

Issued in Washington, DC, on December 17, 1997.

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[FR Doc. 97-33760 Filed 12-24-97; 8:45 am]

BILLING CODE 4910-13-U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 91

[Docket No. 28870; Amendment No. 91-254]

RIN 2120-AE51

Reduced Vertical Separation Operations

AGENCY: Federal Aviation
Administration (FAA), DOT.

ACTION: Disposition of comments on
final rule.

SUMMARY: On March 27, 1997, the FAA adopted requirements for Reduced Vertical Separation Minimum (RVSM) airspace. The rule provided requirements for operating in airspace between flight level (FL) 290 and FL 410, with assigned altitudes separated by a minimum of 1,000 feet, rather than the 2,000 foot minimum separation previously required above FL 290. The amendment made more tracks and altitudes available for air traffic control to assign to operators, thus increasing efficiency of operations and air traffic capacity. The action maintained a level of safety equal to or greater than that provided by the previous regulations by requiring improved altitude-keeping performance to participate in RVSM. This action is a summary and disposition of comments received on the final rule.

ADDRESSES: The complete docket for the final rule on RVSM may be examined at the Federal Aviation Administration, Office of the Chief Counsel, Attn: Rules Docket (AGC-200), Room 915-G, Docket No. 28870, 800 Independence Ave., SW, Washington, DC 20591, weekdays (except federal holidays) between 9:00 a.m. and 5:00 p.m.

FOR FURTHER INFORMATION CONTACT:
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Administration, 800 Independence
Avenue SW., Washington, DC 20591,
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SUPPLEMENTARY INFORMATION:

Background

With air traffic increasing annually worldwide, FAA airspace planners and

their international counterparts continually study methods of enhancing the air traffic control (ATC) system's ability to accommodate this traffic in a safe and efficient manner. The traffic problem has become particularly acute in the North Atlantic (NAT) airspace, where the number of flight operations increased 30 percent from 1988 through 1992, according to the NAT Traffic Forecasting Group. The forecast indicated that traffic will rise 60 percent over the 1992 level of 228,200 operations by 2005. Currently, 27 percent of operations in the NAT airspace receive clearances on tracks and to altitudes other than those requested by the operators in their filed flight plans because of airspace limitations. These flights are conducted at less than optimum tracks and altitudes for the aircraft, resulting in time and fuel inefficiencies.

One limitation on air traffic management at high altitudes is the required vertical separation. At altitudes lower than FL 290, air traffic controllers can assign aircraft operating under Instrument Flight Rules (IFR) altitudes a minimum of 1,000 feet apart, however, above FL 290, the required vertical separation was a minimum of 2,000 feet prior to this final rule. (Note: Flight levels are stated in digits that represent hundreds of feet. The term flight level is used to describe a surface of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Rather than adjusting altimeters for changes in atmospheric pressure, pilots base altitude readings above the transition altitude (in the United States, 18,000 feet) on this standard reference. FL 290 represents 29,000 feet; FL 310 represents 31,000 feet, and so on.)

The 2,000 ft minimum vertical separation above FL 290 previously restricted the number of flight levels available, even though many more air carrier and general aviation aircraft are capable of high altitude operations now than when the 2000-foot separation standard was established. Flight levels 310, 330, 350, 370, and 390 are flight levels at which aircraft crossing between North America and Europe operate most economically, thus causing congestion at peak hours. Now, with the issuance of the RVSM final rule, air traffic can make available other flight levels, such as 320, 340, 360, and 380. Exhaustive technical studies showed that a 1,000 ft minimum vertical separation was both feasible and safe. The solution was based on marked improvement in altitude-keeping technology and provided relief from the fuel and time inefficiencies seen in the North Atlantic

Minimum Navigation Performance Specifications (NAT MNPS) airspace prior to the issuance of the RVSM final rule.

Discussion of Comments

The FAA received three comments on the RVSM final rule.

The first commenter, the Air Line Pilots' Association (ALPA), states that some pilots have been receiving traffic advisories (TA's) from their Traffic Alert and Collision Avoidance Systems (TCAS). The TA's have been encountered between same direction aircraft separated by 1000 feet, that are in close longitudinal proximity to each other with similar cruising speeds. ALPA writes that pilots have reported TA's lasting as long as twenty minutes, requiring innovative actions to eliminate them. They point out a lack of defined procedures for handling annoying TA's. Although ALPA is not aware of an occurrence, they believe the current TCAS logic leaves open the possibility of a disruptive long duration resolution advisory (RA) in the RVSM environment. Their concern is the possibility that this type of event could cause a serious problem in RVSM airspace from the close proximity of traffic and pilot training that requires compliance with RA commands.

ALPA's second area of concern is wake vortex encounters. Pilots have reported numerous encounters with turbulence produced by B-747 and B-777 aircraft using RVSM separation. Although ALPA is not aware of any serious cases reported, these operational characteristics did not exist when the 2000 foot standard was in use. ALPA points out the absence of procedures to help pilots avoid or exit areas of descending vortex.

ALPA recommends the development of an operations plan by the North Atlantic Systems Planning Group (NATSPG) which would provide procedures that could resolve both the TCAS and wake vortex problems. Some suggestions included lateral offset, Mach number change so as to change longitudinal geometries, and planned offset of each odd or even flight level.

ALPA also suggests a centralized data collecting effort that ensures the reporting of TCAS and wake vortex events. They believe the two problems could best be evaluated through the collection of data for analysis and processing.

The FAA appreciates ALPA's comments regarding the effect of RVSM on TCAS operations. The FAA, in conjunction with the other North Atlantic air traffic service (ATS) providers has requested that the ARINC

Corporation conduct a study of TCAS in NAT RVSM airspace. (ARINC already provides contract support to the FAA TCAS Program Office as well as the NATSPG). The purpose of this study is to better understand the parameters that can lead to multiple traffic alerts and also to understand better the performance of TCAS change 7 in the RVSM environment. This study began in September 1997.

In regards to wake turbulence encounters, the FAA, in coordination with the NAT ATS providers, has published a contingency procedure that gives a pilot countering wake turbulence the option of offsetting from the track to avoid the turbulence. This procedure has been coordinated with the International Federation of Air Line Pilots' Association (IFALPA) and was published by the NAT ATS providers in September, 1997.

The second commenter, National Air Transportation Association (NATA), states concern that future expansion of the RVSM operational altitudes would not address the hundreds of business aircraft currently operating over the North Atlantic. NATA's concern comes from "aircraft manufacturers to provide support for upgrading a previously manufactured aircraft's systems to meet RVSM specifications." NATA also believes that a substantial financial investment is required to meet RVSM specifications, and that expenditure is beyond the ability of many aircraft operators.

The FAA will be working with the user community to develop a position on the expansion of RVSM flight levels in the NAT. A U.S. position on this issue will be needed for the December 1997 meeting of the NAT Implementation Managers' Group. To accomplish this, the FAA held a meeting of the RVSM Steering Group in September 1997. At this meeting, the user community, including NATA, was given the opportunity to express their views on RVSM expansion. There will also be a follow-up meeting in December, 1997. Also, the International Business Aviation Council has been given the opportunity to provide a representative to the December meeting. A major issue to be addressed is the readiness of the business aircraft fleet to operate within RVSM.

The third commenter, an individual pilot, believes the implementation of RVSM is too broad. The commenter asked why the program was not implemented in 'The Tracks' first. Then asked, why is there an absence of a 'Non RVSM' corridor similar to the VFR corridor in Los Angeles.

In response, the final rule provided for the phased implementation of RVSM over the North Atlantic between FL 330 and FL 370 initially. Other non-RVSM equipped aircraft are free to operate above or below the RVSM altitudes. The FAA has determined that the benefits of the increased efficiency within the RVSM airspace far outweigh the inconvenience this rule may impose on a small percentage of aircraft without the needed equipment.

Conclusion

After consideration of the comments submitted in response to the final rule, the FAA has determined that no further rulemaking action is necessary. Amendment 91-254 remains in effect as adopted.

Issued in Washington, DC on December 19, 1997.

Jane F. Garvey,
Administrator.

[FR Doc. 97-33753 Filed 12-24-97; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 97

[Docket No. 29074; Amdt. No. 1840]

RIN 2120-AA65

Standard Instrument Approach Procedures; Miscellaneous Amendments

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment establishes, amends, suspends, or revokes Standard Instrument Approach Procedures (SIAP's) for operations at certain airports. These regulatory actions are needed because of the adoption of new or revised criteria, or because of changes occurring in the National Airspace System, such as the commissioning of new navigational facilities, addition of new obstacles, or changes in air traffic requirements. These changes are designed to provide safe and efficient use of the navigable airspace and to promote safe flight operations under instrument flight rules at the affected airports.

DATES: An effective date for such SIAP is specified in the amendatory provisions.

Incorporation by reference-approved by the Director of the Federal Register on December 31, 1980, and reapproved as of January 1, 1982.

ADDRESSES: Availability of matters incorporated by reference in the amendment is as follows:

For Examination

1. FAA Rules Docket, FAA Headquarters Building, 800 Independence Avenue, SW., Washington, DC 20591;
2. The FAA Regional Office of the region in which the affected airport is located; or
3. The Flight Inspection Area Office which originated the SIAP.

For Purchase

Individual SIAP copies may be obtained from:

1. FAA Public Inquiry Center (APA-200), FAA Headquarters Building, 800 Independence Avenue, SW., Washington, DC 20591; or
2. The FAA Regional Office of the region in which the affected airport is located.

By Subscription

Copies of all SIAP's, mailed once every 2 weeks, are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

FOR FURTHER INFORMATION CONTACT: Paul J. Best, Flight Procedures Standards Branch (AFS-420), Technical Programs Division, Flight Standards Service, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; Telephone (202) 267-8277.

SUPPLEMENTARY INFORMATION: This amendment to part 97 of the Federal Aviation Regulations (14 CFR part 97) establishes, amends, suspends, or revokes SIAP's. The complete regulatory description of each SIAP is contained in official FAA form documents which are incorporated by reference in this amendment under 5 U.S.C. 552(a), 14 CFR part 51, and § 14 CFR 97.20 of the Federal Aviation Regulations (FAR). The applicable FAA Forms are identified as FAA Form 8260-5. Materials incorporated by reference are available for examination or purchase as stated above.

The large number of SIAP's, their complex nature, and the need for a special format make their verbatim publication in the **Federal Register** expensive and impractical. Further, airmen do not use the regulatory text of the SIAP's, but refer to their graphic depiction on charts printed by publishers of aeronautical materials. Thus, the advantages of incorporation by reference are realized and publication of the complete description of each SIAP contained in FAA form