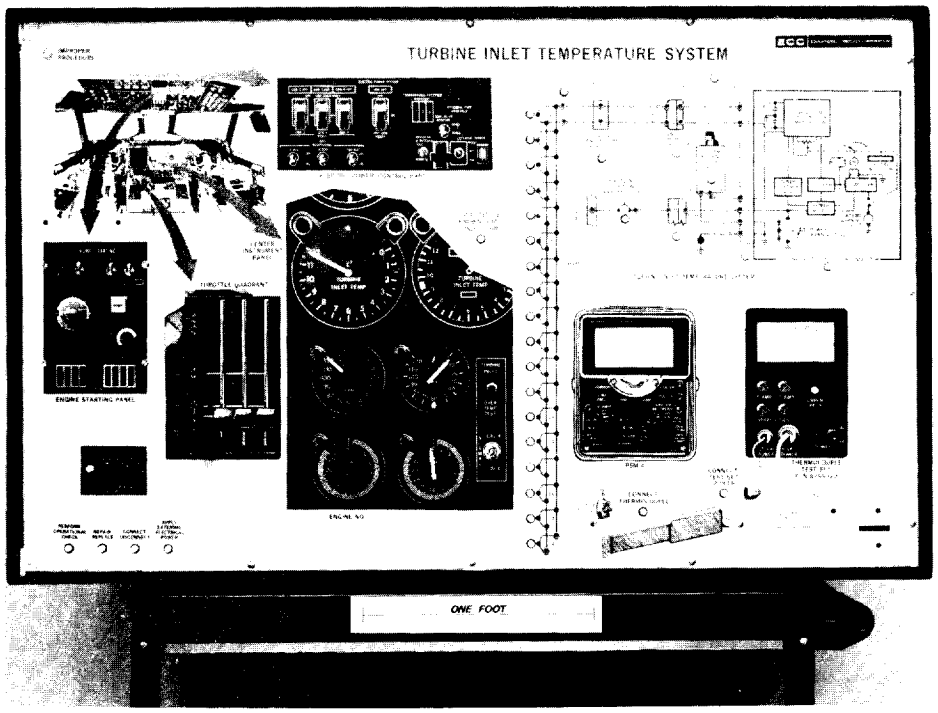
DIRECTORY OF NAVAL TRAINING DEVICES



TURBINE INLET TEMPERATURE SYSTEM T/A, DEVICE 6E18

TRAINING CATEGORY:

BASIC SCIENCE (Electricity)

ORIGINATING AGENCY:

DCNO/AIR

SECURITY CLASSIFICATION:

Device 6E18 is unclassified.

PURPOSE:

The purpose of the training device is to represent the turbine inlet temperature system of carrier fixed wing aircraft in such a manner as to train maintenance personnel in the functions, methods of operation and design theory of the aircraft systems. The training device will enable the student to get classroom experience in performing operational checks and diagnosing and replacing malfunctioning components and circuits.

INTENDED USE:

Training will take place at Aviation Electrician's Mate School. Basic trouble shooting practices are fundamental skills required of Aviation Electrician's Mates and are prerequisites to all electrical maintenance tasks required of AE's. A trainer will provide for the testing of a greater number of trainee discriminations than he would receive using actual aircraft. The troubles described have a degree of difficulty and are similar to actual troubles experienced in the Aviation Electrician's Mate Field.

FUNCTIONAL DESCRIPTION:

Aircraft, powered by turbo shaft engines utilize a turbine inlet temperature indicator system to provide the pilot with a visual indication of the temperature of the gases entering the engine turbine section.

The training device shall be capable of simulating a turbine inlet temperature (TIT) system as close as possible using a multimeter (AN/USM-311) and a thermocouple test set (6799323) for identifying electrical malfunctions. Where in actual systems a wire or component must be dis-

connected to make test measurements, a capability shall be provided to perform this function without actually disconnecting any item. A P-3A aircraft shall be used as a model system for the trainer. The control of the system shall be represented as in actual aircraft.

The trainee shall be able to perform operational and functional checks such as: Thermocouple Continuity Check, Thermocouple Harness Check, and Turgine Inlet Temperature Terminal Block Check.

The trainer shall consist of the following major components:

1. Display Panel - shall depict the operation of the turbine inlet temperature system. Consists of:

A. Pilot/copilots station

B. Turbine inlet temperature system schematic block diagram

C. Support equipment includes the AN/USM-311 multimeter and the Thermocouple high current tester, P/N 6799323, also TIT indicator.

2. Master Console - shall contain student evaluation indicators. The master console shall enable the instructor to insert one of 16 malfunctions into the simulated system.

3. Simulated System Schematic Diagram - shall contain a parts lists and schematic.

4. Protective Cover - made of heavy duty vinyl, equipped with zipper and pocket for manuals.

5. Training Device Clock - shall indicate total time device is connected to power.

An alarm system shall be available to the instructor. The alarm will be triggered by an improper procedure. After counseling the student, a reset button will reset the device. When the alarm is triggered, the training situation shall freeze. The device shall be built with a replace/repair counter which counts every time a trainee attempts a repair/replace action and an elapsed time indicator. These items shall indicate to an instructor if a trainee is trying to analyze the system or is randomly selecting repair/replace actions and the length of time a trainee needs to correct a malfunction.

PHYSICAL INFORMATION:

The dimensions of the trainer display area shall be approximately 1.0 meters long by 0.6 meters high.

Total weight of the trainer display panel shall not exceed 40 Kilograms.

The panel face shall be a light color (white-beige) with components and connecting lines a dark color. All front panel markings shall be covered with a wear resistant coating to prevent marring or obliteration of the markings.

ENVIRONMENTAL CHARACTERISTICS:

The training equipment shall withstand the following climatic conditions:

Temperature

(1) Operating: 15° to 45° C

(2) Nonoperating and Storage: -20° to 65° C

Relative Humidity - up to 95% condensation due to temperature change.

INSTALLATION AREA:

Classroom

POWER REQUIREMENTS:

The trainer is designed to permit operation from a 110/115 volt, 60 Hz power source with a maximum load of 30 amperes.

REFERENCE PUBLICATIONS (NOT SUPPLIED):

1. MIL-HDBK-472 (Maintainability Prediction)
2. NTEC Bulletin 301-2 (Parts, nonstandard; Design Selection, Procedures for)

PERSONNEL:

Instructor: One (1)

Student: One (1) or Two (2)

CONTRACT IDENTIFICATION:

Manufactured by Educational Computer Corp., Orlando, FL under NAVTRASYSCEN Contract No. N61339-78-C-0139.

LOCAL STOCK NUMBER:

6910-LL-C00-4736