

## DIRECTORY OF NAVAL TRAINING DEVICES



### TH-57B COCKPIT PROCEDURES TRAINER, DEVICE 2C67

**TRAINING CATEGORY:**

AVIATION (Cockpit Checkout Procedures)

**ORIGINATING AGENCY:**

DCNO/AIR

**SECURITY CLASSIFICATION:**

Device 2C67 is unclassified.

**PURPOSE:**

To provide student with TH-57B Helicopter cockpit familiarization and engine instrumentation response characteristics.

**INTENDED USE:**

For classroom training of enlisted pilots with little or no helicopter flight hours.

**FUNCTIONAL DESCRIPTION:**

The trainer consists of a trainee station made from a Bell 206 jet ranger cockpit struc-

ture, an instructor station, and an equipment cabinet. The Bell cockpit has been slightly modified to accommodate various trainer operational and nonoperational controls. The instructor station consists of a desk, a terminal with a keyboard, printer, and intercom panel. The intercom panel is mounted behind the desk on a 19" rack mounted equipment cabinet. The computer, power supplies, interface electronics, sound simulation electronics, and power distribution assemblies are also located in the equipment cabinet. This system utilizes a dot matrix printer for making hard copies utilized in program development and diagnostic error printouts.

The trainee station or cockpit structure is a full scale cockpit with controls and instrumentation. It includes the cyclic sticks, foot pedals, landing light switch, UHF radio, VHF radio, and transponder which actuate as in the actual aircraft, but do not have any functional inputs to the interface electronics. All other controls such as the collective stick, throttle, engine starter, fuel valve, hydraulic system, and electrical system are functional.

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The instrument panel contains functional and nonfunctional instruments. Functional instruments include voltmeter, engine oil temperature/pressure, transmission oil temperature/pressure, fuel quantity, generator load, fuel pressure, engine torque, turbine outlet temperature, gas producer, airspeed, rotor/turbine RPM, clock, rate of climb, and altimeter. Non-functional, but replicated instruments include the radar altimeter, horizontal situation indicator, turn/pitch indicator, magnetic compass, and attitude indicator.

A 20-light caution and warning panel is functional and computer controlled. The overhead circuit breaker panel contains some functional breakers that have computer inputs and can be tripped by the computer software via interface electronics.

The pilot/copilot intercom and headsets are functional and can be used to converse with the instructor. Also, an engine, rotor, transmission, and turbine sound simulation is computer generated and mixed into the intercom channel. The instructor has the ability to vary the amplitude of the sound simulation as well as insert certain sounds indicative of helicopter malfunctions.

Pilot trainees can obtain helicopter familiarization by operating engine controls and observing instrumentation responses in two basic modes (normal engine start on-ground, and engine running in normal flight). The instructor can insert via the keyboard any one of 48 helicopter malfunctions which will give corresponding instrument responses for trainee reaction. The system can queue in a maximum of three malfunctions picked by the instructor. The 48 malfunctions fall into six categories, engine, electrical, transmission, fuel, fire, and hydraulic systems. The instructor has the ability to reset, freeze, and start the simulation exercise via the keyboard.

### PHYSICAL INFORMATION:

The floor area needed is: 10' x 12' or 120 square feet. The desk, cabinet, and printer can be positioned in accordance with user needs.

The trainer can be supported by any type of flooring (a raised computer type flooring is not necessary) and equipment weights are:

Trainee Cockpit	-	175 lbs.
Equipment Cabinet		200 lbs.
Desk	-	60 lbs.
Printer	-	45 lbs.

### POWER REQUIREMENTS:

120 VAC, single phase, 60 Hz, 3-wire, 1.2 KVA peak, 2.4 KVA, 20 amps.

### PUBLICATIONS FURNISHED:

Technical Manual NAVTRADEV P-3860 (U).

### PERSONNEL:

Instructor:	One (1) qualified for TH-57B Helicopter Pilot.
Trainees:	Two (2)
Maintenance:	Two (2)

### CONTRACT IDENTIFICATION:

Manufactured by EMS Development Corp., Farmingdale, NY 11735 under NAVTRASYSCEM Contract No. N61339-83-C-0144.

### LOCAL STOCK NUMBER:

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