

of flights are RVSM compliant and we must consider benefits to overall NAS operations.

5. A number of commenters proposed that the FAA should delay implementing DRVSM. Dates proposed included: Late 2005, 2006, and 2010. The rationale for the proposed delays included request for more time for operators to complete aircraft compliance work, suggestion that RVSM should be delayed until airport capacity projects were completed, limitations to repair station capacity, and concern for operator log jam in the final year.

FAA Response: We have chosen a target implementation date on which we project approximately 90 percent of flights in the NAS to be conducted by RVSM compliant aircraft. For each year of delay, we estimate that approximately \$394 million dollars in fuel savings will be lost. In addition, air traffic control enhancements such as enhanced controller flexibility and decreased workload, mitigation of traffic congestion at conflict points, and increased sector throughput will also be delayed. We believe that those operators that do not obtain RVSM authority by the implementation date can operate viably below FL 290 until they obtain RVSM authority.

Also, based on past experience, we believe that a delay in the target implementation date will only result in many operators delaying their own plans to obtain RVSM authority.

For these reasons, we believe that January 20, 2005, should remain the target date for Domestic RVSM implementation.

6. A number of commenters stated that many operators would not start work to obtain RVSM authority until the final rule is published. Since we intend to publish the final rule in June 2003, those operators will only have 18 months to complete the work.

FAA Response: We cannot compel compliance with any rulemaking action until the final rule takes effect; however, there is no prohibition in an operator taking action based on an NPRM. Many operators, including operators that conduct a major percentage of NAS operations, already have significant parts of their fleets RVSM compliant or have begun work to obtain RVSM compliance. In operator surveys conducted during development of the NPRM many operators indicated the intention of having their fleets RVSM ready by late 2004. Many major operators have expressed support for the implementation date stated in the NPRM. Delaying DRVSM implementation would deny benefits to

operators that have aggressively pursued RVSM programs.

7. Some operators opposed DRVSM implementation due to costs and a perception of limited benefits.

FAA Response: We have shown quantified benefits for fuel savings and qualitative benefits for ATC enhancements. The benefit/cost ratio for the period 2002 to 2016 is approximately 6 to 1. RVSM has provided significant benefits in other major world airspaces. We believe that DRVSM is justified.

8. Comments were made questioning the need for aircraft to complete the RVSM compliance process. The commenters proposed that non-compliant aircraft should be allowed to operate at RVSM flight levels.

FAA Response: The FAA and other civil aviation authorities conducted studies of aircraft altitude-keeping performance in preparation for developing regulations and standards for RVSM operation. These studies showed that altitude-keeping at RVSM flight levels was not standardized. The tolerance for errors greater than 300 feet in RVSM airspace is very small. The studies showed that the aircraft population exhibited large errors at an unacceptable rate.

The aircraft RVSM compliance standards published in part 91 Appendix G were established to ensure safety in RVSM operations.

Maintenance

1. Some commenters believe there should be separate rulemaking for RVSM Maintenance program requirements. AEA recommended that we should remove RVSM maintenance requirements from part 91, Appendix G and related FAA RVSM guidance material and publish them in regulations with more general applicability. The rationale was that RVSM operations would become standard operation rather than a special operation.

FAA response: Since initial RVSM implementation in the North Atlantic five years ago, basic standards for maintenance programs have been provided in part 91, Appendix G. In addition, specific provisions for aircraft RVSM systems have been published in the RVSM compliance packages approved by certification authorities for individual aircraft types or groups.

First, RVSM requirements apply to operations between FL 290–410, inclusive. They do not apply to aircraft operating below FL 290. Second, we acknowledge that RVSM may become the standard worldwide in the future for operations between FL 290–410 and in

the future it may be appropriate to consider placing RVSM maintenance requirements in other regulations. At this time, however, RVSM maintenance program requirements are published in Appendix G.

2. AEA states that there is a lack of direction and standardization from FAA Headquarters for maintenance programs.

FAA Response: We have chosen not to arbitrarily limit the ways an operator or the industry may meet RVSM requirements. Since different equipment solutions, based on different error budgets and component tolerances are being used by applicants, maintenance programs will vary.

A single maintenance requirement has been placed on aircraft obtaining RVSM authorization. The requirement is to maintain the aircraft within the specifications of Appendix G. The elements of the maintenance programs are developed during certification of an aircraft's altitude keeping performance. We have chosen not to limit an operator or the industry to a single method of compliance, therefore, elements of the maintenance program will vary.

3. NATA questioned the assertion that RVSM maintenance costs are not significant.

FAA Response: There are two major elements in maintenance programs related to RVSM required aircraft systems. The first is requirements established by aircraft and avionics manufacturers for the basic certification of the aircraft. The second is maintenance requirements approved by certification authorities in the RVSM compliance package for individual aircraft types.

Since March 1997, we have granted RVSM authority to hundreds of operators and approximately 5,400 aircraft including approximately 3,700 general aviation aircraft. Operators have not cited maintenance costs as a major factor in the initial five years of RVSM operations. We anticipate that maintenance costs will lower as service center availability and experience expands.

Military Operations

1. The Department of Defense (DoD) said that it is necessary for the FAA to accommodate the operation of DoD aircraft that could not meet RVSM standards in order to assist the DoD accomplish its operational mission.

FAA Response: The DoD has elected, to the extent possible, to modify its aircraft to meet RVSM standards so that they can operate safely without special accommodation in RVSM airspace. Most large DoD transport and tanker aircraft are already RVSM compliant. The