Parameters	Range	Installed system [1] minimum accuracy (to recovered data)	Sampling interval (per second)	Resolution [4] read out
Prop. speed and Torque (Sample Once/Sec as Close together as Practicable).	.....	.....	1 (prop Speed) ..... 1 (torque)	1%[3] 1%[3]
Altitude Rate [2] (need depends on altitude resolution).	±8,000 fpm	±10%. Resolution 250 fpm below 12,000 ft. indicated.	1	250 fpm. below 12,000
Angle of Attack [2] (need depends on altitude resolution).	−20° to 40° or 100% of usable range.	±2°	1	0.8%[3]
Radio Transmitter Keying (Discrete).	On/Off	.....	1.	
TE Flaps (Discrete or Analog).	Each discrete position (U, D, T/O, AAP) OR.	.....	1.	
LE Flaps (Discrete or Analog).	Analog 0–100% range	±3%	1	1%[3]
	Each discrete position (U, D, T/O, AAP) OR.	.....	1.	
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.
[5] For Pitch Control Position only, for all aircraft manufactured on or after April 6, 2012, the sampling interval (per second) is 8. Each input must be recorded at this rate. Alternately sampling inputs (interleaving) to meet this sampling interval is prohibited.

[Doc. No. 18334, 54 FR 34327, Aug. 18, 1989, as amended by Amdt. 91–300, 73 FR 12565, Mar. 7, 2008; 73 FR 15280, Mar. 21, 2008; Amdt. 91–313, 75 FR 17046, Apr. 5, 2010]

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.

Parameters	Range	Installed system [1] minimum accuracy (to recovered data)	Sampling interval (per second)	Resolution 3 read out
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 [4]	Full range	±3%	2	1%2.
Pedal Position [4]	Full range	±3%	2	1%2.
Lat. Cyclic [4]	Full range	±3%	2	1%2.
Long. Cyclic [4]	Full range	±3%	2	1%2.
Controllable Stabilator Position [4].	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.
[4] For all aircraft manufactured on or after April 6, 2012, the sampling interval per second is 4.

[Doc. No. 18334, 54 FR 34328, Aug. 18, 1989; 54 FR 41211, Oct. 5, 1989; 54 FR 53036, Dec. 26, 1989; Amdt. 91–300, 73 FR 12565, Mar. 7, 2008; 73 FR 15280, Mar. 21, 2008; Amdt. 91–313, 75 FR 17046, Apr. 5, 2010]

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: