

## APPENDIX F TO PART 91—HELICOPTER FLIGHT RECORDER SPECIFICATIONS

Parameters	Range	Installed system <sup>1</sup> minimum accuracy (to recovered data)	Sampling interval (per second)	Resolution <sup>3</sup> 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.
<i>Engine Power, Each Engine</i>				
Main Rotor Speed .....	Maximum Range .....	±5% .....	1 .....	1% <sup>2</sup> .
Free or Power Turbine.	Maximum Range .....	±5% .....	1 .....	1% <sup>2</sup> .
Engine Torque .....	Maximum Range .....	±5% .....	1 .....	1% <sup>2</sup> .
<i>Flight Control Hydraulic Pressure</i>				
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.	
<i>Flight Controls</i>				
Collective <sup>4</sup> .....	Full range .....	±3% .....	2 .....	1% <sup>2</sup> .
Pedal Position <sup>4</sup> .....	Full range .....	±3% .....	2 .....	1% <sup>2</sup> .
Lat. Cyclic <sup>4</sup> .....	Full range .....	±3% .....	2 .....	1% <sup>2</sup> .
Long. Cyclic <sup>4</sup> .....	Full range .....	±3% .....	2 .....	1% <sup>2</sup> .
Controllable Stabilator Position <sup>4</sup> .	Full range .....	±3% .....	2 .....	1% <sup>2</sup> .

<sup>1</sup> 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.

<sup>2</sup> Per cent of full range.

<sup>3</sup> This column applies to aircraft manufactured after October 11, 1991.

<sup>4</sup> For all aircraft manufactured on or after April 6, 2012, the sampling interval per second is 4.

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