

# MAINTENANCE INSTRUCTIONS

## AIRCRAFT INSTRUMENTS

(This EO replaces EO 20-1-2G dated 7 Feb 63)

### INSPECTION

- 1 Instrument section facilities are to be utilized to the fullest extent to ensure that aircraft instruments, auto pilot components, and navigation equipments are given calibration checks.
- 2 Calibration checks are required as follows:
  - (a) Prior to installation in aircraft.
  - (b) If reported in error by aircrew after flight, or the accuracy is suspected on a primary or periodic check where calibration is not normally called for.
  - (c) As specified in the applicable aircraft -7A AFEO.
  - (d) As specified in para. 4 of this EO.

### REPLACEMENT

- 3 Instrument components shall be classified repairable and replaced when one of the following conditions arise:
  - (a) On failure.
  - (b) When calibration errors exceed the tolerances laid down in the specific component AFEO during a check called for in paras. 2(b) to (d).
  - (c) When calibration errors exceed tolerances laid down in the specific component AFEO during a pre-installation test.
  - (d) When a component has reached its life in accordance with the applicable aircraft -7A App. "A".
  - (e) As required in para. 4 of this EO.
- 4 Inspection and calibration of instruments fitted to an aircraft which has been involved in an Aircraft Accident or Aircraft Incident shall be governed by the category of the Aircraft damage as follows:
  - (a) A and B Category - All instruments are to be removed and classified repairable.
  - (b) C Category - All compasses and gyro instruments are to be removed for calibration and/or performance check in accordance with the specific component AFEO, and if serviceable, re-installed. Removal and calibration check of remaining instruments will be at the discretion of the CTSO.
  - (c) D Category - Removal and checking of any or all instruments shall be at the discretion of the CTSO, on consideration of such happenings as subjection of shock or power supply malfunction etc.
  - (d) E Category - Removal and checking of any or all instruments shall be at the discretion of the CTSO, on consideration of such happenings as subjection of shock or power supply malfunction etc.

5 Removals and installations of instrument components are to be recorded by serial number in the applicable aircraft form L14-1B to ensure proper entry in the Airframe Component Replacement Record (L14-1) by log control personnel.

6 W-11 tags are to be used in accordance with EO 20-1-2H.

### FIELD REPAIR

7 Except as noted in para. 8, authority is now granted for field repair of any piece of instrument, test or ground handling equipment normally under the jurisdiction of the AIEM superintendent or Group 4A Instrument supervisor. Field repair of hermetically sealed instruments; components that are designated as sealed items in the applicable component EO, and clocks or watches, is not authorized. In any event, the depth of maintenance is to be limited to the extent permitted by the availability of spares, and by the utilization of tools and test equipment already scaled to units.

8 Repairs to the following instruments may be carried out in the field by qualified and trained personnel at the discretion of an AIEM superintendent or group 4A Instrument Supervisor and subject to the availability of test equipment:

(a) Navigation Instruments (Sec 6B) - All Navigation Instruments and components with the exception of liquid filled compasses, (including flux valves) gyros, and pitot/static sealed instruments.

(b) Instrument Components (Sec 6A) - All section 6A instrument components with the exception of dial indicating instruments.

(c) Auto Pilot Components (Sec 6J) - All auto pilot components.

(d) Test Equipment (Sec 6C) - All test equipment.

9 In navigation systems such as R-Theta, ANTAC, and Collins IFS, certain ranges of field maintenance spares are available and units are to use the spares to the fullest extent to repair unserviceable equipment in the field.

#### NOTE

Extreme care is to be exercised when opening instruments in the field to establish if a minor repair will rectify the unserviceability. If rectification is not possible the instrument is to be classified repairable and shipped to the appropriate overhaul contractor in accordance with present procedures. Tampering with internal mechanisms will not be tolerated since evidence of malicious damage will forfeit any warranty involved and will add to the cost of repair and/or overhaul charges.

10 All personnel concerned are to ensure that great care is exercised in the handling and storage of aircraft instruments.

11 Instruments are to remain in their containers until installation in the aircraft except for technical re-inspection or for pre-installation tests, immediately after which they must be replaced in their containers for any subsequent handling. Under no circumstances are instruments to be left lying around unprotected on benches, shelves, etc.

12 Cushioning material, protective covers, spares, and other aids used for shipping instruments are to be left in the container. The containers and accessories are to be used for reshipment of similar items.

13 Repairable instruments must be handled with the same care that is exercised in the handling of serviceable instruments.

ISSUED ON AUTHORITY OF THE CHIEF OF THE AIR STAFF

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