

cargo airplanes and part 125 all-cargo commercial operators, over the next 20 years, are estimated to be approximately \$172,000,000. The corresponding present value costs are estimated to be approximately \$118,000,000.

Benefits and Costs Comparison

The installation and use of TCAS for cargo airplanes is projected to reduce the probability of a cargo airplane MAC by 94% and a cargo/passenger MAC by 17%. To obtain this benefit will cost operators slightly under \$118 million in present value terms over 20 years.

A 20 percent chance of a midair collision involving a cargo airplane can result in accident values from under \$10 million to hundreds of millions of dollars. In the least costly case, a cargo airplane could have a midair collision with a general aviation airplane with no collateral damage. If a midair collision occurs over Los Angeles, San Diego, and other metropolitan areas, significant collateral damage can easily exceed hundreds of millions of dollars. MITRE estimated slightly more than 50 percent of all midair collisions are expected to occur over the suburbs or cities. With no collateral damage a collision with a large passenger airplane can result in costs well more than \$300 million. The worst MAC occurred in 1996 with 349 fatalities. Preventing such an accident is worth over a billion dollars.

The benefits of the final rule of the proposed rule equal approximately \$10,000,000. This benefit estimate is based upon avoiding a statistical 0.5 air cargo airplane midair collision with another airplane. If the expected number of accidents is reduced to 0.1 avoided midair collisions, then the estimated benefits decline to \$1.1 million. Even though expected benefits are expressed in fractions of a preventable accident, a midair collision involves two airplanes with no survivors. If an accident does occur the benefits can easily exceed the cost of this rule.

Despite the estimated dollar benefits being less than the estimated costs, the FAA believes the qualitative benefits justify the costs. The facts are that collision avoidance devices have prevented MACs and that midair collisions with cargo airplanes have occurred. This final rule will help to reduce the risk of MACs and NMACs. This risk includes six NMACs in 2001, one NMAC of less than 100 feet in 1999 and now two MACs involving cargo and passenger airplanes. Given these circumstances it is not surprising there is substantial favorable public interest in this rule. This final rule responds to a Congressional mandate, responds to

the petition for rulemaking from the Independent Pilots Association, and responds to NTSB safety recommendations. Hundreds of professional airline pilots who commented on the NPRM requested that this rule be implemented as soon as possible. Much of the air cargo fleet is already in compliance with the rule by voluntary action by the carriers and most of the remaining air cargo fleet is scheduled to be in compliance by December 31, 2004.

Therefore, the FAA believes that the benefits of this proposed rulemaking justify the projected costs.

Final Regulatory Flexibility Analysis

Introduction and Purpose of This Analysis

The Regulatory Flexibility Act of 1980 (RFA) establishes “* * * as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation.” To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The RFA covers a wide range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a “significant economic impact on a substantial number of small entities.” If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

The FAA determined that this proposal results in a significant economic impact on a substantial number of small entities. The purpose of this analysis is to ensure that the agency has considered all reasonable regulatory alternatives that will minimize the rule’s economic burdens for affected small entities, while achieving its safety objectives.

Reasons for the Rule

The Traffic Alert and Collision Avoidance System (TCAS) was developed to minimize the possibility of a midair collision by providing an on-board safety back-up system that operates independently of the air traffic control (ATC) system. Beginning December 30, 1990, in the United States, a TCAS II system was required in certain part 121, 125 and 129 airplanes with more than 30 passenger seats. After

December 31, 1995, a TCAS I system was required in all part 121 airplanes with 10 to 30 passenger seats. Cargo airplanes were not covered.

This rule is being promulgated because the FAA believes that the risk of midair collisions and potential collateral damage after a collision involving a cargo airplane is too high and that this rule, if implemented, will reduce this risk. In addition, the 106th Congress enacted Pub. L. 106–18 that directs the FAA Administrator to require, in part, that certain cargo airplanes be equipped with collision avoidance technology by December 31, 2002. The law provides for an extension of up to 2 years.

Significant Issues Raised by the Public Comments in Response to the IRFA

There were no public comments that directly addressed the IRFA. However, a comment was made by a small entity. This comments is reproduced below.

USA Jet Airlines, said, in part, “Further, it is our position that a rash of mechanical and software technologies are becoming foisted upon aircraft without regard to fleet size, aircraft age or the existence of satisfactory equipment already on the aircraft. For example, in the next 3 years alone, a DC–9 and Falcon operator will, under proposed rules/regulations and existing rules/regulations pay \$250,000 per aircraft for TCAS II, \$125,000 per aircraft for the Terrain Awareness Warning System (TAWS) and a significant sum for the Domestic RVSM system being discussed by the FAA. We have not seen any indication of a need for these systems in the all-cargo industry.

While certainly any of these proposals have merit in that they each seek a positive goal, the cost of the implementation of all systems, precludes their very implementation for many carriers.”

Several other individual respondents also expressed a concern about the cost of the proposed regulation. Some small entities expressed a desire for more time to implement the final rule. One of these small entities requested at least a five-year compliance period. Another commenter said this rule will put small firms out of business.

The FAA considers that these comment are reasonable for small firms. However, because the final rule is a Congressional Mandate, the FAA has little flexibility in changing the final rule. However, the FAA did reduce the TCAS requirement from TCAS II to TCAS I for piston-powered airplanes because the FAA does not believe that piston-powered airplanes have the