



GOVERNMENT OF INDIA
CIVIL AVIATION DEPARTMENT
DIRECTOR GENERAL OF CIVIL AVIATION

AAC No. 8 of 2017
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AIRWORTHINESS ADVISORY CIRCULAR

Subject: Maintenance of test equipment

1. Introduction:

- 1.1 Rule 57 requires that every aircraft shall be fitted with approved instrument and equipment including radio apparatus as may be specified. Further modern aircraft are fitted with many instruments, equipment whose function is vital to the aircraft operation. These equipment indicate the performance of the various aspects of airframe, engine and system. Any inaccuracy introduced in the indication system will result in incorrect operation of the aircraft, engine and its system. It is, therefore, necessary that such instruments, equipment and other accessories are checked at regular intervals for their correct functioning and indication. For this purpose the instrument, equipment, accessories require overhaul and test with the help of test equipment's which are expected to be accurate and error free during use.
- 1.2 The test equipment/benches are generally set up in accordance with the equipment manufacturers' recommendations. Operators who are approved to carry out overhaul, test and certification of equipment must have proper test equipment, the manuals, and also ensure that such test equipment are kept properly maintained and calibrated at regular intervals. Where no recommendations for calibrations from the manufactures published standards given, tool and equipment must be calibrated from NABL accredited laboratories or laboratories having tractability to national/international standards
- 1.3 This Circular outlines the guidance to be followed for maintenance of test equipment / test benches etc.
- 1.4 It is important to note that this circular is for guidance purpose only and on its own does not change, create, amend or permit deviations from regulatory requirements, nor does it establish minimum standards.

2. Maintenance of Test Equipment

2.1 The test equipment and its serviceability and accuracy is vital as the primary functioning of instrument and equipment depends on the serviceability and the accuracy of the test equipment. The test equipment therefore should be maintained in accordance with the recommendations of the manufacturers given in the manuals. A proper maintenance schedules should be framed so that the equipment is subjected to proper inspection and servicing at regular intervals. The interval of maintenance schedule may be based on the frequency of the use. The test equipment which are not frequently used may require different check than the ones which are frequently used. Accordingly the maintenance schedules may be based on either the calendar period or the hours of operation depending on the amount of work of the operator. Such schedules will have to be prepared by the shop in-charge, approved by the responsible manager of the organization. Copy of the same should be kept amended and updated.

3. Calibration of the Test Equipment

3.1 Apart from maintenance, the test equipment are required to be calibrated with reference to the master gauges/primary standards. Such primary standards are generally available with the national laboratories or the approved test houses established by the various scientific departments of the State Government / Government of India. The operators need not have a primary standard whose cost is very high and which may not be required during day-to-day use. Secondary master gauges could be developed with reference to the primary standards and used in the day-to-day work. A proper record should be maintained of the calibration done and also the next calibration due. A list of all primary standards and secondary standards should be kept in the shop.

4. Certification of Maintenance Schedules and Calibration Equipment

4.1 The maintenance schedules of the test equipment as and when performed should be certified by persons approved by the responsible manager of the organization. Such persons should demonstrate their familiarity with the test equipment, literature and also must provide proof that they are familiar with the job they are required to perform. These persons should also be specifically authorised to carry out calibration check and issue certificate to this effect.

4.2 The Maintenance Organization Exposition (MOE) should indicate the various instruments/equipment calibration period so that all the instruments and the gauges are checked at regular intervals by the persons duly approved as stated in preceding para using the test equipment.

5. Validation of Software of Computers used as Test Equipment

5.1 It is the responsibility of the organization to get appropriate certificate from equipment manufacturer that software which has been supplied with the computer or separately which will give results identical to the values given in specifications of equipment being tested. Procedure should also exist to carry out the validation of software periodically and proper record has to be maintained of such validation checks. BITE or SELF test accuracy should also be clearly indicated. The procedure be documented in respective manual.

6. Standard Room

6.1 Standard Room is established wherein master standards and secondary standards are kept. Only a few dedicated persons are utilised to carry out calibration and test of other gauges and certification thereof. The Standard Room should be kept clean/dust free and proper record of all the test equipment and the gauges available with history of their test and certificates obtained for the test should be available. Such Standard Room will also provide service to other small operators who cannot afford to have such facilities established for few instruments and equipment.

6.2 Non-compliance of the approved standards and / or procedures may result in withdrawal of the approval of the organization for the maintenance, overhaul, repair of the aircraft, aircraft engine and systems and the approval so withdrawn may be only restored after it has been verified by the Regional Airworthiness Office that test equipment have been maintained and calibrated in accordance with the approved programme.

Sd/-
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