

INSTRUMENT & ELECTRICAL WORKSHOP & TEST ROOMS

(This EO replaces EO 20-1-11 dated 15 Mar 60)

GENERAL

1 This EO describes the features recommended for incorporation in unit instrument and electrical workshops and test rooms. Although variations in hangar facilities may prevent strict compliance with the details of this EO, an attempt should be made to follow the instructions described below as closely as prevailing conditions will permit.

2 No attempt has been made to duplicate information included in existing scales of issue. Only the requirements basic in establishing a suitable environment for working with instruments and electrical equipment have been included.

3 The subject matter of this EO has been arbitrarily divided to facilitate description and to eliminate, where possible duplication of descriptive detail.

INSTRUMENT AND ELECTRICAL WORKSHOPS

LOCATION

4 The workshops should be located away from areas subject to high dust concentrations. An internal location with access only from inside the hangar or other enclosing buildings is preferable, but failing that, an area away from parking lots, taxi strips and aircraft parking areas is to be selected. Other factors being equal the shops should be located on a second floor and in or as close as possible, to the hangar in which second line maintenance is carried out.

SPACE

5 The space required will depend on the instrument and electrical workload and the size of the staff employed. In addition to preventing over-crowding, attention should be given to providing a suitable amount of storage space.

FLOORS

6 The floor covering material shall be 1/8" vinyl asbestos floor tile as per EO 175-70B-2.

FINISH

7 Cleanliness and freedom from dust shall be major requirements in Instrument and Electrical Workshops and all construction surfaces shall be smoothly finished to assist these requirements. The colour schedule for walls, floor and ceiling shall be designed to assist in providing the level of illumination outlined in para. 9.

DOORS

8 Door openings shall be sufficiently large to permit entry to test benches and bulky items of test equipment.

LIGHTING

9 Lighting is to be as shadowless as possible and to the industrial standard known as "medium severe foot candle level". Fluorescent lighting of the direct industrial type, providing four watts of light per square foot of illuminated floor area, is to be provided.

POWER

10 Power requirements will depend on the equipment in use. The following facilities should always be provided:-

- (a) 28 volts \pm .5 V DC at 200 amps.
- (b) 115 \pm 10 volts AC 400 \pm 20 cycles 1 PH and 3PH.
- (c) 110 - 220 V at 60 cycles 1 PH.

AIR AND VACUUM

11 Dry compressed air and a source of vacuum should be supplied if required by the equipment in use. The compressed air must be filtered and dried. The vacuum pump and air compressor will be located in a separate room.

TEST EQUIPMENT AND TEST BENCHES

12 Test equipment and test benches used will be those covered by applicable scales. However because of local conditions, local manufacture in accordance with CAP 16, Vol 1, Chapter 6.7, might be necessary for some of the mock-ups required for authorized test procedures.

INSTRUMENT AND ELECTRICAL
CALIBRATION LABORATORY OR TEST ROOM

LOCATION

13 The calibration laboratory is to be separate from the workshops. It should adjoin the workshops and should not be a passage to any other part of the section.

SPACE

14 Sufficient area must be provided to accommodate all the required calibration equipment plus storage facilities for tested equipment.

FLOORS

15 As for Instrument and Electrical Workshops.

FINISH

16 As for Instrument and Electrical Workshops.

DOORS

17 As for Instrument and Electrical Workshops.

LIGHTING

18 As for Instrument and Electrical Workshops.

POWER

19 As for Instrument and Electrical Workshops.

AIR AND VACUUM

20 As for Instrument and Electrical Workshops.

TEST EQUIPMENT AND TEST BENCHES

21 As for Instrument and Electrical Workshops.

VENTILATION

22 Test room windows and doors (if any) leading to the outside of the building shall be sealed and an air trap shall be constructed at the entrance to the room. Walls, floor and ceiling shall be effectively sealed against passage of air by incorporating lock-sealed vapour barrier material in these constructions. The room shall be equipped with an air conditioning unit capable of keeping the air in the room within reasonable tolerances of standard conditions the year round. Standard Air conditions will be:

Temperature 24°C or 75°F
Humidity 50%
Pressure 29.92" of mercury.

23 The air conditioning unit shall be equipped to mechanically filter-out all dust particles of a size 4/1000ths of an inch and upward.

HEATING

24 The room will be provided with some form of radiant heating. Forced air heating will not be permitted. A thermostatic heat control will be incorporated to maintain standard temperatures in the test room year round.

SOUND-PROOF TEST ROOM

PURPOSE

25 A self-contained, sound-proof test room will be provided to house such equipments as tend to create a high noise-level and which may include generator drive units, generators, alternators, pumps, compressors, etc.

LOCATION

26 This room will be located as close as possible to the Instrument and Electrical Workshops and the Instrument and Electrical Test or Calibration Room.

FLOORS

27 As per Instrument and Electrical Workshops.

SOUND ABSORPTION AND FINISH

28 Sound absorption shall be provided as per EO 175-110-2, Part 2, Section 2. Where sound absorption materials are applied as a surface finish, materials used shall assist dust control. Colour requirements shall be the same as for Instrument and Electrical Workshops.

DOORS

29 As per Instrument and Electrical Workshops.

LIGHTING

30 As per Instrument and Electrical Workshops.

POWER

31 Power requirements will depend on the equipment housed in the room. In any case the following will be provided:

- (a) 28 volts DC at 200 amps.
- (b) 110 volts AC 60 cycles 1 PH.
- (c) 550 volts AC.

TEST EQUIPMENT AND TEST BENCHES

32 As for Instrument and Electrical Workshops.

VENTILATION

33 The room will be ventilated by means of an electric fan exhausting to the outside as well as by any windows to the outside that may exist. The fan will be of sufficient size to insure:-

- (a) Proper air circulation at all times of the year and,
- (b) That the temperature in the room never exceeds 90° F or 32° C.

HEATING

34 The room will be provided with some form of radiant heating.

ISSUED ON AUTHORITY OF THE CHIEF OF THE AIR STAFF