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 Petitioners)

May 31, 1991

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OFFICE OF CHIEF COUNSEL
FEDERAL AVIATION ADMINISTRATION

TO: Anthony J. Broderick
Associate Administrator for Regulation and Certification

PETITION REQUESTING THE FEDERAL AVIATION ADMINISTRATION TO FULFILL ITS REGULATORY RESPONSIBILITY TO ENSURE ADEQUATE HEALTH AND SAFETY PROTECTION FOR FLIGHT ATTENDANTS, FLIGHT CREW, AND AIRLINE PASSENGERS BY PROHIBITING TOBACCO SMOKING ON ALL U.S. CARRIERS AND BY SETTING SPECIFIC STANDARDS FOR THE DESIGN, INSTALLATION, AND TESTING OF AIRPLANE LAVATORY SMOKE DETECTORS.

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I INTRODUCTION

It is now beyond doubt that environmental tobacco smoke (ETS) is harmful, and sometimes deadly, to healthy nonsmokers. The more frequent and intense the exposure, the higher the risk that a nonsmoker will eventually suffer from life-threatening lung cancer, cervical cancer, heart disease, bronchitis or other debilitating illnesses. For this reason, the United States Congress enacted, first, a prohibition on smoking on all domestic commercial passenger airline flights of two hours or less (effective April 23, 1988) and, more recently, a similar prohibition affecting virtually all domestic commercial passenger flights, including some of well over six hours in duration (effective February 25, 1990). In passing these measures, members of Congress emphasized the extraordinary negative impact that tobacco smoking in the airplane cabin has had--and continues to have on international flights--on the health of flight attendants and millions of passengers, including children, pregnant women and those with respiratory, heart, and other common medical problems.

Petitioners, who represent over 36,000 flight attendants across the United States, contend that it is in the public interest to protect passengers and crew from the serious health effects of ETS exposure by prohibiting smoking in the enclosed space of all airline cabins. The health risks do not miraculously "disappear" when U.S. carriers fly to foreign destinations. On the contrary, they are at least as severe, and almost certainly heightened, on international flights, most of which are far longer in duration than domestic flights.

In addition, the serious safety concerns created by the frequent use of open flames and lit tobacco products in small pressurized cabins flying at altitudes of tens of thousands of feet, strongly favor the elimination of smoking on all U.S. carriers by Federal Aviation Administration (FAA) fiat. For the same reason, petitioners request that the FAA require all U.S. carriers to install tamper-proof airplane lavatory smoke detectors.

II THE FEDERAL AVIATION ADMINISTRATION HAS JURISDICTION TO PROHIBIT SMOKING ON ALL U.S. CARRIERS

The Federal Aviation Act of 1958 (the Act) created the Federal Aviation Administration as an independent rule-making and enforcement agency to "promote safety of flight of civil aircraft in air commerce...." The Act is not specific as to occupational health responsibility on board aircraft; however, in 1975, the FAA published a document in the Federal Register concerning aircraft crewmember safety and health standards. In it, the FAA

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accepted full responsibility for ensuring a healthy and safe aircraft working environment.¹ To quote:

Pursuant to its complete and exclusive responsibility for the regulation of the safety of civil aircraft operation under the Federal Aviation Act...the FAA prescribes and enforces standards and regulations affecting occupational safety or health with respect to U.S. registered civil aircraft in operation....

With respect to civil aircraft in operation, the above mentioned safety regulatory responsibilities directly and completely encompass the safety and health aspects of the work environment of aircraft crewmembers. Aircraft design and operational factors are indivisible from occupational safety or health factors insofar as they affect the workplace of those crewmembers....

Every factor affecting the safety and health of working conditions of aircraft crewmembers involves matters inseparably related to the FAA's occupational safety and health responsibilities under the Act. With respect to civil aircraft in operation, the overall FAA regulatory program, outlined in part above, fully occupies and exhausts the field of aircraft crewmember safety and health.² (Emphasis added.)

III THE FAA SHOULD PROHIBIT SMOKING ON ALL U.S. CARRIERS FOR REASONS OF HEALTH AND SAFETY, AND SET SPECIFIC STANDARDS FOR THE DESIGN AND INSTALLATION OF AIRPLANE LAVATORY SMOKE DETECTORS

¹ "Occupational Safety or Health Standards for Aircraft Crewmembers, Guidance Information," FAA, 40 Fed. Reg. 29114, 1975.

² Jurisdiction over the occupational health and safety of the aircraft has been a matter of dispute between the Occupational Safety and Health Administration and the FAA. A good outline of the history of this dispute can be found in a petition for rulemaking, submitted by the Association of Flight Attendants, which requested that the FAA adopt OSHA health and safety standards. (Rules Docket #26232.) Because the FAA has claimed complete jurisdiction, OSHA does not intercede in health and safety issues involving aircraft in flight. The FAA therefore has de facto, if not statutory, sole responsibility.

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A THE STRONG CONSENSUS OF THE CREDIBLE SCIENTIFIC COMMUNITY IS THAT ENVIRONMENTAL TOBACCO SMOKE SERIOUSLY THREATENS THE HEALTH AND LIVES OF NONSMOKERS IN ENCLOSED SPACES, PARTICULARLY IN THE CLOSE CONFINES OF THE AIRLINE CABIN

The scientific evidence is now abundant and irrefutable that environmental tobacco smoke exposure causes lung cancer and other respiratory illnesses in healthy nonsmokers. The conclusion that ETS is lethal and debilitating to otherwise healthy women, men, and children has been adopted without qualification by the U.S. Surgeon General, the U.S. Department of Health and Human Services, the National Academy of Sciences and its National Research Council, the World Health Organization, the Environmental Protection Agency, the American Cancer Society, the American Lung Association, and the American Heart Association, among others.

The following is a synopsis of that evidence:

* In 1986, the Surgeon General published a report entitled The Health Consequences of Involuntary Smoking.³ In the same year, the National Academy of Sciences (NAS) published a report entitled Environmental Tobacco Smoke, Measuring Exposures and Assessing Health Effects.⁴ The conclusions described in these documents were reached "after examining all of the available, credible scientific evidence by this nation's most respected scientists, and represented the broad consensus of the scientific community."⁵ The conclusions are as follows:

- Involuntary smoking is a cause of disease, including lung cancer, in healthy nonsmokers.
- The health risks posed by environmental tobacco smoke are not eliminated by the simple separation of smokers and nonsmokers within the same airspace.

3 U.S. Department of Health and Human Services. 1986. The Health Consequences of Involuntary Smoking. Report of the Surgeon General. Rockville, MD.

4 National Research Council. 1986b. Environmental Tobacco Smoke: Measuring Exposures and Assessing Health Effects. National Academy Press. Washington, DC.

5 "Statement of Alan C. Davis on Behalf of The American Lung Association, The American Heart Association and The American Cancer Society," before the Subcommittee on Health and the Environment, Committee on Energy and Commerce, U.S. House of Representatives, April 10, 1991, pg. 2.

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- Involuntary exposure to tobacco smoke increases the frequency of lower respiratory illnesses in infants and young children.
- Involuntary exposure to tobacco smoke increases the occurrences of respiratory symptoms in children (cough, sputum production, wheezing) and reduces the rate of lung growth as the lung matures.
- Passive smoke causes acute irritation of the eyes, nose, and throat along with a perception of odor.

* On December 15, 1989, the Department of Transportation published Airliner Cabin Environment: Contaminant Measurements, Health Risks, and Mitigation Options, (hereafter referred to as the DOT Study). The document sets forth the results of a study which was designed to develop information to be used for determining health risks from exposure to environmental tobacco smoke (ETS) and other pollutants. The DOT Study concluded:

- "The evidence for an association of environmental tobacco smoke with cancer is indisputable...."(Emphasis added.)⁶
- "The great majority of epidemiologic studies have indicated causal association between ETS and lung cancer that is exposure-dependent."⁷
- "Estimated lifetime lung cancer risks ascribable to ETS exposure for nonsmoking cabin crew members flying 960 hour per year on smoking flights for 20 years range from 12 to 15 premature cancer deaths per 100,000 nonsmoking cabin crew members for domestic flights and 13 to 17 premature cancer deaths per 100,000 for international flights."⁸

* In 1986, a report entitled The Airliner Cabin Environment: Air Quality and Safety was released by the National Research Council of the National Academy of Sciences. The report found that the strict separation of the airplane into smoking and

6 Nagda, Fortmann, Koontz, Baker, and Ginevan, Airliner Cabin Environment: Contaminant Measurements, Health Risks, and Mitigation Options (Geomet Technologies for the Department of Transportation, DOT-P-15-89, 1989), p.7-4.

7 Ibid., p. 7-4.

8 Ibid., p. 10-4.

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nonsmoking zones does not prevent exposure of flight attendants and nonsmoking passengers to ETS, because of the location of galleys and lavatories in the smoking areas. It found that the high concentration of ETS generated in the smoking zone cannot be compensated for by increased ventilation in that zone. It noted, in addition, that smoke exposure can become significant in aircraft with outside-air flow rates as low as 7 cfm/passenger, adding that even a ventilation (airflow) rate of 14-15 cfm/passenger consists of as much as 50% recirculated cabin air. The report recommended a ban on smoking on all domestic flights: 1) to lessen irritation and discomfort to passengers and crew; 2) to reduce potential health hazards to cabin crew associated with ETS; 3) to eliminate the possibility of fires caused by cigarettes; and 4) to bring the cabin air quality into line with established standards for other closed environments.

* On February 10, 1989, an article entitled "Passive Smoking on Commercial Airlines" was published in the Journal of the American Medical Association, which outlined the results of a study on the subject.⁹ The study found that, based on cotinine excretion (a byproduct of nicotine in the urine and an indication of nicotine exposure) and acute symptoms, an effective separation of smoking and nonsmoking sections on the aircraft studied was not achieved. Aircraft with no recirculation of cabin air had significantly lower nicotine concentrations than those with recirculation.

* On March 17, 1989, the Journal of the American Medical Association published the results of a study conducted by Martha L. Slattery and colleagues at the University of Utah School of Medicine which linked passive smoking to cervical cancer. The study concluded that nonsmoking women exposed to ETS for three hours or more per day were nearly three times as likely to have cervical cancer as those not exposed.

* On September 6, 1990, an article entitled "Lung Cancer and Exposure to Tobacco Smoke in the Household" was published in The New England Journal of Medicine. The article describes a population-based, case-control study directed by Dr. Dwight Janerich of Yale University which demonstrates that children exposed to environmental tobacco smoke are at significantly increased risk of getting lung cancer when they reach adulthood. The report estimated that 17 percent of all lung cancer cases among nonsmokers results from involuntary inhalation of environmental tobacco smoke at home as children.

* The January, 1991 issue of Circulation, an American Heart

⁹ Mattson, .E., et al. 1989. "Passive Smoking on Commercial Airlines." J. Am. Med. Assoc., Vol. 261, No. 6 pp. 867-872.

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Association Journal, estimated that passive smoking causes approximately ten times as many deaths from heart disease as it does from lung cancer. It estimated the total number of annual deaths in the United States from passive smoking at 53,000.

* On February 1, 1991, the Centers for Disease Control of the Department of Health and Human Services reported in the Morbidity and Mortality Weekly Report that, of the 434,000 annual deaths in the United States resulting from tobacco use, at least 3,825 nonsmoking Americans die each year from lung cancer attributable to passive smoking.

* On April 18, 1991, a panel of the Environmental Protection Agency's (EPA) Science Advisory Board endorsed the conclusions of a draft report prepared by the EPA which would classify environmental tobacco smoke as a Group A, or known human, carcinogen--the category that the agency has reserved for the most dangerous cancer-causing pollutants, including radon, asbestos and benzene. The evidence upon which the draft risk assessment is based is considerably greater than the evidence upon which the EPA based its determinations to classify other toxins as Group A carcinogens.

B SMOKING AND THE ACCOMPANIED USE OF MATCHES AND CIGARETTE LIGHTERS IN THE AIRLINE CABIN HAVE POSED, AND CONTINUE TO POSE, A SERIOUS THREAT TO THE SAFETY OF PASSENGERS AND CREW

Open flames and lighted tobacco products present an obvious fire hazard aboard aircraft. Flight attendants have seen passengers walk and stand in the airplane aisles with lighted cigarettes, flicking cigarette ashes on the aircraft floor. Many flight attendants have reported that passengers sometimes fall asleep with lit cigarettes in hand or drop them inadvertently between the fuselage and the seat. They have reported minor seat cushion fires which were started by misplaced cigarettes. Flight attendants have been burned as they pass through the aisles by carelessly held cigarettes. When alcohol consumption is added to the equation, the safety hazards are compounded as passengers become even less responsible in handling their cigarettes. Thus, a carelessly discarded cigarette is suspected as a possible cause of the in-flight fire on board Air Canada flight 797 which resulted in 23 deaths on June 2, 1983. In addition, lit cigarettes pose an extreme hazard in the event of a decompression when supplemental oxygen becomes available at all passenger seats.

C TO ENSURE THE SAFETY OF PASSENGERS AND CREW, THE FAA SHOULD SET STANDARDS FOR THE DESIGN, INSTALLATION, AND TESTING OF AIRPLANE LAVATORY SMOKE DETECTORS TO ENSURE THAT THEY ARE RELIABLE AND TAMPER-PROOF.

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Regardless of a smoking prohibition on airplanes, aircraft lavatories must be equipped with smoke detectors that are efficient and reliable so that they detect smoke from any conceivable source. All passenger-carrying transport category aircraft lavatories must be equipped with smoke detectors (Sec. 14 CFR 121.308). However, the regulations are not specific as to the design and installation of lavatory smoke detectors. On many aircraft, the detectors are readily accessible to passengers and can be easily disabled. Furthermore, the regulations do not include testing standards and procedures for this equipment specific to the airplane environment. Therefore, this petition requests that the FAA revise 14 CFR 121.308 to set adequate standards for the design, installation, and testing of airplane lavatory smoke detectors. These standards must be detailed and specific to ensure that airplane lavatory smoke detectors are reliable and tamper-proof.

II. MITIGATION OPTIONS AND COST/BENEFIT RELATIONSHIPS

The DOT Study examined eight options for reducing the exposure of flight attendants and passengers to ETS on airplanes:

- Implementing a total or partial ban.
- Curtailing the smoking period.
- Increasing ventilation.
- Creating a smoking section with a separate exhaust system.
- Creating a smoking lounge with a separate exhaust system.
- Improved filtration.
- Creating separate smoking and nonsmoking flights.
- Rotating flight attendants so that each is assigned to the smoking section only for some fraction of flights.

Of these eight, four were deemed to be impractical and/or inexpedient. Four strategies were retained for further study, including: (a) total ban on airliner cabin smoking; (b) curtailment of the smoking period; (c) increased air intake or ventilation; and (d) improved filter efficiency.¹⁰

A The Most Effective Option: A Total Ban on Airline Smoking

A total airline smoking ban would yield a 100% ETS exposure reduction. The benefit to passengers and crewmembers focused on reductions in risk of lung cancer due to ETS exposure and was estimated at \$2.93 million. The study found no costs associated with a total ban.

¹⁰ A full description of each of these options, the evaluative process, and study conclusions can be found in Sections 9.0 through 10.10 of the DOT Study.

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The DOT Study concluded:

Among the methods evaluated for reducing risks due to ETS, a total ban on airliner cabin smoking would eliminate ETS exposure in airliner cabins and yield the greatest benefit to flight attendants and nonsmoking passengers.¹¹

B Periodic Curtailment of Smoking During Flights

Curtailment of smoking for 10 minutes every two hours would yield an estimated 70% exposure reduction with no added costs. The report also concluded, however, that this option would substantially raise short-term ETS levels as a result of intense compensatory smoking by smoking passengers, and thereby increase acute health responses such as eye and nose irritation.¹²

C Increased Air Intake or Ventilation

According to the study, this strategy would result in an estimated 23% to 33% reduction in exposure to ETS but at a cost of \$6.2 million to \$1.5 million per year depending on the method used. The benefits to passengers and crew of this approach was estimated at between \$.67 million and \$.96 million.¹³

D Increased Filter Efficiency

This option would result in an estimated 4% to 5% reduction in ETS exposure. (Information on filter costs was not available.)

V ECONOMIC IMPACT CONSIDERATIONS

The DOT Study did not include the projected costs of smoker inconvenience and possible "switchover" to other modes of transportation in its evaluation of the costs of implementing an airline smoking prohibition. This rendered the estimated cost at \$0.

However, the study also did not consider the following in its

11 Airliner Cabin Environment: Contaminant Measurements, Health Risks, and Mitigation Options, p. 10-6.

12 In addition, scientific evidence indicates that there is no safe level of ETS exposure.

13 It is important to note that newer aircraft restrict air intake in order to save fuel. These aircraft are designed with fans which recirculate old cabin air through filters. Some aircraft recirculate as much as 50% of the cabin air.

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evaluation of smoking ban benefits:

- Reduction of the acute effects of ETS exposure such as eye irritation, exacerbation of chronic conditions, and the increase in the probability of developing chronic conditions.
- Increased comfort related to elimination of odor.
- Savings from reduced use of health benefits by cabin crew.¹⁴
- Savings from reduced use of health benefits by passengers.
- Savings to carriers from reduced risk associated with employee litigation stemming from the development of illnesses related to involuntary smoking.

In addition, it should not be automatically assumed that extending the smoking ban to include international flights would create a cost to U.S. airline companies in terms of lost revenue from smokers who switch to other airlines. When Northwest Airlines banned smoking on domestic flights in advance of the enactment by Congress of smoking restrictions affecting all carriers, it reported no adverse economic effects.

Whereas a percentage of smokers may elect smoking flights, it is equally plausible that nonsmokers will switch to nonsmoking flights. In estimating the cost or benefits of "cross-overs" it must be noted that more than 70% of the U.S. population does not smoke. Passenger polls indicate, moreover, that 35% of smokers actually book seats in the nonsmoking section of the airplane, and that smoke-free flights are preferred by the vast majority of the flying public.

V CAMPAIGN FOR SMOKE-FREE SKIES AND ICAO

A number of international, regional and national public health and flight attendant organizations have announced a campaign for a worldwide prohibition of smoking on board airplanes. This coalition hopes to bring the issue of cigarette smoking on the world's airliners before the members of the International Civil Aviation Organization (ICAO).

We encourage the Department of Transportation and the Federal

¹⁴ It has been estimated that smoking induced disease is costing our nation in excess of \$65 billion each year, \$22 billion of which is in direct health care costs.

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Aviation Administration, as members of the Interagency Group on International Aviation (IGIA) which develops U.S. policy on international aviation, to support the adoption of an ICAO standard which would prohibit smoking on the airliners of member countries. U.S. Department of Health and Human Services Secretary, Louis Sullivan already has expressed his support for a prohibition on smoking on all international flights.¹⁵

While a world-wide smoking ban would be preferable in that it would protect the health and safety of all airline passengers, it is still incumbent upon the Federal Aviation Administration to protect, as soon as possible, the affected U.S. aviation employees and traveling public for which it is responsible from the hazards posed by smoking on board U.S. carriers.

VII TEXT OF PROPOSED RULE CHANGES

Petitioners propose that Part 121 of the Federal Air Regulations be amended as follows:

121.308 Lavatory fire protection.

(a) Add the following text: The smoke detectors must be installed so that they are inaccessible to passengers and tamper-proof. Smoke detectors must be designed to operate in an in-flight environment and tested to ensure reliability.

121.317 Passenger information.

- (a) no change
- (b) no change
- (c) Delete the phrase "on a flight segment on which smoking is prohibited".
Delete paragraphs (1), (2), and (3).
Amend the text to read "The smoking of tobacco is prohibited on all U.S. carriers."
- (d) no change
- (e) no change
- (g) no change

VIII FEDERAL REGISTER SUMMARY

The Federal Aviation Regulations require petitioners to include a brief summary of their petitions for publication in the Federal Register. The following summary is therefore provided:

¹⁵ Letter from Secretary of Health and Human Services, Louis M. Sullivan to Secretary of Transportation, Samuel K. Skinner, April 9, 1991.

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The Independent Union of Flight Attendants, the Association of Professional Flight Attendants, the Independent Federation of Flight Attendants, and the Union of Flight Attendants, who in the aggregate represent over 36,000 flight attendants in the United States, have petitioned the Federal Aviation Administration to prohibit the smoking of tobacco on U.S. airliners in order to protect affected aviation employees and passengers from the health and safety hazards posed by environmental tobacco smoke.

In addition, the petitioners request that the FAA amend the Federal Air Regulations to set specific standards for the design, installation, and testing of aircraft lavatory smoke detectors to ensure that they are reliable and tamper-proof.


Respectfully submitted,



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