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KOLLSMAN INSTRUMENT CO MERRIMACK NH

F/G 1/4

ALTIMETER, PRESSURE KOLLSMAN TYPE A45782 10 001 SERIAL NUMBER 1--ETC(U)

APR 76 J W ANGUS

N00164-75-C-0279

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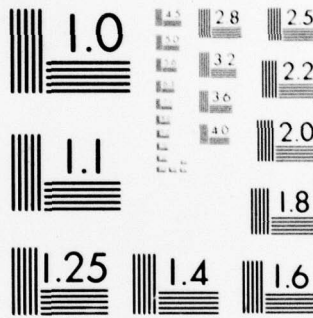
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DDC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963 A

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LEVEL

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B.S.

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TEST REPORT

⑥
ALTIMETER, PRESSURE
Kollsman Type A45782 10 001
Serial No. 101 and 102

Number

Contract N 00164-75-C-0279

⑮
Item: 0002 Test Data

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James W. Angus
6 Apr 1976

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Kollsman Instrument Company, Merrimack, NH.

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Enclosure (1)

ABSTRACT

This TEST REPORT contains information on the following:

ACCESSION for	
NTIS	White Section <input checked="" type="checkbox"/>
DDC	Buff Section <input type="checkbox"/>
UNANNOUNCED	
JUSTIFICATION	<i>on file</i>
BY	
DISTRIBUTION/AVAILABILITY CODES	
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1. ALTIMETER, PRESSURE;

Specification Drawing	A45782 10 001
Test Specification	KTS A45782 10 001
Mil Specification	MIL-A-81851 (AS)
Statement of Work	Section M of contract

2. TEST EQUIPMENT USED DURING PROGRAM; *and*

Precision Pressure Monitor	KM 60-C S/N 110
Test Altimeter	D22061 04 010 S/N 35318
Valve Set	KI TE 8902-003
Temperature Chamber	KI TE 0901-0046
DC Power Supply Vibrator	Power Designs Model 3240
DC Power Supply Lights	Trygon HH32 -1.5
DC Power Supply Potentiometer	Trygon HH 32 -1.5
AC Power Supply Resolver	KI Transformer
Digital Voltmeter (Voltage Ratio)	Dana 5500 S/N 9012664
Resistance Box	Shall Cross #832
Resolver Bridge	Gertsch DRB-3C-4R
AC-VTVM	Instrument Electronics #253

3. TEST PROCEDURE;

← ABSTRACT

- A. Connect the altimeter to the pneumatic lines as shown on Fig. 1 of KTS.
- B. Connect the altimeter to the electrical test equipment as shown on Fig. 2 of KTS.
- C. Using the KTS A45782 10 001 and MIL-A-81851, perform the tests indicated. The following is to aid in conducting the two special tests.

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1. For the baro potentiometers, use care not to exceed the voltage range of the voltage ratio equipment. For the DANA Model 5500, excitation voltage is limited to 11 volts; therefore, use 10 volts across terminals A, H. The wiper load of 100K ohms is to be placed across terminals G, A. Starting at the low end baro stop, set the baro counter to the values shown in the KTS Table 1A, and read and record the Voltage Ratio of the potentiometer wiper to excitation voltage.
2. For the resolver output, using Table III, set the resolver angles on the resolver decade bridge. Slowly cross the indicated test altitude observing the AC-VTVM for a null, using the 50 mv scale. At null, read the altimeter pointer error in feet.

4. TEST RESULTS

The altimeter is essentially the same as the AAU-31/A unit, except for the inclusion of the resolver and baro potentiometer.

The pneumatic operation and accuracy show no degradation from the performance of an AAU-31/A. Particularly noteworthy is the dynamic and static friction of the units which were expected to show some degradation due to the added resolver load.

The potentiometer accuracy is well within definition of 25 feet.

The resolver accuracy has a bandwidth of about 30 feet in all temperatures. It appears that on future units, consideration of rezeroing means be applied if the end item use requires accuracy to 25 feet. The resolution is of the order of 5 feet, which is well within the requirements of S.O.W.

DUAL CAPSULES

DUAL ROCKINGSHAFTS

ALTITUDE RESOLVER

ALTITUDE COUNTER

2ND INTERMEDIATE
SHAFT ASSEMBLY

1ST INTERMEDIATE
SHAFT ASSEMBLY

HANDSTAFF

ALTITUDE POINTER

WORM SECTOR
(ON REAR MECHANISM)

WORM

BEVEL DRIVE

BARO POTENTIOMETER

BARO RING GEAR

BARO COUNTER

BARO KNOB SHAFT

