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For Release:  
February 12, 1990

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### **Components of Environmental Tobacco Smoke (ETS) Confirmed to be Minimal – Almost Non-existent in Nonsmoking Sections**

WASHINGTON, D.C. -- A report released today indicates that the levels of environmental tobacco smoke (ETS) aboard aircraft are minimal -- in fact, the components are almost non-existent in the nonsmoking sections. The study was commissioned by the U.S. Department of Transportation (DoT).

The new study confirms previous research demonstrating extremely low ETS levels in both smoking and nonsmoking sections of aircraft when smoking is permitted. The minimal levels confirmed by this report have been described in past reports as "biologically insignificant" -- not adversely affecting the health of passengers or crew.

The DoT-commissioned study examined respirable particulates and nicotine as measures of ETS. The study's data indicate that:

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- o No real difference in particulate levels was reported between the nonsmoking section of flights where smoking was permitted and flights where smoking was banned.
- o For 54.4 to 82.6 percent of the measurements taken in the nonsmoking section of flights where smoking was permitted, nicotine was so low as to be undetectable.

These two points, as well as other data presented, indicate the efficacy of separate smoking sections and clearly demonstrate nonsmoker exposure to ETS is minimal on flights where smoking is permitted. Further, it is difficult to believe that these low levels would result in any increased "risk" based on the scientific literature. The "risk" alleged by ETS was also found to be substantially less than the risk posed by exposure to cosmic radiation:

To illustrate, translating the study's data into more understandable estimates of exposure:

- o Passengers in the boundary seats (those immediately adjacent to the smoking section) would have to fly 266 round trips from New York to Tokyo -- about 7,500 hours in-flight -- to be exposed to the nicotine "equivalent" of one cigarette.
- o Passengers in the middle of the nonsmoking section on a smoking flight would have to fly 1,730 round trips from New York to Tokyo -- some 48,440 hours in-flight -- to be exposed to the nicotine "equivalent" of one cigarette.

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- o If all of the particulates measured aboard the aircraft were from ETS, and a flight attendant only worked on smoking flights, the amount of particulates that attendant would receive over a full year would be the "equivalent" to that of less than one-half of one cigarette.
- o A more realistic measure would be found by removing from the equation particulate levels found on flights where smoking is banned -- since these particulates cannot be attributed to ETS but to other sources. Using this method, the particulates received by a flight attendant would be the "equivalent" of less than two-tenths of one cigarette per year.

The one area where the study departs from previous research was the reported "risks" to passengers and flight attendants from exposure to ETS. While previous reports on exposure and the levels found in this study have termed any "risk" to be negligible, this study assesses a risk level that is unsupportable. It is difficult to believe that, for example 0.2 cigarette equivalents for respirable particulates per year, could result in any increased lung cancer risk based on the ETS scientific evidence. In order to report these "risks," the study must rely on a number of invalidated assumptions that are not supported by epidemiological data on ETS.

Further, the study employs a second set of unrealistic assumptions particularly regarding flying time for business fliers and casual passengers -- as the foundation for the estimated "risk." For example, the study assumes that flight attendants fly 960 hours a year for twenty years, starting at the age of 25. Business fliers are defined as those who fly 480 hours per year -- the equivalent of 12 standard 40-hour work weeks in the air -- for 30 years starting at the age of 35. The casual passenger defined by the study is assumed to fly 48 hours per year for 40 years, starting at the age of 25.

These assumptions, combined with the lack of epidemiological and exposure data, serve to further dilute any attempts at quantification of risk. Thus, the estimates for "lifetime risk" are no more than a series of unsupportable speculations.

According to other findings reported in this study, inadequate ventilation may be a significant cause of passenger discomfort. For example, levels of carbon dioxide were reported at levels substantially higher than recommended limits for indoor air environments -- a frequently recognized indicator of inadequate ventilation. Further, carbon dioxide levels were higher on flights where smoking was not permitted than on smoking flights.

The levels of components measured suggest that ventilation rates -- not smoking -- are the major influence on the comfort of passenger and crew.

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