

aviation as approved by the Administrator; or

(b) Have a power source that was manufactured before July 30, 2004, and been found by the FAA to be equivalent to a power source that meets the Technical Standard Order requirements of paragraph (a) of this section.

3. Be maintained in accordance with the manufacturer's specifications.

[Doc. No. FAA-2000-7119, 66 FR 19044, Apr. 12, 2001, as amended by Amdt. 121-280, 69 FR 19762, Apr. 14, 2004; Amdt. 121-309, 70 FR 15196, Mar. 24, 2005]

APPENDIX B TO PART 121—AIRPLANE FLIGHT RECORDER SPECIFICATION

Parameters	Range	Accuracy sensor input to DFDR readout	Sampling interval (per second)	Resolution ⁴ readout
Time (GMT or Frame Counter) (range 0 to 4095, sampled 1 per frame).	24 Hrs	±0.125% Per Hour	0.25 (1 per 4 seconds).	1 sec.
Altitude	− 1,000 ft to max certified altitude of aircraft.	±100 to ±700 ft (See Table 1, TSO-C51a).	1	5' to 35' ¹
Airspeed	50 KIAS to V _{so1} and V _{so} to 1.2V _D .	±5%, ±3%	1	1 kt.
Heading	360°	±2°	1	0.5°
Normal Acceleration (Vertical)	−3g to +6g	±1% of max range excluding datum error of ±5%.	8	0.01g.
Pitch Attitude	±75°	±2°	1	0.5°
Roll Attitude	±180°	±2°	1	0.5°
Radio Transmitter Keying	On-Off (Discrete)	±2°	±2%	
Thrust/Power on Each Engine	Full Range Forward	±2°	1 (per engine) ...	0.2% ²
Trailing Edge Flap or Cockpit Control Selection.	Full Range or Each Discrete Position.	±3° or as Pilot's Indicator	0.5	0.5% ²
Leading Edge Flap or Cockpit Control Selection.	Full Range or Each Discrete Position.	±3° or as Pilot's Indicator	0.5	0.5% ²
Thrust Reverser Position	Stowed, In Transit, and Reverse (Discrete).	.....	1 (per 4 seconds per engine).	
Ground Spoiler Position/Speed Brake Selection.	Full Range or Each Discrete Position.	±2% Unless Higher Accuracy Uniquely Required.	1	0.2% ² .
Marker Beacon Passage	Discrete .....	.....	1	
Autopilot Engagement	Discrete .....	.....	1	
Longitudinal Acceleration	±1g	±1.5% max range excluding datum error of ±5%.	4	0.01g.
Pilot Input and/or Surface Position—Primary Controls (Pitch, Roll, Yaw) ³ .	Full Range	±2° Unless Higher Accuracy Uniquely Required.	1	0.2% ² .
Lateral Acceleration	±1g	±1.5% max range excluding datum error of ±5%.	4	0.01g.
Pitch Trim Position	Full Range	±3% Unless Higher Accuracy Uniquely Required.	1	0.3% ² .
Glideslope Deviation	±400 Microamps	±3%	1	0.3% ² .
Localizer Deviation	±400 Microamps	±3%	1	0.3% ² .
AFCS Mode and Engagement Status.	Discrete .....	.....	1	
Radio Altitude	−20 ft to 2,500 ft	±2 Ft or ±3% Whichever is Greater Below 500 Ft and ±5% Above 500 Ft.	1	1 ft + 5% ² above 500'.
Master Warning	Discrete .....	.....	1	
Main Gear Squat Switch Status.	Discrete .....	.....	1	
Angle of Attack (if recorded directly)..	As installed	As installed	2	0.3% ²
Outside Air Temperature or Total Air Temperature..	−50° C to +90° C	±2° c	0.5	0.3° c
Hydraulics, Each System Low Pressure.	Discrete .....	.....	0.5	or 0.5% ²
Groundspeed.	As installed	Most Accurate Systems Installed (IMS Equipped Aircraft Only).	1	0.2% ²

If additional recording capacity is available, recording of the following parameters is recommended. The parameters are listed in order of significance:

Drift Angle	When available, As installed.	As installed	4	
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Parameters	Range	Accuracy sensor input to DFDR readout	Sampling interval (per second)	Resolution ⁴ readout
Wind Speed and Direction	When available, As installed.	As installed	4	
Latitude and Longitude	When available, As installed.	As installed	4	
Brake pressure/Brake pedal position.	As installed	As installed	1	
Additional engine parameters:				
EPR	As installed	As installed	1 (per engine) ..	
N1	As installed	As installed	1 (per engine) ..	
N2	As installed	As installed	1 (per engine) ..	
EGT	As installed	As installed	1 (per engine) ..	
Throttle Lever Position	As installed	As installed	1 (per engine) ..	
Fuel Flow	As installed	As installed	1 (per engine) ..	
TCAS:				
TA	As installed	As installed	1	
RA	As installed	As installed	1	
Sensitivity level (as selected by crew).	As installed	As installed	2	
GPWS (ground proximity warning system).	Discrete .....	.....	1	
Landing gear or gear selector position.	Discrete .....	.....	0.25 (1 per 4 seconds).	
DME 1 and 2 Distance	0–200 NM;	As installed	0.25	1 mi.
Nav 1 and 2 Frequency Selection.	Full range	As installed	0.25	

¹ When altitude rate is recorded. Altitude rate must have sufficient resolution and sampling to permit the derivation of altitude to 5 feet.

² Per cent of full range.

³ For airplanes that can demonstrate the capability of deriving either the control input on control movement (one from the other) for all modes of operation and flight regimes, the “or” applies. For airplanes with non-mechanical control systems (fly-by-wire) the “and” applies. In airplanes with split surfaces, suitable combination of inputs is acceptable in lieu of recording each surface separately.

⁴ This column applies to aircraft manufactured after October 11, 1991.

[Doc. No. 25530, 53 FR 26147, July 11, 1988; 53 FR 30906, Aug. 16, 1988]

APPENDIX C TO PART 121—C-46
NONTRANSPORT CATEGORY AIRPLANES

Cargo Operations

1. *Required engines.* (a) Except as provided in paragraph (b) of this section, the engines specified in subparagraphs (1) or (2) of this section must be installed in C-46 non-transport category airplanes operated at gross weights exceeding 45,000 pounds:

(1) Pratt and Whitney R2800-51-M1 or R2800-75-M1 engines (engines converted from basic model R2800-51 or R2800-75 engines in accordance with FAA approved data) that—

(i) Conform to Engine Specification 5E-8;

(ii) Conform to the applicable portions of the operator’s manual;

(iii) Comply with all the applicable airworthiness directives; and

(iv) Are equipped with high capacity oil pump drive gears in accordance with FAA approved data.

(2) Other engines found acceptable by the FAA Regional Flight Standards Division having type certification responsibility for the C-46 airplane.

(b) Upon application by an operator conducting cargo operations with nontransport category C-46 airplanes between points within the State of Alaska, the appropriate FAA Flight Standards District Office, Alaskan

Region, may authorize the operation of such airplanes, between points within the State of Alaska; without compliance with paragraph (a) of this section if the operator shows that, in its area of operation, installation of the modified engines is not necessary to provide adequate cooling for single-engine operations. Such authorization and any conditions or limitations therefor is made a part of the Operations Specifications of the operator.

2. *Minimum acceptable means of complying with the special airworthiness requirements.* Unless otherwise authorized under §121.213, the data set forth in sections 3 through 34 of this appendix, as correlated to the C-46 non-transport category airplane, is the minimum means of compliance with the special airworthiness requirements of §§121.215 through 121.281.

3. *Susceptibility of material to fire.* [Deleted as unnecessary]

4. *Cabin interiors.* C-46 crew compartments must meet all the requirements of §121.215, and, as required in §121.221, the door between the crew compartment and main cabin (cargo) compartment must be flame resistant.

5. *Internal doors.* Internal doors, including the crew to main cabin door, must meet all the requirements of §121.217.