

procedures to accommodate their activity.

10. The ALPA and APA request detail on ATC procedures for wake turbulence, mountain wave, and guidance on pilot actions for aircraft contingencies such as aircraft system malfunction.

FAA Response: We have established an RVSM Procedures Work Group to review existing procedures and to develop or revise procedures for ATC in the RVSM environment. We have also established a Mountain Wave Activity (MWA) effort that includes representatives from the Air Route Traffic Control Centers where MWA occurs. We will develop procedures and circulate them for comment. We plan to complete this process in the February 2004 timeframe.

11. A number of commenters raised concerns about the increase of enroute traffic below FL 290 after RVSM is implemented. These concerns relate to the concern that a number of aircraft and operators will not complete RVSM compliance work by the proposed implementation date and will be required to operate below FL 290. The concern is that ATC will not be able to effectively manage this increase of traffic at lower levels.

FAA Response: We have played a significant role in implementing RVSM in four major areas of the world. In each of these implementation programs, we projected the number and percentage of flights that would and would not be conducted by RVSM compliant aircraft on the date and time of initial RVSM implementation. The purpose of this effort was to gain confidence that there would not be a major disruption to air traffic control after RVSM was implemented. In this effort, ATC organizations identified a percentage of flights that they believed could be effectively managed below FL 290.

In the Domestic RVSM planning process, we have made the same effort. We have projected the percentage of flights that will be conducted by RVSM compliant aircraft in January 2005. We project that RVSM compliant aircraft will conduct approximately 90 percent of flights in January 2005. We believe that the approximately 10 percent of flights that may be conducted by non-compliant aircraft can be effectively managed for operations below FL 290.

We have conducted traffic simulations to assess the effect of 5 to 15 percent of flights now operating above FL 290 being required to operate below FL 290 and have found the situation to be manageable. We have the option of changing the vertical limits of air traffic sectors if experience indicates

that it is necessary to enhance air traffic control.

12. Some commenters raised concerns that RVSM would induce a significant traffic increase that would affect controller staffing and workload.

FAA Response: Domestic RVSM implementation should not induce an immediate significant increase in air traffic. Experience in previous RVSM implementation programs has shown this to be the case. In addition, the implementation of RVSM has been shown to decrease controller workload. RVSM adds an additional six flight levels to control air traffic. Simulations have shown that by providing an additional six flight levels where aircraft can be operated, RVSM decreases the need for controller intervention to vector aircraft and to climb or descend aircraft to provide separation.

13. One commenter questioned the capability of the Air Traffic Control (ATC) system to accommodate RVSM-induced traffic increases.

FAA Response: First, domestic RVSM should not induce an immediate, significant increase in traffic. ATC systems are adequate to accommodate the projected gradual increase in traffic. Prior to implementation, we will modify ATC systems for operation in an RVSM environment. We are modifying the conflict alert for the application of 1,000-foot vertical separation between FL 290–410. We are modifying controller displays to show the controller when a non-compliant aircraft is in the airspace. We are modifying the flight plan system so that the appropriate information in the equipment block of the operator's flight plan can be displayed to the controller.

14. The NTSB recommended that we should conduct comprehensive controller training that includes simulator training.

FAA Response: We plan to conduct controller training that will include classroom, Computer Based Instruction, and Dynamic Simulation (DYSIM) training.

15. A commenter questioned whether RVSM would enable ATC to more effectively control traffic in weather situations.

FAA Response: It is common in air traffic operations for aircraft to be routed around areas where thunderstorms or severe turbulence is present. The additional six flight levels that RVSM will provide will significantly enhance air traffic control's capability to accomplish this task. The six additional flight levels provide more airspace where aircraft can operate and be separated from other aircraft.

16. One commenter expressed concern that the phrase "Traffic Permitting" attached to the provisions for non-RVSM compliant Lifeguard flights in RVSM airspace and non-compliant aircraft access to FL 430 would limit such flights.

FAA Response: We intend to accommodate Lifeguard flights to the degree possible. "Traffic permitting" simply provides a caveat that the controller may not accommodate such a flight in the event that it cannot be conducted within acceptable safety parameters.

Airworthiness: RVSM Compliance Including Aircraft RVSM Compliance Package Availability

1. A number of commenters raised a concern that aircraft RVSM compliance packages would not be available for all aircraft.

FAA Response: RVSM operations started in the North Atlantic in March 1997. Since that time the FAA and other civil aviation authorities have approved RVSM compliance packages for the large airline and air cargo type aircraft and business aviation type aircraft that conduct the significant majority of operations in domestic airspace. In general, the aircraft manufacturers develop and obtain certification authority approval of compliance packages for aircraft types that they manufacture. Some independent aircraft engineering organization have also developed compliance packages.

We maintain a list of approved RVSM engineering packages on our RVSM documentation Web site. These packages generally take the form of Service Bulletins or Supplemental Type Certificates. The list shows available packages for both large transport aircraft and small commercial and general aviation type aircraft. Using this list of approved packages, we estimate that currently 97.4 percent of all flights are conducted by aircraft with approved RVSM engineering packages. We have observed a significant increase in the availability of RVSM packages in 2002 and anticipates further increase in 2003.

Operators retain the option of having their aircraft approved as a Non-group aircraft. The operator can obtain a Supplemental Type Certificate that applies to a single aircraft or to a small group of aircraft.

Compliance packages are being developed for aircraft that have not previously been available. As an example, non-manufacturer engineering organizations are now developing compliance packages for the Learjet 20 Series. Until recently, there had not been a compliance package projected for