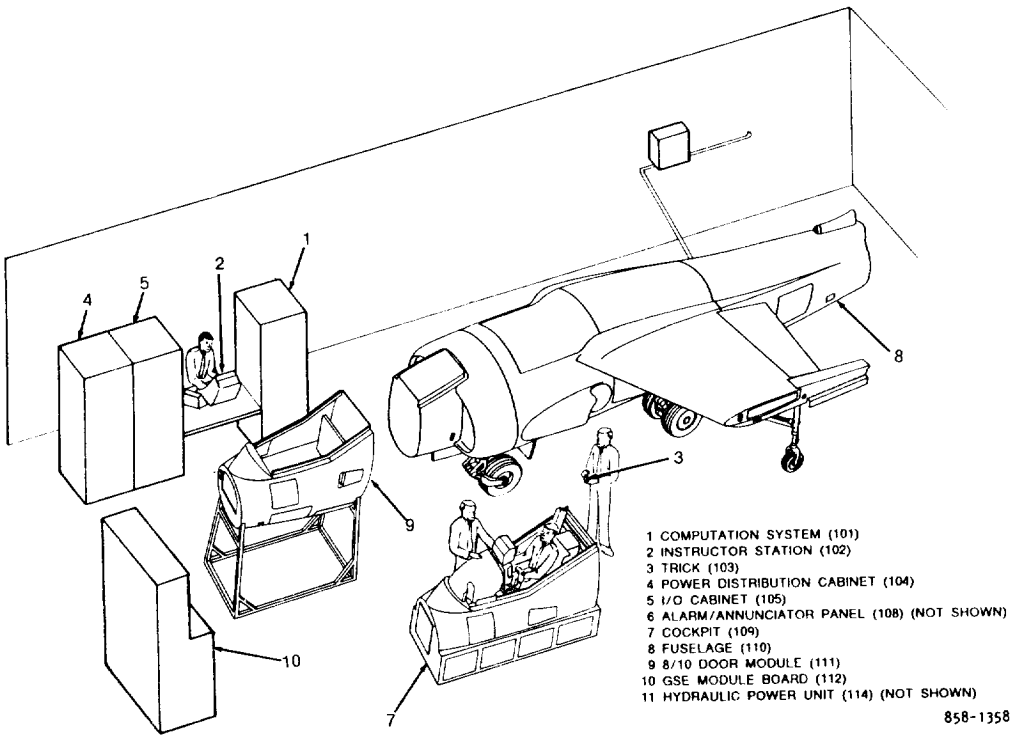
DIRECTORY OF NAVAL TRAINING DEVICES



AV-8B AIRCRAFT LANDING GEAR SYSTEM MAINTENANCE TRAINER, DEVICE 11H100

TRAINING CATEGORY:
MAINTENANCE TRAINING (Misc)

ORIGINATING AGENCY:
DCNO/AIR

SECURITY CLASSIFICATION:
Device 11H100 is unclassified.

PURPOSE:

To integrate various hardware/human interface inputs and observations into a trainer system which facilitates the instructor directed organizational "O" level maintenance training of Aircraft Hydraulic/Pneumatic Mechanic (MOS 6055) and Aircraft Electrical Systems Technician (MOS 6335) and Aircraft Structures Mechanical (MOS 6095) with minimal support activity.

INTENDED USE:

To provide landing gear systems maintenance training including troubleshooting and unscheduled corrective maintenance which involve tasks of identifying instructor inserted malfunctions/ failures and removal/replacement of designated components within the AV-8B Landing Gear systems.

FUNCTIONAL DESCRIPTION:

The trainer simulates the aircraft landing gear and related systems. The simulated systems are modeled in a static condition (aircraft on ground standard atmosphere, temperature, and zero acceleration). A full mockup of the forward fuselage (cockpit), fuselage and a module board containing system GSE are provided as part of the student station to accomplish the training objectives. The trainer is divided into five (5) major functional systems: power distribution, computation, real-time input/output I/O, instructor display/control, and student station. The power distribution system includes the hardware for distributing and monitoring 120/208 VAC, 60 Hz. power and 28 VDC power. The computation system consists of the computer/peripherals and trainer software simulation modules. The I/O system provides all analog and digital input/output signal requirements between the computation system and the trainer hardware. The instructor display/control system includes the alphanumeric display terminal, instructor control panel, tetherless remote instructor command keypad (TRICK), and alarm/annunciator panel. The student station simulated cockpit is a full scale forward fuselage section including two-and three-dimensional representations for system panels and components with functional capabilities. The landing gear sim-

ulation models the landing gear, wheel brake and anti-skid, and nosewheel steering and provides for instructor-inserted malfunctions. Landing gear system components (cockpit/fuselage/wing and GSE module board) are electrically interlinked through the instructor station and computation system. The GSE module board contains a simulated nitrogen servicing unit, hydraulic power panel, hydraulic pressure and return lines, and a pressure/temperature tester. The hydraulic power unit provides the required hydraulic pressure for extending and retracting the landing gear. The instructor station display/control system provides the interface between the instructor and the student station, and provides overall trainer control capabilities. The instructor station is used to initially load the trainer program, enter initial conditions, freeze the training scenario and perform computation system diagnostics. In addition, the trainer is equipped with a DORT program which determines the operational capability of the trainer. Testing of the I/O system is accomplished via a closed loop BITEtest with a displayed fault indication to a card.

PHYSICAL INFORMATION:

Item	Size (in.) W x L x H
1. Computation System Unit 101 CPU 101A2 Floppy Disc Drive 101A3 Mini-Disc Drive 101A5	25-1/2 x 37 x 71
2. Instruction Station Unit 102	32 x 45 x 26
Instructor Alphanumeric Display Terminal 102A1	16 x 20 x 13
Instructor Control Panel 102A2	8 x 11 x 9
3. TRICK Unit 103	3 x 7-1/2 x 1-1/2
4. Power Distribution Cabinet Unit 104	28-1/2 x 30 x 78
5. I/O Cabinet Unit 105	46 x 30 x 78
6. Alarm/Annunciator Panel Unit 108	6-1/2 x 7-1/4 x 10
7. Cockpit Unit 109	39 x 93 x 64
8. Fuselage Unit 110	108 x 108 x 76
9. 8/10 Door Module Unit 111	39 x 93 x 75
10. GSE Module Board Unit 112	39-1/2 x 30 x 75
11. Hydraulic Power Unit (HPU) Unit 114	30 x 36 x 60

OPERATIONAL EQUIPMENT:

The operational equipment used in the trainer has been modified to facilitate trainer simulation and/or stimulation requirements.

EQUIPMENT REQUIRED (NOT SUPPLIED):

Refer to NTSC P-6074 Maintenance Instructions Manual (U).

POWER REQUIREMENTS: (VOLTAGE)

Trainer:	
120/208 VAC.	3-Phase, 60 Hz. 20 amperes/phase
28 VDC	8 amperes
Total VA:	12,470
Hydraulic Power Unit:	
208 VAC	3-Phase, 60 Hz, 9 amperes/phase 9,727

INSTALLATION REQUIREMENTS:

Floor Area:	40'10" x 28'7"
Equipment Access:	21' door
Personnel Access:	3' door
Ceiling Height:	Minimum 10'

PUBLICATIONS FURNISHED:

NTSC P-6068, CCDS (U)
NTSC P-6074, Maintenance Manual (U)
NTSC P-6074-S1 through -S4, Vendor Equipment Maintenance Instructions Manuals (U)
NTSC P-5196, Operator's Manual (U).

PERSONNEL:

Instructor: One (1) Landing Gear Systems Maintenance Instructor

Students: Class of up to Ten (10).

Student Observers: One (1)

CONTRACT IDENTIFICATION:

Manufactured by Reflectone Inc. (50237), Tampa, FL 33614 under NAVTRASYSCEN Contract No. N61339-84-C-0003.

LOCAL STOCK NUMBER:

6910-LL-C00-6576