Before the
FEDERAL AVIATION ADMINISTRATION
Washington, D.C. 20591

In the Matter of	)
	)
SMOKING IN THE COCKPIT, AND	)
SMOKING BY FLIGHT CREWMEMBERS	)
BEFORE COMMERCIAL FLIGHT OPERATIONS	)
	)
	)

PETITION OF THE AIRLINE PILOTS COMMITTEE OF 76,
PUBLIC CITIZEN'S HEALTH RESEARCH GROUP,
AND THE AVIATION CONSUMER ACTION PROJECT

In a recent survey of United Air Lines pilots, 97 percent of the 767 persons who responded stated that habitual smoking is hazardous to the health of the smoker, and over 80 percent said that smoking of cigarettes by <u>other</u> crewmembers in the cockpit is hazardous to the respondent's own health. 86 percent of the pilots who answered feel they cannot do their best work when other crewmembers in the cockpit are smoking during an approach to landing. Over 70 percent of the respondents do not think smoking should be allowed at all in the cockpit.

These results underscore a fact that has been amply demonstrated by modern medical research -- that tobacco smoking presents unique hazards for airline pilots that are incompatible with maximum air safety. Accordingly, the 76 airline pilots who are listed in Attachment A, together with two national public interest organizations, hereby petition the Administrator to issue regulations that

will prohibit all smoking in the cockpit during commercial flight operations, and prohibit pre-flight smoking by flight crewmembers (pilots, flight engineers and flight navigators) within 8 hours before commercial flight operations.

STATEMENT IN SUPPORT OF THE PROPOSAL

Public Citizen's Health Research Group has conducted an exhaustive review of medical and scientific literature concerning the effects of tobacco smoking on the mental and physiological functions involved in flying an airplane. The results of this research are set forth in the Health Research Group's report entitled "Smoking: Its Adverse Effects On Airline Pilot Performance", which is being submitted to the FAA in support of this petition. The report sets forth the compelling evidence that exposure to tobacco smoke significantly interferes with the physical and mental abilities airline pilots need to operate at maximum performance levels.

1. Impairments Caused by Elevated Blood Carboxyhemoglobin Levels

First, the Health Research Group report describes the impairments caused by exposure to carbon monoxide, a colorless, odorless, but highly toxic gas produced by burning tobacco.

Carbon monoxide that is inhaled combines with the red blood cells to form carboxyhemoglobin (COHb), which reduces the oxygen-carrying capacity of the blood and deprives the body's tissues of

needed oxygen. As a result, exposure to relatively low levels of carbon monoxide causes substantial impairments to vital brain and nervous system functions. These effects persist for many hours after smoking activity has ceased.

When combined with the effects of altitude, the increased level of COHb in the bloodstream that results from even light to moderate smoking adversely affects visual acuity, brightness perception, concentration, manual dexterity and coordination, and the ability to make judgments and act under stress such as may occur during flying. Based on tests conducted on human subjects, the effects at equivalent COHb levels of 10% or less - well within the likely range for a pilot who is only a light or moderate smoker -- are summarized as follows:

<u>Visual impairment</u>	
Brightness threshold	25% impairment
Visual acuity	25% impairment or more
Reaction to visual stimulus	Significant impairment
Temporal resolution of stimulus	Significant impairment
Vigilance	Significant impairment
<u>Timing or Temporal Impairment</u>	
Ability to judge time periods	Significant impairment
Attentiveness to auditory stimuli	Significant impairment
<u>Impairments to Decisionmaking and Coordination</u>	
Choice discrimination	Significant increase in errors
T-crossing test	Reduced performance
Multiple limb coordination	Significant impairment
Manual dexterity	Substantial decrease
Careful auto driving habits	Significant deterioration
Response time	Significant increase
Ability to maintain distance	Significant impairment

Since these functions are of critical significance to the safety of flight operations, continued unrestricted smoking by airline pilots is inconsistent with the achievement of "the highest possible degree of safety in the public interest" as mandated by section 601(b) of the Federal Aviation Act, 49 U.S.C. § 1421(b).

2. Effects of Tobacco Smoke on Non-Smoking Pilots

Even non-smokers are subjected to elevated COHb levels when they breathe air that others have contaminated with tobacco smoke, especially in a confined space. The problem of "involuntary smoking" is especially serious for airline pilots because, even with the ventilation systems of modern jets, smoking in the cockpit leads to significant increases in the amount of carbon monoxide in their air supply. Thus, through the same process of carboxyhemoglobin formation in the bloodstream, non-smoking pilots can also suffer adverse mental and physical effects as a result of smoking by other people on the flight deck.

In addition, tobacco smoke is known to be a serious irritant to many individuals because of other chemical components besides carbon monoxide -- substances such as ammonia, nicotine, acetaldehyde and acrolein. Even to otherwise healthy non-smokers, exposure to these can and does result in eye and throat irritation, headache, and nausea.

A 1971 government study concerning smoking on military and commercial flights found that over 60 percent of the non-smoking passengers surveyed reported significant discomfort due to smoking by other passengers. Subsequently, regulations were promulgated by the Civil Aeronautics Board to assure the right of each passenger on an airline flight to be seated in a "no-smoking" area. (14 C.F.R. Part 252.) The non-smoking pilot, however, does not even have the same protection afforded to passengers, although any continuing source of distraction or irritation to a pilot must be a matter of serious safety concern. Indeed, the airlines have tended to foster the practice of smoking in the cockpit, rather than taking measures to alleviate the problem. One example of this is the company rule of United Air Lines that permits on-duty flight attendants to smoke only in the cockpit and nowhere else on the plane. Other airlines have similar rules.

The Administrator has authority and, we believe, an affirmative responsibility to protect nonsmoking crewmembers and enhance the safety of commercial air transportation, through rulemaking to control inflight and preflight smoking, under Sections 313(a) and 601 of the Federal Aviation Act, 49 U.S.C. §§ 1354(a) and 1421.

TEXT OF PROPOSED REGULATION

The text of the regulation proposed by petitioners, to be added to Part 91 of the Federal Aviation Regulations, is as follows:

"(a) No person may smoke any tobacco product in the flight deck area during the operation of any flight in air commerce.

"(b) No person may act as a flight crewmember on any flight in air commerce within 8 hours after smoking any tobacco product."

INTERESTS OF THE PETITIONERS

The Airline Pilots Committee of 76 is a group of flight crewmembers, employed by seven trunk airlines, who are filing this petition for rulemaking in their own individual capacities. The members of the pilots group are listed in Attachment A. These petitioners share a professional, personal, and civic concern for air safety, and they are vitally interested in actions to improve the safety and health conditions under which they work.

The Health Research Group is a non-profit organization, funded through voluntary donations to Public Citizen, which is engaged in public interest research and advocacy on health issues, including the physiological effects of voluntary and involuntary tobacco smoking. The Aviation Consumer Action Project is a non-profit

consumer organization, supported by voluntary donations, which seeks to improve the safety of air transportation. On behalf of their supporters and employees who frequently travel on commercial air flights, both the Health Research Group and the Aviation Consumer Action Project have a vital interest in improving the safety of commercial air travel through the restrictions on tobacco smoking proposed herein.

CONCLUSION

As leading medical authorities have concluded, smoking is a particular hazard in aviation. This is both because of the elevation of blood carboxyhemoglobin levels, which causes significant impairment of the pilot's mental, visual and physical abilities, and because tobacco smoke in the cockpit is a continuing source of irritation and distraction to great numbers of non-smoking pilots. There is no evidence whatever of any favorable or beneficial effects of smoking in relation to commercial flight operations. For these reasons, we urge the Administrator promptly to enact the proposed rule governing in-flight smoking in the cockpit and preflight smoking by flight crewmembers.

Respectfully submitted,

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