

PERFORMANCE OF THE ALTIMETER SYSTEM AND ALTITUDE REPORTING SYSTEMS TESTS AND INSPECTIONS REQUIRED BY FAR PART 91.411 SHALL COMPLY WITH THE FOLLOWING:

- (A) NO PERSON MAY OPERATE AN AIRPLANE, OR HELICOPTER, IN CONTROLLED AIRSPACE UNDER IFR UNLESS —
- (1) WITHIN THE PRECEDING 24 CALENDAR MONTHS, EACH STATIC PRESSURE SYSTEM, EACH ALTIMETER INSTRUMENT, AND EACH AUTOMATIC PRESSURE ALTITUDE REPORTING SYSTEM HAS BEEN TESTED AND INSPECTED AND FOUND TO COMPLY WITH APPENDICES E AND F OF PART 43 OF THIS CHAPTER;
 - (2) EXCEPT FOR THE USE OF SYSTEM DRAIN AND ALTERNATE STATIC PRESSURE VALVES, FOLLOWING ANY OPENING AND CLOSING OF THE STATIC PRESSURE SYSTEM, THAT SYSTEM HAS BEEN TESTED AND INSPECTED AND FOUND TO COMPLY WITH PARAGRAPH (A), APPENDIX E, OF PART 43 OF THIS CHAPTER; AND
 - (3) FOLLOWING INSTALLATION OR MAINTENANCE ON THE AUTOMATIC PRESSURE ALTITUDE REPORTING SYSTEM OF THE ATC TRANSPONDER WHERE DATA CORRESPONDENCE ERROR COULD BE INTRODUCED, THE INTEGRATED SYSTEM HAS BEEN TESTED, INSPECTED, AND FOUND TO COMPLY WITH PARAGRAPH (C), APPENDIX E, OF PART 43 OF THIS CHAPTER.

[Docket No. 18334, 54 FR 34308, Aug. 18, 1989, as amended by Amdt. 91-269, 66 FR 41116, Aug. 6, 2001; 72 FR 7739, Feb. 20, 2007]

**I CERTIFY THAT THE ALTIMETER SYSTEM AND ALTITUDE REPORTING SYSTEMS TEST AND INSPECTIONS REQUIRED BY FAR PART 91.411 HAVE BEEN PERFORMED IN ACCORDANCE WITH FAR PART 43 APPENDIX E, *PARA (A), *PARA (B) AND *PARA (C), AT ITS LATEST REVISION/AMENDMENT.
[* DELETE PARA (A), (B) OR (C) WHICHEVER IS NOT APPLICABLE TO THE TEST ABOVE.]**

ALTIMETERS TESTED TO				FT.	
LH MAKE		MODEL		S/N :	
RH MAKE		MODEL		S/N :	
STANDBY ALTIMETER TESTED TO				FT.	
MAKE		MODEL		S/N :	
AIR DATA COMPUTER TESTED TO				Ft.	
NO. 1 MAKE		MODEL		S/N :	
NO. 2 MAKE		MODEL		S/N :	
AIRCRAFT REGISTRATION			AIRCRAFT TYPE		
			AIRCRAFT S/NO.		

NAME	SIGN & APPROVAL	DATE
<hr style="border: 0.5px solid black;"/>	<hr style="border: 0.5px solid black;"/>	<hr style="border: 0.5px solid black;"/>

***NOTE: THE DATA IN THE FOLLOWING ATTACHMENTS IS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE ENGINEER TO REVIEW ALL DATA FROM RELEVANT REFERENCES BEFORE CARRYING OUT THIS TASK.**

14 CFR E43.1. APPENDIX E. PARAGRAPH (A) – STATIC PRESSURE SYSTEM

	YES	NO
(1) ENSURE FREEDOM FROM ENTRAPPED MOISTURE AND RESTRICTIONS		
(2) DETERMINE THAT LEAKAGE IS WITHIN THE TOLERANCES ESTABLISHED IN SEC 23.1325 OR SEC 25.1325 WHICHEVER IS APPLICABLE. <i>(Refer FAR Part 23 Sub-Part F Section 23-1325 & FAR Part 25 Sub-Part F Section 25-1325)</i>		

UNPRESSURIZED AIRCRAFT

INCREASE ALTITUDE IN STATIC SYSTEM TO AN ALTITUDE OF 1000 FT ABOVE THE AIRCRAFT ELEVATION. CLOSE STATIC CONTROL VALVE AND VENT VALVE. RECORD VALUE - VALUE SHOULD NOT EXCEED ALTITUDE DROP OF 100 FT IN THE PERIOD OF ONE MINUTE.

LEAK TEST ALTITUDE LEAK RATE ft / min

PRESSURIZED AIRCRAFT

INCREASE ALTITUDE IN STATIC SYSTEM TO AN ALTITUDE OF MAXIMUM CABIN DIFFERENTIAL. CLOSE STATIC CONTROL VALVE AND VENT VALVE. RECORD LEAK RATE - RATE SHOULD NOT EXCEED 2% OF EQUIVALENT ALTITUDE OF THE MAXIMUM CABIN DIFFERENTIAL OR 100 FT/MIN

$(14.7 - \text{Max Cabin Diff}) \times 2.036 =$ ins Hg

USING FORMULA ABOVE DETERMINE THE LEAK TEST HEIGHT IN ALTITUDE.
(RECORD VALUE IN ins Hg. SEE CONVERSION TABLE FOR ins Hg TO ALTITUDE RELATIONSHIP).

CONVERSION TABLE

Altitude	Pressure (ins Hg)
-1,000	31.018
0	29.921
500	29.385
1,000	28.856
1,500	28.335
2,000	27.821
3,000	26.817
4,000	25.842
6,000	23.978
8,000	22.225
10,000	20.577
12,000	19.029

Altitude	Pressure (ins Hg)
14,000	17.577
16,000	16.216
18,000	14.942
20,000	13.750
22,000	12.636
25,000	11.104
30,000	8.885
35,000	7.041
40,000	5.538
45,000	4.355
50,000	3.425

LEAK TEST ALTITUDE LEAK RATE ft / min

	YES	NO
(3) DETERMINE THAT THE STATIC PORT HEATER, IF INSTALLED, IS OPERATIVE		
(4) ENSURE THAT NO ALTERATIONS OR DEFORMATIONS OF THE AIRFRAME SURFACE HAVE BEEN MADE THAT WOULD AFFECT THE RELATIONSHIP BETWEEN AIR PRESSURE IN THE STATIC PRESSURE SYSTEM AND TRUE AMBIENT STATIC AIR PRESSURE FOR ANY FLIGHT CONDITION.		

NO. 1 ALTIMETER STATIC SYSTEM TEST AND INSPECTION RECORD

MAKE

MODEL

P/N

S/N

SCALE ERROR

ALTITUDE (FT)	READING (FT)	TOLERANCE (FT)	ENCODED ALTITUDE	ENC. ALT. CHANGE OVER (FT)
- 1000		20		
0		20		
500		20		
1000		20		
1500		25		
2000		30		
3000		30		
4000		35		
6000		40		
8000		60		
10 000		80		
12 000		90		
14 000		100		
16 000		110		
18 000		120		
20 000		130		
22 000		140		
25 000		155		
30 000		180		
35 000		205		
40 000		230		
45 000		255		
50 000		280		
55 000		300		

FRICTION TEST

ALTITUDE (FT)	READING (FT)	TOLERANCE (FT)
1000		70
2000		70
3000		70
6000		70
10 000		80
16 000		90
20 000		100
25 000		120
30 000		140
35 000		160
40 000		180
50 000		250

BAROMETRIC SCALE ERROR

* refer to table 1

PRESSURE		READING (ft)	TOLERANCE (ft)
In Hg	mb		
28.10	951.67		25
28.50	965.21		25
29.00	982.15		25
29.50	999.08		25
29.92	1013.31		25
30.50	1032.95		25
30.90	1046.50		25
30.99	1049.54		25

TEST TOLERANCE

LEAK RATE (ft)	READING (ft)	TOLERANCE (ft)
	18,000	100ft/min

HYSTERESIS TEST

	READING (ft)	TOLERANCE (ft)
50% of MAX ALT		75
40% of MAX ALT		75

AFTER EFFECT

AMBIENT PRESSURE	READING (FT)	TOLERANCE (FT)
RESIDUE		30

REMARKS :

NO. 2 ALTIMETER STATIC SYSTEM TEST AND INSPECTION RECORD

MAKE

MODEL

P/N

S/N

SCALE ERROR

ALTITUDE (FT)	READING (FT)	TOLERANCE (FT)	ENCODED ALTITUDE	ENC. ALT. CHANGE OVER
- 1000		20		
0		20		
500		20		
1000		20		
1500		25		
2000		30		
3000		30		
4000		35		
6000		40		
8000		60		
10 000		80		
12 000		90		
14 000		100		
16 000		110		
18 000		120		
20 000		130		
22 000		140		
25 000		155		
30 000		180		
35 000		205		
40 000		230		
45 000		255		
50 000		280		
55 000		300		

FRICTION TEST

ALTITUDE (FT)	READING (FT)	TOLERANCE (FT)
1000		70
2000		70
3000		70
6000		70
10 000		80
16 000		90
20 000		100
25 000		120
30 000		140
35 000		160
40 000		180
50 000		250

BAROMETRIC SCALE ERROR

* refer to table 1

PRESSURE		READING (ft)	TOLERANCE (ft)
In Hg	mb		
28.10	951.67		25
28.50	965.21		25
29.00	982.15		25
29.50	999.08		25
29.92	1013.31		25
30.50	1032.95		25
30.90	1046.50		25
30.99	1049.54		25

TEST TOLERANCE

LEAK RATE (ft)	READING (ft)	TOLERANCE (ft)
	18,000	100ft/min

HYSTERESIS TEST

	READING (ft)	TOLERANCE (ft)
50% of MAX ALT		75
40% of MAX ALT		75

AFTER EFFECT

AMBIENT PRESSURE	READING (FT)	TOLERANCE (FT)
RESIDUE		30

REMARKS :

STANDBY ALTIMETER STATIC SYSTEM TEST AND INSPECTION RECORD

MAKE

MODEL

P/N

S/N

SCALE ERROR

ALTITUDE (FT)	READING (FT)	TOLERANCE (FT)	ENCODED ALTITUDE	ENC. ALT. CHANGE OVER
- 1000		20		
0		20		
500		20		
1000		20		
1500		25		
2000		30		
3000		30		
4000		35		
6000		40		
8000		60		
10 000		80		
12 000		90		
14 000		100		
16 000		110		
18 000		120		
20 000		130		
22 000		140		
25 000		155		
30 000		180		
35 000		205		
40 000		230		
45 000		255		
50 000		280		
55 000		300		

FRICTION TEST

ALTITUDE (FT)	READING (FT)	TOLERANCE (FT)
1000		70
2000		70
3000		70
6000		70
10 000		80
16 000		90
20 000		100
25 000		120
30 000		140
35 000		160
40 000		180
50 000		250

BAROMETRIC SCALE ERROR

* refer to table 1

PRESSURE		READING (ft)	TOLERANCE (ft)
In Hg	mb		
28.10	951.67		25
28.50	965.21		25
29.00	982.15		25
29.50	999.08		25
29.92	1013.31		25
30.50	1032.95		25
30.90	1046.50		25
30.99	1049.54		25

TEST TOLERANCE

LEAK RATE (ft)	READING (ft)	TOLERANCE (ft)
	18,000	100ft/min

HYSTERESIS TEST

	READING (ft)	TOLERANCE (ft)
50% of MAX ALT		75
40% of MAX ALT		75

AFTER EFFECT

AMBIENT PRESSURE	READING (FT)	TOLERANCE (FT)
RESIDUE		30

REMARKS :

- NOTE** :
1. AN ALTITUDE REPORTING SYSTEM TEST MUST BE PERFORMED AFTER ANY ADJUSTMENTS OR INSTALLATION IS MADE WHICH MAY AFFECT THE ALTITUDE REPORTING SYSTEM. PERFORM ALTITUDE REPORTING SYSTEM TEST IF IT IS DUE AND REQUESTED BY THE CUSTOMER.
 2. FOR AIRCRAFT HAVING MODE S ADDRESSES WITHIN THE BLOCK OF ADDRESSED ASSIGNED TO CIVILIAN US AIRCRAFT, THE REGISTRATION NUMBER OF THE AIRCRAFT WILL BE DISPLAYED.
 3. FOR NON US REGISTERED AND MILITARY AIRCRAFT THE MODE S ADDRESS WILL APPEAR AS AT HEXADECIMAL CODE. REFER TO AIRCRAFT LOG BOOK FOR MODE S TRANSPONDER ADDRESS STRAPPING (OR AIRCRAFT SPECIFIC WIRING DIAGRAM). ALL REGISTRATION IS PROCEEDED BY THE LETTER N.
 4. IF A HEXADECIMAL CODE IS DISPLAYED BY A US CIVILREGISTERED AIRCRAFT, THIS IS AN INDICATION OF INCORRECTLY STRAPPED MODE S TRANSPONDER.

TABLE 1 -- PRESSURE-ALTITUDE DIFFERENCE

PRESSURE		ALTITUDE DIFFERENCE (FEET)
INCHES OF HG	MILLIBAR	
28.10	951.67	-1727
28.50	965.21	-1340
29.00	982.15	-863
29.50	999.08	-392
29.92	1013.31	0
30.50	1032.95	+531
30.90	1046.50	+893
30.99	1049.54	+974