircraft in the air today. The government and industry have been heavily engaged in the research and development for means of quieting the older, narrow-body jet airplanes. We have investigated a range of alternatives for reducing the noise levels of these airplanes.

We had hoped, as did the industry, that the economic climate would have enabled the air transportation industry to rapidly phase out the older airplanes and replace them with quieter, more efficient, new airplanes. Unfortunately this has not happened. We find the situation

today to be one where some 80 percent of the air carrier airplanes still do not meet the noise standards which were promulgated almost seven years ago. Further, we estimate, that unless economic conditions change drastically or something else is done, by 1980 almost three-fourths of the fleet will still not meet the FAR Part 36 standards, and as late as 1990 some 48 percent of the fleet will still exceed those standards. The airlines, as they said last week, do not dispute these figures. Their own statistics provided to this Subcommittee reveal that by 1980 only 15% of the non-FAR 36 aircraft in today's fleet will be replaced and by 1990, 68% of the non-FAR 36 airplanes will still be in use. We have concluded that hoped for relief through fleet attrition and replacement cannot be expected to be forthcoming.

I would now like to outline some of the issues which we have been considering.

Issue #1 - Can meaningful noise relief result from SAM retrofit?

My answer is yes. As the Secretary pointed out in his landmark decision paper on the Concorde, the question of the meaningfulness of changes in noise levels is a complex one which must be viewed in a number of different ways. First, there is a marked change in noise levels when measured at the FAR Part 36 certification points. This allows a standardized basis for comparing the noise levels of different airplanes at three specified points

on the ground. Under the prescribed measurement conditions the noise reductions which are achievable by the SAM retrofit fall within the following ranges:

- o On takeoff up to 12 EPNdB;
- o On sideline up to 3 EPNdB;
- o On approach between 6 to 13 EPNdB;

A second way of assessing changes in noise levels is to consider the impact of all the airplanes operating out of an airport and the change in the total noise that people are exposed to. As you have already heard in earlier testimony, using the standards for measurement embodied in the California airport noise regulation, SAM retrofit would reduce the noise impact area around Los Angeles airport to less than one-fifth of its present size. Similarly, using a somewhat different measure of total noise exposure, the number of people impacted around Logan airport in Boston would be reduced by over 50 percent. Nationwide, we would expect the number of people who are adversely impacted to be reduced by some 20 percent.

In order to satisfy myself that the reductions in noise levels, which our analysis indicated are achievable, would be meaningful and significant, I personally discussed this issue with a panel of leading psychoacousticians, all of whom are members of the Committee on Hearing and Bioacoustics of the National Academy of Sciences. They were practically unanimous in their conclusion that we had used the correct methodology, and the noise reductions which could be achieved would be meaningful and significant.

Issue #2 - Can we rely on operational procedures alone instead of retrofit?

We have been analyzing different operational procedures for achieving noise reduction with the cooperation of the Air Transport Association. Procedures have been developed and are in use which do now reduce the noise levels. Operational procedures that are immediately available, as well as safe and practical, do not in all cases afford sufficient relief.

The operational procedures which have been suggested generally do not help the people living closest to the airport, those hardest hit by noise. Maneuvers immediately after takeoff or directly prior to landing are not amenable to modification for noise reduction. As you are aware, these two phases of operation also offer the greatest potential for accidents, and the FAA will not, for any reason, allow any procedure which would tend to degrade safety.

Issue #3 - Would a retrofit/replacement proposal be inflationary and wasteful of energy?

Any proposal we decide to implement would not be inflationary based on the criteria established by the Council on Wage and Price Stability. Similarly, a proposal wasteful of energy would not be acceptable. For example, the increased operating costs after retrofit would amount to less than two-tenths of one percent (0.2%) of total operating costs during

the maximum year when all airplanes would have been retrofitted. As the retrofitted airplanes were phased out of the fleet, this percentage would decrease. Similarly, the demand for raw material to produce the retrofit kits is insignificant when compared to total production of those materials. As an example, total aluminum used for the retrofit kits will be .009 percent (nine one thousands of one percent) of the aluminum produced in one year, and actual retrofit kit production will be spread out over several years.

The maximum increase in jet fuel consumption would be less than one-half of one percent (0.5%) of total annual consumption by these same airplanes. You might compare this with a current consumption of 9% of all fuel used by aircraft solely attributable to delays. Further actions to be taken by the FAA to continue to reduce this waste should more than offset the increase attributable to any retrofited aircraft. There will be no significant impact on the prices of material or fuel. Moreover, if we succeed in encouraging the replacement of airplanes, these planes will be more fuel efficient. The fuel cost of the rule should be viewed from its total impact.

Issue #4 I s the retrofit/replacement program cost-effective?

Studies by economists and court decisions have clearly demonstrated that aircraft noise does impose a cost on the persons impacted by the noise. A reduction in noise will provide economic benefits to those who

are exposed. FAA estimates, based on the work of these economists, are that a retrofit program like the one we are presently considering would have a benefit/cost ratio on the order of 2:1. Many factors have to be considered in such analyses. The costs of alternatives has to be considered. For example, you have heard testimony that unless something is done Los Angeles may be spending $300 million on land acquisition.

Issue #5 - Will retrofit financially hurt the airlines?

The FAA recognizes the current weakened financial condition of the air transport industry. A healthy, financially prosperous industry operating in an expanding economy could more quickly retire older noisy airplanes and replace them with new, quieter and more fuel-efficient airplanes. As I indicated earlier, we have estimated and I believe ATA is in general agreement, that excluding capital costs, the increase in costs as a result of the retrofit will not be significant relative to total operating costs -- less than one-half of one percent at a maximum.

We are concerned, however, with the ability of the industry to raise needed new capital for new airplane acquisition, much less their ability to raise capital to retrofit older aircraft. The airline industry has testified they cannot pay for retrofit. We are considering alternative financing arrangements which would accompany a retrofit/replacement program if we implement one. Alternatives under consideration are

payment of capital costs out of general revenue fund; payment of capital costs by the airlines; establishment of a Retrofit Trust Fund by imposing a special surcharge; and use of the Airport and Airway Trust Fund surplus.

Issue #6 - Should we require foreign operators to meet U. S. noise standards?

Aircraft noise is a widespread international problem. Aircraft noise in many countries is a major domestic issue and although it has international ramifications, countries have acted unilaterally to solve their own problems through such devices as curfews, departure taxes and noise fees. As an example, the noise charge imposed by the Japanese Airport Authority will cost U. S. air carriers an estimated $3.5 million per year when implemented fully. However, the main point is that aircraft operated by foreign flag carriers entering the United States contribute substantially to our domestic noise problems. For example at John F. Kennedy International and Miami International, foreign carriers conduct almost one-third of all Boeing 707/DC-8 operations. These are among the noisest airplanes. Excluding these airplanes from a program would reduce extensively the benefits at the airports where they operate.

Issue #7 - Are other alternatives to retrofit being considered?

As I indicated earlier, we have been actively investigating alternative means of reducing the noise of narrow-body airplanes. We have

assessed the costs and benefits of the NASA refan program, our own nacelle-jet suppressor program and re-engining these airplanes. The NASA refanned engine program is one which the Department of Transportation supported initially because the early design studies held great promise of significant noise reductions and increased efficiency at a moderate increase in total cost. While the program did achieve the noise reduction goals, the costs were significantly higher and the hoped for performance improvements were not forthcoming.

Similarly, we evaluated re-engining the older airplanes and determined that the program cost would be on the order of 12 to 13 billion dollars. Complete replacement of only the noisiest airplanes, the Boeing 707/720 and DC-8 would cost an estimated 20 billion dollars, assuming airplanes appropriately sized for the carriers' markets were available. Land acquisition, similar to that which is currently taking place in Los Angeles and Seattle, to remove people from the high noise impact zone would cost an estimated 13 billion dollars. These costs include purchase costs, moving and relocation costs and costs of replacing schools and other public facilities.

It has been suggested that the same, or greater, noise reductions could be achieved through sound proofing homes. Aside from the problems of acoustical insulation of older single family homes, there are many multi-family apartment houses in the high noise impact zones which do not readily lend themselves to acoustical retrofit. The cost of home insulation would be on the order of 2 billion dollars.

Before I conclude I want to explain some of my thinking about how Federal action would affect the air carrier and the manufacturing industry. In considering any retrofit/replacement program we are mindful of the U.S. air carriers present poor financial health. If we do advance a retrofit proposal we would not want the investment in retrofitted aircraft to delay the phasing out of old aircraft. On the contrary, we are attempting to speed up the replacement of older aircraft. We are considering providing the airlines an amount equal to the retrofit cost of any airplane to be replaced by a new, quieter aircraft to use as a down payment for the new plane. This would stimulate retirement of the aircraft and support the aircraft manufacturing industry. I would like any retrofit/replacement program to give our manufacturers a shot in the arm. If we can stimulate sales by providing incentives to the airline industry that would be an important positive aspect of any program. In fact, we have been placing the emphasis on the wrong part of the program-replacement should come first. This is a replacement/retrofit program. I don't believe that we have to wait, or should wait, until attrition removes these older, noisier and less fuel efficient airplanes from the fleet. Our efforts are aimed at being innovative enough to find a way to provide noise abatement and incentives for the airlines to replace their fleets. If some progress is not made we face more operational restictions placed by airports on the use of their facilities. No one wants this. It would be an inconvenience to the public, costly to the airlines, incompatible with the Federal national airspace plan and keeps the airports from being completely and most efficiently utilized.

Mr. Chairman, I am glad for the opportunity to share my thoughts on this subject.