



FFG-7 PROPULSION ENG CONTROL SYSTEM (PECS), MAINT TRAINER, DEVICE 20H7A

TRAINING CATEGORY:

SURFACE OPERATIONS (SHIP) (Misc)

ORIGINATING AGENCY:

CNET

SECURITY CLASSIFICATION:

Device 20H7A is unclassified.

PURPOSE:

To provide training in both maintenance procedures for PERRY-Class frigate PECS maintenance personnel, and normal and casualty operational procedures for PECS operators.

INTENDED USE:

A permanently installed training facility used to qualify maintenance and operator personnel on the PECS stations.

FUNCTIONAL DESCRIPTION:

The FFG-7 PECS Maintenance Trainer, Device 20H7A, is a one (1) room training facility. The

device contains four (4) shipboard consoles and related equipment, stimulated by a specially programmed digital computer through an I/O interface. The consoles are: Propulsion Control Console (PCC), Electrical Plant Control Console (EPCC), Auxiliary Control Console (ACC) and Local Operating Panel (LOP)/Local Operating Station Instrument Panel (LOSIP). Other shipboard equipment consists of an Engine Control Module (ECM), a Data Logger, a Power Supply Enclosure Assembly (PSEA), two (2) Power Lever Actuators, and five (5) typical sensors.

Instrument movements and responses closely simulate the actual movements and responses of a PECS in all situations and modes.

The PCC, EPCC, ACC and Data Logger are all located in the Central Control Station (CCS) aboard ship and are arranged in the trainer as aboard the frigate. The LOP and LOSIP (located near the engine aboard ship) are in the same training room but separated from CCS equipment.

The computer, peripherals, and interface cabinet are grouped together in the trainer. For demonstration purposes, a special Sensor Interface

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Panel, located on the interface cabinet, is available to illustrate the operation of various shipboard sensors. A two (2) channel audio intercom system connects trainee consoles, instructor console, and computer area.

The training environment is controlled and trainee responses are evaluated from an instructor's console, in view of all trainee stations. Control functions normally located at the ship's bridge are located at the instructor station so that the instructor/operator can instruct in engine control transfer. Initial problem selection, through choice of operating parameters (initial conditions) and insertion of casualties, is also accomplished at the instructor's console. Trainer operation can be frozen, or reset to the beginning of the training exercise. Provision also is made for storing parameters (snapshot) to allow the instructor to return the trainer to a chosen point in time.

The PECS trainer is capable of operating in two (2) modes: normal and casualty. In the normal mode, all ship systems operate without machinery casualties. In the casualty mode, ship system equipment casualties may be selected by the instructor/operator to assess trainee proficiency and operating technique.

EQUIPMENT REQUIRED (NOT SUPPLIED):

Pulse Generator - Used at Sensor Interface Panel

POWER REQUIREMENTS:

Input Characteristics:

120/208 VAC, 60 Hz, 40 KVA, Three-Phase, 4-Wire wye, grounded neutral.

Maximum Starting Power:

35.31 KVA, 90 amps/phase

INSTALLATION REQUIREMENTS:

Minimum Installation Area:

1,200 Sq. Ft, plus storage area and offline maintenance work area, to be determined by user.

Air Conditioning: 116,650 BTU/Hr; 10 Tons

Floor Loading: 225 lbs/Sq. Ft. maximum

The PECS trainer requires an 18" raised floor to provide space for cables and the ground reference plane. Ceiling height must be at least 9' above this access floor.

PUBLICATIONS FURNISHED:

1. Operation and Maintenance Instructions Manual with Parts Catalog, NAVTRADEV P-4936
2. Planned Maintenance System (PMS) Documentation, NAVTRADEV P-4937
3. Commercial Computer Documentation Set, NAVTRADEV P-4938

PERSONNEL:

Instructors: Two (2) Officers

Operators: Instructor-Operated

Trainees: Twelve (12)

Maintenance: Two (2) TD2 or below with device. One (1) computer/programmer specialist on call. One (1) TD1 or above on call.

CONTRACT IDENTIFICATION:

Manufactured by the Singer Company, Link Simulation Systems Division, Silver Spring, MD under NAVTRASYSYSCEN Contract No. N61339-81-C-0019.

LOCAL STOCK NUMBER:

6930-LL-C00-6012