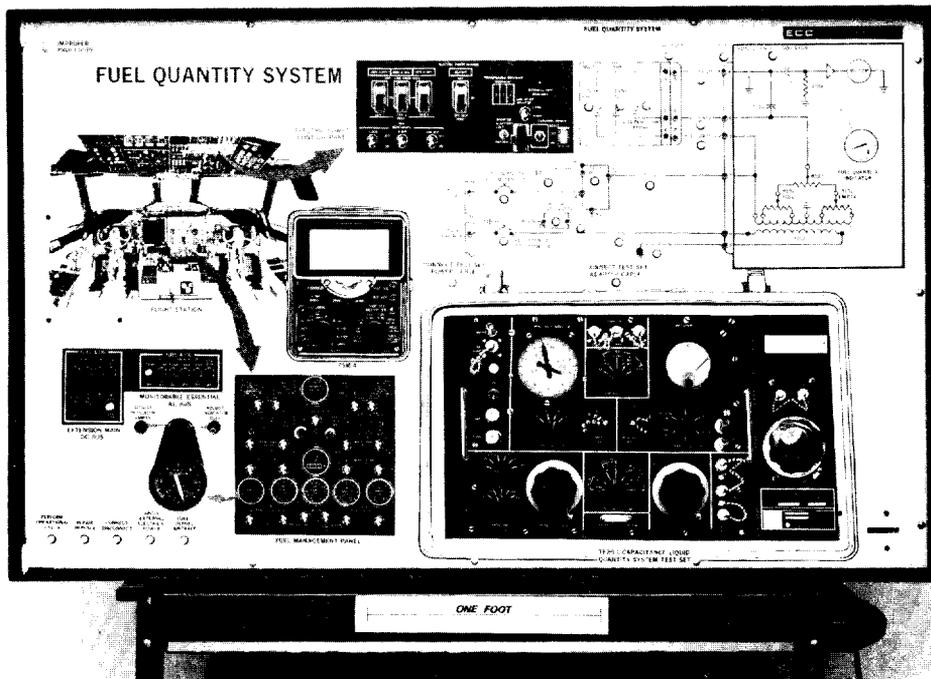


## DIRECTORY OF NAVAL TRAINING DEVICES



### FUEL QUANTITY SYSTEMS T/A, DEVICE 6E22

**TRAINING CATEGORY:**

BASIC SCIENCE (Electricity)

**ORIGINATING AGENCY:**

DCNO/AIR

**SECURITY CLASSIFICATION:**

Device 6E22 is unclassified.

**PURPOSE:**

The purpose of the training device is to represent the fuel quantity systems of carrier fixed wing aircraft. The training device will enable the student to get classroom experience in performing an operational check and diagnosing and replacing malfunctioning components or circuits.

**INTENDED USE:**

The trainees will generally be enlisted personnel, E-3 and below. Training will take place at Aviation Electrician's Mate School. A trainer will provide for the testing of a greater number

of trainee discriminations than would be provided using actual aircraft. The troubles have a degree of difficulty and are similar to actual troubles experienced in the Aviation Electrician's Mate field.

**FUNCTIONAL DESCRIPTION:**

The capacitance type fuel quantity indicating system has a fuel quantity gauge that indicates, in pounds, the amount of fuel in the tanks of the aircraft. The system consists of tank probes, an indicator, indicator test switch, test relay and related wiring. Knowledge of fuel remaining in the fuel tanks is of utmost importance to the pilot for his return to his operating base whether ashore or afloat.

The fuel quantity system trainer shall display all system electrical components and controls required to operate the system as contained in the carrier fixed wing aircraft. A P-3 aircraft shall be used as a model system for the trainer. The control of the system and indications shall be represented as in actual aircraft.

The trainee shall learn to identify and isolate electrical faults by logical trouble shooting pro-

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cedures using a multimeter and a capacitance type liquid quantity system test set (TF-20-1). The trainer will enable the trainee to perform operational checks of calibration procedures and insulation and resistance checks of the fuel quantity of the system.

The trainer shall consist of the following major components:

1. Display Panel - shall depict the operation of the fuel quantity systems. It shall contain pilot/copilot's station, fuel quantity system schematic, PSM-4 multimeter, TF-20-1 capacitance type liquid quantity system test set.
2. Master Console - shall contain student evaluation indicators. The master console shall enable the instructor to insert one of 15 mal-functions into the simulated system.
3. Simulated system schematic and parts list shall be furnished with the trainer.
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. It shall alert the student and instructor when a wrong procedure has been attempted. When the alarm is triggered, the training situation shall freeze with no further operations capable of being performed. A reset button is available to reset the trainer after counseling the student.

The system shall be built with a replace/repair counter which counts everytime a student attempts a repair/replace action, and also an elapsed time indicator. These items shall indicate if a trainee is attempting to analyze the system or is randomly selecting repair/replace actions and the time expended to correct a malfunction.

### PHYSICAL INFORMATION:

The trainer frame structure shall be constructed from an aluminum alloy weldment or welded steel beam components. The dimensions of the trainer display area shall be approximately 1.2 meters long by 0.75 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 the components and connecting lines a dark color. 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.

### PUBLICATIONS FURNISHED:

Operator/Maintenance Manuals

### RELATED TRAINING DEVICES:

6E12 thru 6E20, 6E22, 6E24, 6E25, 11H68/8A

### PERSONNEL:

Instructor: One (1)

Student: One (1) or Two (2)

### CONTRACT IDENTIFICATION:

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

### LOCAL STOCK NUMBER:

6910-LL-C00-4740