

APPENDIX G TO PART 91—OPERATIONS IN
REDUCED VERTICAL SEPARATION
MINIMUM (RVSM) AIRSPACE

Section 1. Definitions

Reduced Vertical Separation Minimum (RVSM) Airspace. Within RVSM airspace, air traffic control (ATC) separates aircraft by a minimum of 1,000 feet vertically between flight level (FL) 290 and FL 410 inclusive. RVSM airspace is special qualification airspace; the operator and the aircraft used by the operator must be approved by the Administrator. Air-traffic control notifies operators of RVSM by providing route planning information. Section 8 of this appendix identifies airspace where RVSM may be applied.

RVSM Group Aircraft. Aircraft within a group of aircraft, approved as a group by the Administrator, in which each of the aircraft satisfy each of the following:

- (a) The aircraft have been manufactured to the same design, and have been approved under the same type certificate, amended type certificate, or supplemental type certificate.
- (b) The static system of each aircraft is installed in a manner and position that is the same as those of the other aircraft in the group. The same static source error correction is incorporated in each aircraft of the group.
- (c) The avionics units installed in each aircraft to meet the minimum RVSM equipment requirements of this appendix are:
 - (1) Manufactured to the same manufacturer specification and have the same part number; or
 - (2) Of a different manufacturer or part number, if the applicant demonstrates that the equipment provides equivalent system performance.

RVSM Nongroup Aircraft. An aircraft that is approved for RVSM operations as an individual aircraft.

RVSM Flight envelope. An RVSM flight envelope includes the range of Mach number, weight divided by atmospheric pressure ratio, and altitudes over which an aircraft is approved to be operated in cruising flight within RVSM airspace. RVSM flight envelopes are defined as follows:

- (a) The *full RVSM flight envelope* is bounded as follows:
 - (1) The altitude flight envelope extends from FL 290 upward to the lowest altitude of the following:
 - (i) FL 410 (the RVSM altitude limit);
 - (ii) The maximum certificated altitude for the aircraft; or
 - (iii) The altitude limited by cruise thrust, buffet, or other flight limitations.
 - (2) The airspeed flight envelope extends:
 - (i) From the airspeed of the slats/flaps-up maximum endurance (holding) airspeed, or

the maneuvering airspeed, whichever is lower;

- (ii) To the maximum operating airspeed (V_{mo}/M_{mo}), or airspeed limited by cruise thrust buffet, or other flight limitations, whichever is lower.

(3) All permissible gross weights within the flight envelopes defined in paragraphs (1) and (2) of this definition.

(b) The *basic RVSM flight envelope* is the same as the full RVSM flight envelope except that the airspeed flight envelope extends:

- (1) From the airspeed of the slats/flaps-up maximum endurance (holding) airspeed, or the maneuver airspeed, whichever is lower;
- (2) To the upper Mach/airspeed boundary defined for the full RVSM flight envelope, or a specified lower value not less than the long-range cruise Mach number plus .04 Mach, unless further limited by available cruise thrust, buffet, or other flight limitations.

Section 2. Aircraft Approval

(a) An operator may be authorized to conduct RVSM operations if the Administrator finds that its aircraft comply with this section.

(b) The applicant for authorization shall submit the appropriate data package for aircraft approval. The package must consist of at least the following:

- (1) An identification of the RVSM aircraft group or the nongroup aircraft;
- (2) A definition of the RVSM flight envelopes applicable to the subject aircraft;
- (3) Documentation that establishes compliance with the applicable RVSM aircraft requirements of this section; and
- (4) The conformity tests used to ensure that aircraft approved with the data package meet the RVSM aircraft requirements.

(c) *Altitude-keeping equipment: All aircraft.* To approve an aircraft group or a nongroup aircraft, the Administrator must find that the aircraft meets the following requirements:

- (1) The aircraft must be equipped with two operational independent altitude measurement systems.
- (2) The aircraft must be equipped with at least one automatic altitude control system that controls the aircraft altitude—
 - (i) Within a tolerance band of ± 65 feet about an acquired altitude when the aircraft is operated in straight and level flight under nonturbulent, nongust conditions; or
 - (ii) Within a tolerance band of ± 130 feet under nonturbulent, nongust conditions for aircraft for which application for type certification occurred on or before April 9, 1997 that are equipped with an automatic altitude control system with flight management/performance system inputs.
- (3) The aircraft must be equipped with an altitude alert system that signals an alert