Parameters	Range	Installed system [1] minimum accuracy (to recovered data)	Sampling interval (per second)	Resolution [4] read out
Thrust Reverser, Each Engine (Discrete).	Analog 0–100% range	±3°	1	1%[3]
	Stowed or full reverse.			
Spoiler/Speedbrake (Discrete).	Stowed or out	.....	1.	
Autopilot Engaged (Discrete).	Engaged or Disengaged	.....	1.	

[1] When data sources are aircraft instruments (except altimeters) of acceptable quality to fly the aircraft the recording system excluding these sensors (but including all other characteristics of the recording system) shall contribute no more than half of the values in this column.
[2] If data from the altitude encoding altimeter (100 ft. resolution) is used, then either one of these parameters should also be recorded. If however, altitude is recorded at a minimum resolution of 25 feet, then these two parameters can be omitted.
[3] Per cent of full range.
[4] This column applies to aircraft manufactured after October 11, 1991.

[Doc. No. 18334, 54 FR 34327, Aug. 18, 1989]

APPENDIX F TO PART 91—HELICOPTER FLIGHT RECORDER SPECIFICATIONS

Parameters	Range	Installed system [1] minimum accuracy (to recovered data)	Sampling interval (per second)	Resolution 3 read out
Relative Time (From Recorded on Prior to Takeoff).	4 hr minimum	±0.125% per hour	1	1 sec.
Indicated Airspeed	VM in to VD (KIAS) (minimum airspeed signal attainable with installed pilot-static system).	±5% or ±10 kts., whichever is greater.	1	1 kt.
Altitude	−1,000 ft. to 20,000 ft. pressure altitude.	±100 to ±700 ft. (see Table 1, TSO C51–a).	1	25 to 150 ft.
Magnetic Heading	360°	±5°	1	1°
Vertical Acceleration ..	−3g to +6g	±0.2g in addition to ±0.3g maximum datum.	4 (or 1 per second where peaks, ref. to 1g are recorded).	0.05g.
Longitudinal Acceleration.	±1.0g	±1.5% max. range excluding datum error of ±5%.	2	0.03g.
Pitch Attitude	100% of usable range	±2°	1	0.8°
Roll Attitude	±60 or 100% of usable range, whichever is greater.	±2°	1	0.8°
Altitude Rate	±8,000 fpm	±10% Resolution 250 fpm below 12,000 ft. indicated.	1	250 fpm below 12,000.
Engine Power, Each Engine				
Main Rotor Speed	Maximum Range	±5%	1	1%2.
Free or Power Turbine.	Maximum Range	±5%	1	1%2.
Engine Torque	Maximum Range	±5%	1	1%2.
Flight Control Hydraulic Pressure				
Primary (Discrete)	High/Low	.....	1.	
Secondary—if applicable (Discrete).	High/Low	.....	1.	
Radio Transmitter Keying (Discrete).	On/Off	.....	1.	
Autopilot Engaged (Discrete).	Engaged or Disengaged	.....	1.	
SAS Status-Engaged (Discrete).	Engaged or Disengaged	.....	1.	
SAS Fault Status (Discrete).	Fault/OK	.....	1.	
Flight Controls				
Collective	Full range	±3%	2	1%2.
Pedal Position	Full range	±3%	2	1%2.
Lat. Cyclic	Full range	±3%	2	1%2.

Parameters	Range	Installed system [1] minimum accuracy (to recovered data)	Sampling interval (per second)	Resolution 3 read out
Long. Cyclic	Full range	±3%	2	1%2.
Controllable Stabilator Position.	Full range	±3%	2	1%2.

[1] When data sources are aircraft instruments (except altimeters) of acceptable quality to fly the aircraft the recording system excluding these sensors (but including all other characteristics of the recording system) shall contribute no more than half of the values in this column.
[2] Per cent of full range.
[3] This column applies to aircraft manufactured after October 11, 1991.

[Doc. No. 18334, 54 FR 34328, Aug. 18, 1989; 54 FR 41211, Oct. 5, 1989; 54 FR 53036, Dec. 26, 1989]

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;