

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT  
AND DEPOT MAINTENANCE MANUAL  
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS

OSCILLOSCOPES  
AN/USM-140B,  
AN/USM-140C,  
AN/USM-141A,  
AND AN/USM-141B

This copy is a reprint which includes current  
pages from Changes 1 thru 3.

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HEADQUARTERS, DEPARTMENT OF THE ARMY  
MAY 1966

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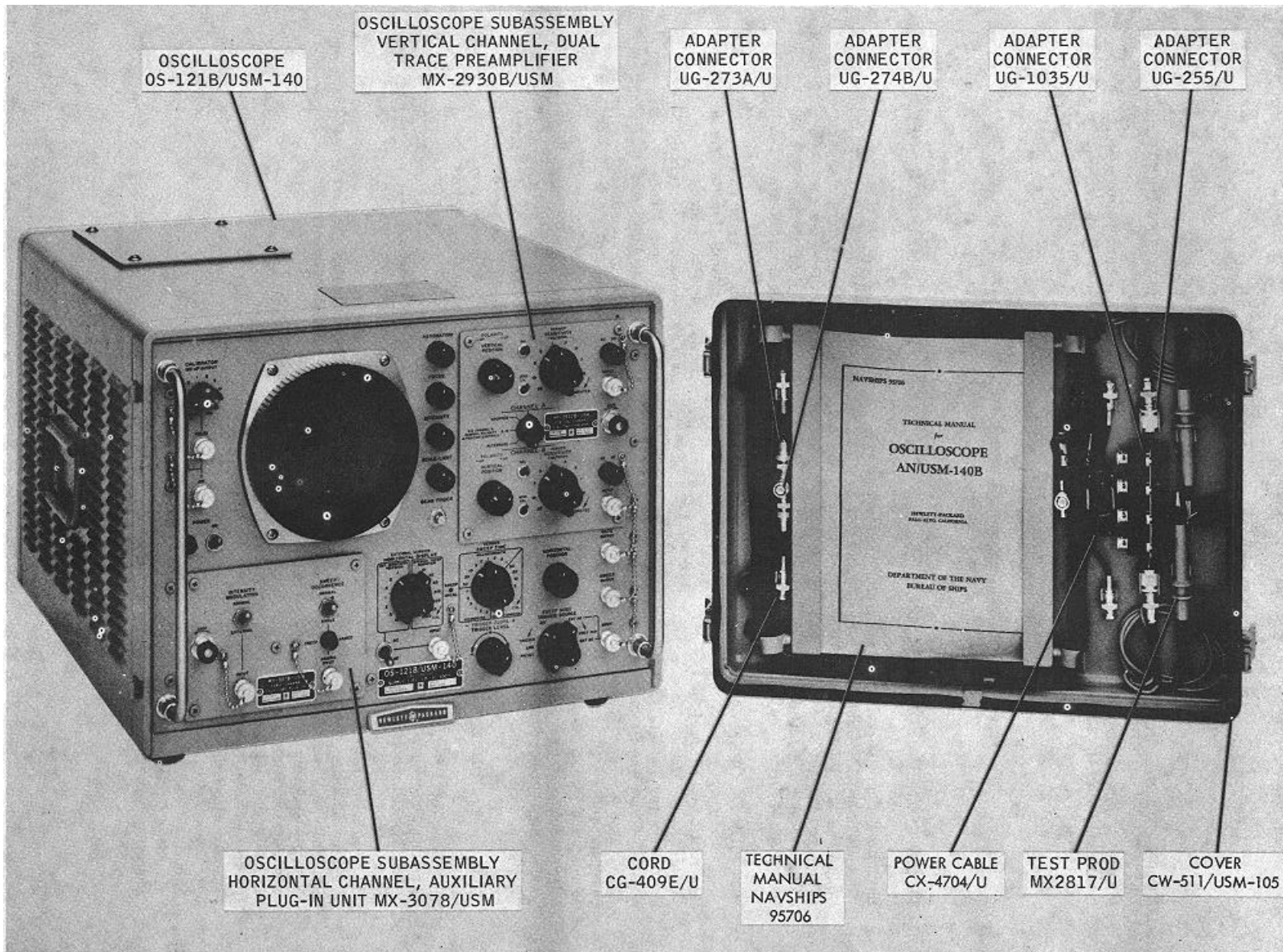


Figure 1-1. Oscilloscope AN/USM-140B



## SECTION A INTRODUCTION

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### A-1. Indexes of Publications

a. *DA Pam 310-4.* Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Form 310-7.* Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

### A-2. Forms and Records

a. *Reports of Maintenance and Unsatisfactory Equipment.* Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. *Report of Packaging yard Handling Deficiencies.* Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies)

as prescribed in AR 700-58/NAVSUP PUB 378/AFR 71-4/MCO P4030.29, and DSAR 4145.8.

c. *Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33/AFM 75-18/MCO P4610.19A, and DSAR 4500.15.

### A-3. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publication and Blank Forms) and forwarded direct to Commander, UIS Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703.

AN/USM-140B  
GENERAL DESCRIPTION

UNCLASSIFIED  
NAVSHIPS 0967-133-7010

**SECTION I  
GENERAL DESCRIPTION**

**1-1. SCOPE**

NAVSHIPS 95706 is a single-volume technical manual that includes operating and servicing instructions and a list of replaceable parts prepared in accordance with MIL-M-15071 E (SHIPS) for Oscilloscopes AN/USM-140B, AN/USM-140C, AN/USM-141A, and AN/USM-141B. The electrical specifications, operating and servicing instructions, schematic diagrams and parts list are identical for all models with noted exceptions. The AN/USM-140B and AN/USM-140C are portable models for benchtop use; the AN/USM-141A and AN/USM-141B are designed for permanent installation in a standard 19-inch wide rack. No other publications are required or supplied for these oscilloscopes at the date of this publication. Subsequent references to the Oscilloscopes in this manual will list only the cabinet model AN/USM-140B except to indicate minor differences in details.

**1-1.1. Items Comprising an Operable Equipment**

<i>FSN</i>	<i>Qty</i>	<i>Nomenclature</i>
6625-987-6603		Oscilloscope AN/USM-140B consisting of:
6625-400-2681	1	Oscilloscope OS-121B/USM-140
	1	Preamplifier, Dual Trace MX-2930B/USM (Plugged into OA-121/USM-140)
6625-961-5888	1	Auxiliary Plug-In MX-3078/USM (Plugged into OS-121/USM-140)
6625-973-4775	2	Prod, Test MX-4073/U (Mounted in equipment)
5935-823-0639	2	Connector, Adapter UG-255A/U (Mounted in equipment)
5935-149-3534		Connector, Adapter UG-273/U (Mounted in equipment)

<i>FSN</i>	<i>Qty</i>	<i>Nomenclature</i>
5995-985-7744		Cable Assembly, Power, Electrical CX-4704/U (8 ft 0 in.) (Mounted in equipment)
5995-752-8781	2	Cord CG-409F/U (Mounted in equipment)
5935-683-7892	2	Connector, Adapter: MIL type MS35173-274B (Mounted in equipment)
4935-992-6112	4	Adapter, Connector UG-1441/U

**1-2. General Description**

The AN/USM-140B is a precision high-speed oscilloscope for displaying the waveforms of electrical voltages at frequencies ranging from direct current to 22 megacycles (equivalent to a risetime of 16 nanoseconds). Vertical deflection sensitivity is continuously adjustable from 200 volts to 20 millivolts per centimeter; horizontal deflection sensitivity is continuously adjustable from 100 volts to 0.1 volt per centimeter at frequencies from direct current to 1 megacycle per second. Sweep rates are continuously adjustable from 15 seconds to 0.1 microsecond per centimeter. The sweep can be synchronized with an external signal or with the signal being viewed. Polarity and sensitivity of the synchronization are selectable to permit synchronization from different voltage points on complex waveforms. The AN/USM-140B is especially developed for general-purpose use in US Navy ship and shore electronic maintenance and research facilities. It is designed for versatility, and reliability under a wide range of environmental conditions, combined with wide frequency range, accurate calibration, and stable synchronization at high sweep rates. Sweep rate, sweep expansion and sensitivity controls are direct-reading. Each calibrated step-type control is equipped with a potentiometer to give