ANTENNA

ANTENNA A-62

FUNCTIONAL DESCRIPTION

Antenna A-62 is a portable equipment that prevents signals from being radiated when adjusting, tuning, or checking the performance of radio sets. The circuit, having an adjustable input impedance, electrically replaces the transmitting antenna for this purpose.

No field changes in effect at time of preparation (22 July 1959).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 20 to 27.9 Mc.

MANUFACTURER'S OR CONTRACTOR'S DATA

International Detrola Corp., Detroit, Michigan.
Order No. 24665-PHLA-49.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

TM11-600, TO 16-40SR508-5; Technical Manual for Radio Sets SCR-508-A, -C, -D, AM, CM, EM.

TYPE CLASSIFICATION (NAVY)

DESIGN COGNIZANCE USA, SIG C
PROCUREMENT COGNIZANCE ARMY SPEC (SIG C) 71-1522
STOCK NO.
R.D.B. IDENT. NO. 11.7

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Antenna A-62</td>
<td>3 x 3 x 6</td>
<td>3</td>
</tr>
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</table>

UNCLASSIFIED
Antenna A-83

FUNCTIONAL DESCRIPTION

Antenna A-83 is a portable equipment that prevents signals from being radiated when adjusting, tuning or checking the performance of radio sets. The circuit, having an adjustable input impedance, electrically replaces the transmitting antenna for this purpose.

No field changes in effect at time of preparation (24 July 1959).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 27 to 38.9 mc.

MANUFACTURER'S OR CONTRACTOR'S DATA

International Detrola Corp., Detroit, Michigan.
Order No. 24665-PHILA-49.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE


EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIP</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Antenna A-83</td>
<td>3-1/2 X 4 X 6</td>
<td>1</td>
</tr>
</tbody>
</table>

UNCLASSIFIED
Index No. | Nomenclature | Units per Assy | Index No. | Nomenclature | Units per Assy
--- | --- | --- | --- | --- | ---
1 | Radio Set Control C-1296/ARM-9 | 1 | 8 | RF Transmission Line CG-558/U (4'0") | 1
2 | Mounting MT-1294/ARM-9 | 1 | 9 | Special Purpose Cable Assembly CX-2458/U (3'2") | 1
3 | Mounting MT-1293/ARM-9 | 1 | 10 | Antenna AT-459/ARM-9 | 2
4 | Mounting MT-1295/ARM-9 | 1 | 11 | Special Purpose Cable Assembly CX-2457/U (2'4") | 1
5 | Mounting MT-1296/ARM-9 | 1 | 12 | Special Purpose Cable Assembly CX-2459/U (2'4") | 1
6 | Special Purpose Cable Assembly CX-2455/U (3'4") | 1
7 | Special Purpose Cable Assembly CX-2456/U (2'4") | 1

Test Bench Cable Set AN/ARM-9

FUNCTIONAL DESCRIPTION

The AN/ARM-9 is designed to mount on a Model A Work Bench 312586 which is attached to the test bench provided for Radio Set AN/ARC-27. Radio Set AN/ARC-27 furnishes the DC power and the radio receiver necessary for operation of Direction Finder Group AN/ARA-25. A source of 115 v., single ph, 380 to 420 cps must be provided. Quick change mountings are provided for each electrical component of Direction Finder Group AN/ARA-25 so that large groups of equipments may be checked with minimum expended time and effort. A test box is provided (but no meters) to sample the current and voltage in each supply source and to sample the waveform of the 100 cps voltage. A complete set of interconnecting cables is supplied.

This test cable set provides mounting facilities, interconnections and testing equipments with which to check the operational condition of the components Direction Finder Group AN/ARA-25.

No field changes in effect at time of preparation (20 February 1957).
TEAT-ASSOCIATED DEVICES

AN/ARM-9 TEST BENCH CABLE SET

RELATION TO OTHER EQUIPMENT


ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER SOURCE REQUIRED: 115 v, 380 to 420 cps single ph, 6 VA.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Cedar Rapids, Iowa.
Contracts NOas-53-478-, dated 5 August 1953
Contracts NOas-52-943-, dated 4 March 1953

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 1N34A
Total Crystals: (2)

REFERENCE DATA AND LITERATURE

AN16-30ARM9-2: Handbook of Operation and Service Instructions for Test Bench Cable Set AN/ARM-9.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Antenna AT-459/ARM-9</td>
<td>1 X 5</td>
<td>1</td>
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<tr>
<td>1</td>
<td>Radio Set Control C-1296/ARM-9</td>
<td>7-3/4 X 10 X 11-3/4</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>Mounting MT-1294/ARM-9</td>
<td>6-5/8 X 15-3/8 X 17-3/4</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>Mounting MT-1295/ARM-9 (Includes Mounting MT-1296/ARM-9)</td>
<td>5-1/2 X 7-1/4 X 11-3/4</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>Mounting MT-1299/ARM-9</td>
<td>1-15/16 X 4-3/4 X 4-3/4</td>
<td>2</td>
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<td>1</td>
<td>Cable Assy, R.F. CG-558/U</td>
<td>40</td>
<td>0.9</td>
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<tr>
<td>1</td>
<td>Cable Assy CX-2455/U</td>
<td>28</td>
<td>0.7</td>
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<td>1</td>
<td>Cable Assy CX-2459/U</td>
<td>28</td>
<td>0.4</td>
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<tr>
<td>1</td>
<td>Cable Assy CX-2458/U</td>
<td>38</td>
<td>0.2</td>
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<td>1</td>
<td>Cable Assy CX-2467</td>
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<td>1</td>
<td>Cable Assy CX-2456/U</td>
<td>28</td>
<td>0.9</td>
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<tr>
<td>2</td>
<td>Adapter Plug UG-201/U</td>
<td>3/4 X 1-9/16</td>
<td></td>
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</table>
RADAR TEST SET
AN/UPM-18

FUNCTIONAL DESCRIPTION

The AN/UPM-18 is a portable unit used with a synchroscope or cathode-ray oscilloscope in measuring or viewing output pulses from modulators of medium-power radar sets.

No field changes in effect at time of preparation (12 June 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

VOLTAGE RANGE: 0 to 35,000 v (peak).
PULSE WIDTH: 0.5 to 10 usec.
REPETITION RATE: 0 to 1000 cps pulse.
DIVIDING RATIO: 50:1 and 200:1.
ACCURACY: Within 5%.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and Crystal Data not Available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for AN/UPM-18.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS</th>
<th>WEIGHT</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Voltage Divider TS-359B/U</td>
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</tr>
<tr>
<td>1</td>
<td>Electrical Lead CX-1327/U</td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Case CY-959/UPM-18</td>
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</tbody>
</table>

OVERALL DIMENSIONS (inches)

WEIGHT (lbs.)
Dummy Load Set AN/URM-13

FUNCTIONAL DESCRIPTION

Dummy Load Set AN/URM-13 is a portable test unit used in indicating rf radiant energy output in signal generating equipment.
No field changes in effect at time of preparation (24 March 1959).

RELATION TO OTHER EQUIPMENT

This equipment is similar to Phantom Transmitting Antenna TS-78/U except that the AN/URM-13 has an adapter and case.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0 to 400 mc.
POWER INPUT RANGE: 3 to 10 W, 12 W (max).

MANUFACTURER'S OR CONTRACTOR'S DATA

Bendix Aviation Corp., Baltimore, Md.
Contract W33-038-ac-13465.
Contract AF33(038)-5652.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93003, Vol 1: Electronic Test Equipment.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
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<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load Set AN/URM-13 Including:</td>
<td></td>
<td></td>
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<tr>
<td>1</td>
<td>Case CY-777/URM-13</td>
<td>2-9/16 X 2-7/8 X 5</td>
<td>0.55</td>
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<tr>
<td>1</td>
<td>Dummy Load DA-38/URM-13</td>
<td>1-3/4 X 1-3/4 X 3</td>
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</tr>
<tr>
<td>1</td>
<td>Adapter UG-83/U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Lamps</td>
<td></td>
<td></td>
</tr>
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</table>
ELECTRICAL DUMMY LOAD
AN/URM-62

FUNCTIONAL DESCRIPTION

The AN/URM-62 is a portable, high-power, waveguide-type radio-frequency equipment designed to terminate radio-frequency transmission lines of radio and radar sets to prevent radiation of energy while testing and adjusting certain system components.

No field changes in effect at time of preparation (22 July 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 8200 to 12400 mc.
POWER RATING: 175 W average, 500 kw peak for 1 usec pulses.
VSWR: 1.15 max.
TEMPERATURE RANGE: -54 to +71 deg C.
HUMIDITY RANGE: 100% at +66 deg C.
ALTITUDE RANGE
OPERATING: Sea level to 10000 ft.
NONOPERATING: Sea level to 50000 ft.

MANUFACTURER'S OR CONTRACTOR'S DATA

Wac Engineering Co., Dayton, Ohio.

UNCLASSIFIED
April 1959

Test-Associated Devices

Contract AF33(604)-9098.
Approximate Cost: $66.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Electrical Dummy Load AN/URM-62.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Electrical Dummy Load AN/URM-62 consisting of:</td>
<td>3-1/4 X 4 X 11-5/8</td>
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<tr>
<td></td>
<td>(1) Case CY-769/URM-62</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Dummy Load DA-22/U</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-1/2 X 2-1/2 X 11</td>
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</table>
23 May 1962

**FREQUENCY CONVERTER GROUP AN/USA-6**

Cog Service: FSN:

<table>
<thead>
<tr>
<th>USA</th>
<th>USN</th>
<th>USAF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Functional Class:**

- USA
- USN
- USAF

**TYPE CLASS:**

**MANUFACTURER'S NAME/CODE NUMBER:** Stromberg-Carlson Company.

*No Illustration Available*

**FUNCTIONAL DESCRIPTION:**

The Frequency Converter Group AN/USA-6 is used to permit operation of electronic test equipment from variable-frequency power source, when operated in conjunction with Radio Test Set AN/ARM-22. It will provide 60 cycles per second, 115 volt output to operate the synchronous motors contained in the Radio Test Set AN/ARM-22. It is used in testing airborne TACAN equipment.

No field changes in effect at time of preparation (28 April 1961).

**TECHNICAL CHARACTERISTICS:**

- **INCOMING FREQUENCY RANGE:** 50 to 420 cps.
- **RESULTANT FREQUENCY:** 60 cps.
- **IMPEDANCE**
  - INPUT: 58.6 ohms.
  - OUTPUT: 238.1 ohms.
- **OPERATING POWER RQMT:** 103.5 to 126.5 v ac, 50 to 420 cps, single ph.

**RELATION TO OTHER EQUIPMENT:**

- The AN/USA-6 is designed to be used with, but not a part of Radio Test Set AN/ARM-22 and Test Set, Indicator AN/ARM-31.

**EQUIPMENT REQUIRED BUT NOT SUPPLIED:** None.

**MAJOR COMPONENTS**

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency Converter Group AN/USA-6</td>
<td></td>
<td>8-1/4 x 20 x 20-3/8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>consists of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Converter, Frequency Electronic CV-670/USA-6</td>
<td></td>
<td>7-11/16 x 19-9/16 x 20-3/4</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Case, Frequency Converter CY-2385/USA-6</td>
<td></td>
<td>10-21/32 x 21-7/16 x 28-7/8</td>
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</tr>
<tr>
<td>1</td>
<td>Cover, Test Set CW-468/USA-6</td>
<td></td>
<td>1-1/8 x 10-11/16 x 28-3/8</td>
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</tr>
<tr>
<td>1</td>
<td>Cable Assy, Power, Electrical Stromberg-Carlson type 666097-246</td>
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</tr>
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</table>

**4.11 AN/USA-6:** 1
AN/USA-6 FREQUENCY CONVERTER GROUP

REFERENCE DATA AND LITERATURE:
Nomenclature Card for Frequency Converter Group AN/USA-6.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:
TUBES: (1) OA2WA (2) 12AT7WA (2) 5R4WGBA (1) 9726-6AL5W (1) 5751 (1) 581WA
(4) 6L6WGB

CRYSTALS: None used.

SEMI-CONDUCTORS: (1) 1N69A

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
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PROCUREMENT DATA

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<tr>
<th>PROCUREMENT SERVICE:</th>
<th>DESIGN COG:</th>
<th>USN, BuAer</th>
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<tr>
<td>SPEC &amp;/OR DWG:</td>
<td>MIL-F-19204(AER)</td>
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<tr>
<td>CONTRACTOR</td>
<td>LOCATION</td>
<td>CONTRACT OR ORDER NO.</td>
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<tr>
<td>Stromberg-Carlson Company</td>
<td>Rochester, New York</td>
<td>NOas-57-641</td>
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<tr>
<td>Pt no. 666096-006</td>
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</table>

4.11 AN/USA-6: 2
PICK-UP ANTENNA

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 8500 to 9600 mc.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

FUNCTIONAL DESCRIPTION

The AT-68/UP is designed to be used with test equipment as either a radiating or pick-up antenna. It will transmit or receive energy in the 8500 to 9600 megacycle band. It is a small directional antenna assembly consisting of a tapered section of waveguide terminated by a probe coupling to a coaxial fitting.

No field changes in effect at time of preparation (5 September 1957).

REFERENCE DATA AND LITERATURE


EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIP</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pick-Up Antenna AT-68/UP</td>
<td>2.3 X 4.5 X 6.8</td>
<td>0.3</td>
</tr>
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</table>

UNCLASSIFIED

4.11 AT-68/UP: 1
<table>
<thead>
<tr>
<th>8 February 1963</th>
<th>VHF DETECTOR CAQI-417A</th>
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<tr>
<td>Cog Service: USN</td>
<td>Functional Class: II</td>
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<tr>
<td>FSN:</td>
<td>USA</td>
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</table>

**TYPE CLASS:**

Used by

**MANUFACTURER’S NAME/CODE NUMBER:** Hewlett-Packard Company, (28480).

![VHF Detector CAQI-417A](image)

**FUNCTIONAL DESCRIPTION:**

VHF Detector CAQI-417A is a super-regenerative (AM) receiver covering all frequencies between 10 and 500 mc. It is designed for use with Bridge CAQI-803A. No field changes in effect at time of preparation (4 February 1963).

**TECHNICAL CHARACTERISTICS:**

- **FREQUENCY RANGE:** 10 to 500 mc, continuous coverage, 5 bands.
- **SENSITIVITY:** Approx 5 uv over entire frequency range.
- **POWER REQUIREMENT:** 115 or 230 v porm 10%, 50 to 60 cps, single ph, 35 W.

**RELATION TO OTHER EQUIPMENT:** None.

**EQUIPMENT REQUIRED BUT NOT SUPPLIED:** None.
CAQI-17A VHF DETECTOR

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tr>
<td>1</td>
<td>VHF Detector CAQI-17A</td>
<td></td>
<td>9 x 9-1/4 x 12-1/2</td>
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REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Data not available.
CRYSTALS: Data not available.
SEMI-CONDUCTORS: Data not available.

SHIPPING DATA

<table>
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<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
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PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: Commercial

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<tr>
<th>CONTRACTOR</th>
<th>LOCATION</th>
<th>CONTRACT OR ORDER NO.</th>
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<tr>
<td>Hewlett-Packard Company</td>
<td>Palo Alto, California</td>
<td>NObsr-64167, 22 April 1954</td>
<td>$271.17</td>
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<tr>
<td>Model no. 417A</td>
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</tr>
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</table>

4.11 CAQI-17A: 2
Frequency Converter Unit CAQI-525A

FUNCTIONAL DESCRIPTION:

Frequency Converter Unit CAQI-525A is designed to be inserted into a Frequency Counter CAQI-524C or 524D to extend the range of the counter to 100 mc.

No field changes in effect at time of preparation (16 March 1962).

TECHNICAL CHARACTERISTICS:

RANGE: As amplifier for counter, 10 cps to 10.1 mc. As converter for counter, 10.1 mc to 100 mc.

REGISTRATION: 8 places; first place indicated on converter selector switch labeled 0, 10, 20 . . . 90; next 7 as indicated by counter.

INPUT VOLTAGE: 0.1 v rms min, 10 cps to 10.1 mc; 10 mv rms min, 10.1 mc to 100 mc.

INPUT IMPEDANCE: Approx. 1 meg shunted by 40 uuf, 10 cps to 10 mc; approx. 50 ohms, 10 mc to 100 mc.

31 May 1962
Cog Service: USN FSN:

FREQUENCY CONVERTER UNIT CAQI-525A
Functional Class: 11.8

USA USN USAF

TYPE CLASS: Used by

CAQI-525A FREQUENCY CONVERTER UNIT

LEVEL CONTROL: Tuning eye aids frequency selection; indicates correct voltage level adjustment.

RELATION TO OTHER EQUIPMENT:

This equipment is designed for use only with Electronic Counters CAQI-524 Series.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Frequency Counter CAQI-524C or 524D.

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBER</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tbody>
<tr>
<td>1</td>
<td>Frequency Converter Unit CAQI-525A</td>
<td></td>
<td>7 x 7 x 10.5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual</td>
<td></td>
<td>0.3 x 8.5 x 11</td>
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</table>

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93772: Technical Manual for Frequency Converter Unit 525A.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (5) 6AH6 (1) 6E5 (2) 5725

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
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<tbody>
<tr>
<td>1</td>
<td>1.1</td>
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</table>

PROCUREMENT DATA

PROCURING SERVICE: USN

SPEC &/or DWG:

CONTRACTOR          LOCATION          CONTRACT OR ORDER NO.  APPROX. UNIT COST
--------------------------------------------------------------------
Hewlett-Packard Co.  Palo Alto, California  NObsr-75635  $250.00
               Model no. 525A  NObsr-75923  $250.00
                   NObsr-81232  $250.00
                        1 March 1960

4.11 CAQI-525A: 2
<table>
<thead>
<tr>
<th>CONTRACTOR</th>
<th>LOCATION</th>
<th>CONTRACT OR ORDER NO.</th>
<th>APPROX. UNIT COST</th>
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<tr>
<td>Hewlett-Packard Co.</td>
<td>Palto Alto, California</td>
<td>USBSR-81371</td>
<td>$230.23</td>
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<tr>
<td>Model no. 525A</td>
<td></td>
<td>USBSR-81557, 27 June 1960</td>
<td>$231.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USBSR 85327</td>
<td></td>
</tr>
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</table>
Frequency Converter Unit CAQI-525B

**FUNCTIONAL DESCRIPTION:**

Frequency Converter Unit CAQI-525B is designed to be inserted into a Frequency Counter CAQI-524C or 524D to extend the frequency range of the Frequency Counter to 220 mc. No field changes in effect at time of preparation (22 December 1960).

**TECHNICAL CHARACTERISTICS:**

- **RANGE:** 100 mc to 220 mc.
- **REGISTRATION:** 9 places; first two places indicated on converter selector switch labeled 100, 110, 120, ..., 210, next 7 indicated by counter.
- **INPUT VOLTAGE:** 0.2 v rms minimum.
- **INPUT IMPEDANCE:** Approx 50 ohms.
- **LEVEL CONTROL:** Tuning eye aids frequency selection; indicates correct voltage level adjustment.
CAQI-525B FREQUENCY CONVERTER UNIT

RELATION TO OTHER EQUIPMENT:

This equipment is designed for use only with Electronic Counters CAQI-524 series.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Electronic Counter CAQI-524 series.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tbody>
<tr>
<td>1</td>
<td>Frequency Converter Unit CAQI-525B</td>
<td></td>
<td>7 x 7 x 10.5</td>
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</tr>
<tr>
<td>2</td>
<td>Technical Manual</td>
<td></td>
<td>0.3 x 8.5 x 11</td>
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REFERENCE DATA AND LITERATURE:

NAVSHIPS 93773: Technical Manual for Frequency Converter Unit 525B.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 5654 (1) 5725 (2) 6AH6 (1) 6E5 (1) 6485

CRYSTALS: None used.

SEMI-CONDUCTORS: (2) HD2135(Hughes)

SHIPPING DATA

<table>
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<th>PKGS</th>
<th>VOLUME (CU FT)</th>
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<tr>
<td>1</td>
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PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

CONTRACTOR LOCATION

Hewlett-Packard Company Model no. 525B Palo Alto, California

CONTRACT OR ORDER NO.

NObsr-75635 NObsr-75865, 22 June 1959
NObsr-75923 NObsr-81371 NObsr-85147

APPROX. UNIT COST

$250.00 231.15
250.50 230.23 250.00

4.11 CAQI-525B: 2
<table>
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<tr>
<th>CONTRACTOR</th>
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<td>NObsr-85327</td>
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Functional Class: USAF

Manufacturers Name/Code Number: Hewlett-Packard Co.

**FUNCTIONAL DESCRIPTION:**

Time Interval Unit CAQI-5268 converts an Electronic Counter CAQI-5248B, C, or D into an accurate time measuring instrument. This instrument measures pulse width, pulse delay, or time between nearly any two electrical events, with a resolution of 0.1 usec. Separate input channels are provided so start and stop signals may be from unrelated sources.

No field changes in effect at time of preparation (6 June 1961).

**TECHNICAL CHARACTERISTICS:**

**RANGE:** 1 usec to $10^7$ sec.

**ACCURACY:** Form 1 period of standard frequency counted, form 1 period of standard frequency.

**INPUT VOLTAGE:** 1 v peak min., direct-coupled input.

**INPUT IMPEDANCE:** Approx 1 meg, 40 uuf shunt.
CAQI-526B TIME INTERVAL UNIT

START STOP: Independent or common channels.
TRIGGER SLOPE: Pos or neg on start and/or stop channels.
TRIGGER AMPLITUDE: Both channels continuously adjustable from M192 to P192 v.
STANDARD FREQUENCY COUNTED: 10 cps, 1 or 100 kc; 10 mc from CAQI-524 or externally applied frequency.
READS IN: Seconds, milliseconds, or microseconds; decimal point automatically positioned.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Time Interval Unit CAQI-526B</td>
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REFERENCE DATA AND LITERATURE:

NAVSHIPS 93774: Operating and Servicing Manual for 526B Time Interval Unit.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (2) 5654/6AK5W (1) 5963
CRYSTALS: None used.
SEMI-CONDUCTORS: None used.

SHIPPING DATA

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<th>PKGS</th>
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<tbody>
<tr>
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PROCUREMENT DATA

PROCURING SERVICE: DESIGN COG: Commercial
SPEC &/OR DMG:

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<tr>
<td>Hewlett-Packard Co. Model no. 526B</td>
<td>Palo Alto, Calif.</td>
<td>NObsr-75923, 29 June 1959</td>
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<td>NObsr-85138, 31 January 1961</td>
<td>$166.06</td>
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</table>

4.11 CAQI-526B: 2
Period Multiplier CAQI-526C

FUNCTIONAL DESCRIPTION:

Period Multiplier CAQI-526C allows average measurements of 100, 1000, and 10,000 periods. This insures greater accuracy for midrange frequency measurements.

No field changes in effect at time of preparation (6 June 1961).

TECHNICAL CHARACTERISTICS:

RANGE: 0 to 100 kc.
GATE TIME: 1, 10, 100, 1000, and 10000 cyc of the unknown freq.
ACCURACY: Porm 1 count porm 0.3%/number of periods measured, porm time base accuracy.

STANDARD FREQUENCY COUNTED: 10 cps, 1 kc, 100 kc, 10 mc, on externally applied frequency.
READS IN: Seconds, milliseconds, or microseconds.
INPUT VOLTAGE: 1 v rms min.
INPUT IMPEDANCE: 1 meg, 40 uuf shunt.
CAQI-526C: PERIOD MULTIPLIER

RELATION TO OTHER EQUIPMENT:

This unit is used with CAQI-524 series equipment.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
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<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tr>
<td>1</td>
<td>Period Multiplier CAQI-526C</td>
<td></td>
<td>8 x 9 x 12</td>
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REFERENCE DATA AND LITERATURE:

Operating and Servicing Manual for 526C Period Multiplier.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Data not available.
CRYSTALS: Data not available.
SEMI-CONDUCTORS: Data not available.

SHIPPING DATA

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PROCUREMENT DATA

PROCURING SERVICE: DESIGN COG: Commercial

SPEC &/OR DWG:

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<td>Model no. 526C</td>
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</table>
ATTENUATOR CN-45/UP

USA

28 February 1963
Cog Service: USN
FSN: USA
USA

TYPE CLASS: Std


ATTENUATOR CN-45/UP

FUNCTIONAL DESCRIPTION:

Attenuator CN-45/UP is for use in testing Radar Sets AN/APS-20 and AN/APS-20A. It is connected to the modulator as a dummy load, or between the modulator and transmitter as a conditioner for the magnetron in the transmitter. It consists of ten non-inductive resistors and a single-layer inductance, all mounted on stand-off insulators and contained within a metal grill.

When used as a load for the modulator, the attenuator presents a non-inductive impedance of approx 25 ohms. When connected as a magnetron conditioner, the attenuator acts as an impedance of approx 10 ohms between the modulator and the radar transmitter, permitting the transmitter to operate at a safe level.

No field changes in effect at time of preparation (12 June 1962).
CN-45/UP ATTENUATOR

TECHNICAL CHARACTERISTICS:

POWER RATING
  MAGNETRON CONDITIONER: 640 W.
  MODULATOR LOAD: 1,600 W.

INPUT RESISTANCE
  ARTIFICIAL LOAD: 25 ohms form 10%.
  ATTENUATOR: 10 ohms form 10%.
  POWER DISSIPATION OF ARTIFICIAL LOAD: 1,500 W (avg).
  ACCURACY: Form 10%.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Attenuator CN-45/UP includes:</td>
<td></td>
<td>9-1/2 x 18 x 19</td>
<td>28</td>
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<tr>
<td>1</td>
<td>Cable RG-28/U</td>
<td></td>
<td>48 lg</td>
<td>3.5</td>
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REFERENCE DATA AND LITERATURE:

NAVAER 16-55-511: Handbook of Operating and Maintenance Instructions for Attenuator CN-45/UP.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

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<th>PKGS</th>
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<th>WEIGHT (LBS)</th>
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PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: USN, BuWeps

SPEC &/OR DWG:

4.11 CN-45/UP: 2
<table>
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<th>APPROX. UNIT COST</th>
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<tr>
<td>Hill Diesel Engine Co.</td>
<td>Lansing, Mich.</td>
<td>NAer-00373 NOAS-6789</td>
<td></td>
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<tr>
<td>Hazeltine Electronics Corp.</td>
<td>Little Neck, L.I., N.Y.</td>
<td>N3835-75234 N3835-4576A</td>
<td>$475.00</td>
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</table>
23 April 1962
Cog Service: USN FSN: CONVERTER, FREQUENCY, ELECTRONIC CV-766/U Functional Class: 11.8

USA USN USAF

TYPE CLASS: Used by


Converter, Frequency, Electronic CV-766/U

FUNCTIONAL DESCRIPTION:

Converter, Frequency, Electronic CV-766/U is designed to be inserted into Frequency Meter FR-132/U to extend the range of the Frequency Meter to 100 mc.

No field changes in effect at time of preparation (16 March 1962).

TECHNICAL CHARACTERISTICS:

RANGE
AS AMPLIFIER: 10 cps to 10.1 mc.
AS CONVERTER: 10.1 to 100 mc.
REGISTRATION: 8 places; first place indicated on converter selector switch labeled 0, 10, 20 . . . 90; next 7 as indicated by counter.
INPUT VOLTAGE: 0.1 v to 10 v rms, 10 cps to 10 mc; 10 mv to 1 v rms, 10 mc to 100 mc.
INPUT IMPEDANCE: Approx. 1 meg shunted by 40 uuf, 10 cps to 10 mc; approx. 50 ohms, 10 mc to

4.11 CV-766/U: 1
CV-766/U CONVERTER, FREQUENCY, ELECTRONIC

100 mc.
LEVEL CONTROL: Tuning eye aids frequency selection; indicates correct voltage level adjustment.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:
(1) Frequency Meter FR-132/U.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
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<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tbody>
<tr>
<td>1</td>
<td>Converter, Frequency, Electronic CV-766/U</td>
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<td>5</td>
<td></td>
</tr>
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REFERENCE DATA AND LITERATURE:

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:
TUBES: (5) 6AH6 (1) 6E5 (2) 5725/6AS6W
CRYSTALS: None used.
SEMICONDUCTORS: None used.

SHIPPING DATA

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<th>PKGS</th>
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<th>WEIGHT (LBS)</th>
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PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:
DESIGN COG: USN, BuShips

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<td>NObsr-75337</td>
<td>$250.00</td>
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4.11 CV-766/U: 2
FREQUENCY CONVERTER

FUNCTIONAL DESCRIPTION

The CV-80/U is used to extend the range of Noise-Field-Intensity Meter TS-507/U or TS-587A/U. No field changes in effect at time of preparation (26 September 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

CONVERTING SIGNALS: Received in the range of 375 to 5000 mc, to 375 mc.
INPUT POWER: 105 to 125 v, 50 to 1600 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Stoddart Aircraft Mfg Co.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Frequency Converter CV-80/U.

EQUIPMENT SUPPLIED DATA

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<th>OVERALL DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS.)</th>
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</table>

UNCLASSIFIED
FUNCTIONAL DESCRIPTION

Electrical Dummy Load DA-177/U is a portable, general purpose 50-ohm coaxial line termination for use on either ship or shore installation. The equipment provides an accurate, dependable, practically non-reflective load adjustment and testing of transmitters under non-radiating conditions.

No field changes in effect at time of preparation (25 January 1960).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

INPUT IMPEDANCE: 50 ohms.
LOAD POWER RATING (UP TO 40° C AMBIENT): 50 W avg power, continuous duty.
VOLTAGE STANDING WAVE RATIO: Not greater than 1.2 (0 to 3300 mc), not greater than 1.15 (960 mc to 1215 mc).

MANUFACTURER'S OR CONTRACTOR'S DATA

Sierra Electronic Corp, Menlo Park, Calif.
Part No. 160A-500 FLC. Dwg No. SP-8134-3A.
Contract NObsr-71694, dated 15 February 1957.
Approximate Cost: $169.50.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93065: Technical Sheet for DUMMY LOAD ELECTRICAL DA-177/U.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USN, BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO. 11.7

EQUIPMENT SUPPLIED DATA

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<th>QUANTITY PER EQUIPT</th>
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<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical DA-177/U</td>
<td>6 X 8 X 17</td>
<td>28</td>
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</tbody>
</table>
**TEST-ASSOCIATED DEVICES**

**DUMMY LOAD, ELECTRICAL DA-177A/U**

*Functional Description*

Electrical Dummy Load DA-177A/U is a portable, general purpose 50-ohm coaxial line termination for use on either ship or shore installation. The equipment provides an accurate, dependable, practically non-reflective load for adjustment and testing of transmitters under non-radiating conditions.

No field changes in effect at time of preparation (25 January 1960).

*Electrical and Mechanical Characteristics*

**Input Impedance:** 50 ohms.

**Load Power Ratings (up to 45° C Ambient):**

- 500 W avg power-continuous duty; 15 kw peak power.
- Voltage Standing Wave Ratio: Not greater than 1.15 (0 to 3300 mc).

*Manufacturer's or Contractor's Data*

Bird Electronic Corp., Cleveland, Ohio.
Pt/Dwg No. 820103, Model 8201 Dummy load.
Contract N0bar-75140, dated 5 March 1958.
Approximate Cost: $165.00.

*Tube and/or Crystal Complement*

No Electron Tubes or Crystals used.

*Reference Data and Literature*

NAVSHIPS 93281: Technical Sheet for DUMMY LOAD, ELECTRICAL DA-177A/U.

---

**Equipment Supplied Data**

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<tr>
<th>Quantity Per Equip</th>
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<th>Weight (lbs.)</th>
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<tr>
<td>1</td>
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<td>6 X 8-1/2 X 18-1/2</td>
<td>21</td>
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</table>

UNCLASSIFIED
FUNCTIONAL DESCRIPTION:

Electrical Dummy Load DA-201/U is a general purpose, resistive termination capable of dissipating R.F. energy from dc to 30 mc at 600 ohms impedance. It is used with, but not of, AN/FRT-39 and other radio transmitters. The power dissipation is 10,000 watts peak and 5,000 watts nominal. Two connector-type terminations are provided.

The DA-201/U is mounted with brackets and support rods. The special pyrex-glass resistors are shock-mounted. The insulation is teflon. Spark gaps protect against overload. The protective case is reinforced fiberglass.

No field changes in effect at time of preparation (7 April 1961).

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: DC to 30 mc.
NOMINAL IMPEDANCE: 600 ohms.
DA-201/U DUMMY LOAD, ELECTRICAL

POWER RATING: 5000 W.
OPERATING TEMPERATURE: -40 to +100 deg F (ambient).

RELATION TO OTHER EQUIPMENT: None.
EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM DESCRIPTION</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tbody>
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REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.
CRYSTALS: None used.
SEMI-CONDUCTORS: None used.

SHIPPING DATA

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<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
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</thead>
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PROCUREMENT DATA

PROCURING SERVICE: The Technical Materiel Corp. Mamaroneck, New York
SPEC A/OR DWG: Model no. TER-5000(600)
DESIGN COG: USN, BuShips

<table>
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<tr>
<th>CONTRACTOR</th>
<th>LOCATION</th>
<th>CONTRACT OR ORDER NO.</th>
<th>APPROX. UNIT COST</th>
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<tbody>
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<td>The Technical Materiel Corp. Mamaroneck, New York</td>
<td>TER-5000(600)</td>
<td>Noobsr-75597, 4 November 1958</td>
<td>$1,500.00</td>
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4.11 DA-201/U: 2
24 May 1962

Cog Service: FSN: Functional Class:
USA USN USAF

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: The Technical Materiel Corp.

Electrical Dummy Load DA-209/U is a general-purpose, resistive termination capable of dissipating R.F. energy from dc to 30 mc at 50 ohms impedance. It is used with, but is not part of, AN/FRT-39 and other radio transmitters. The power dissipation is 10,000 watts peak and 5,000 watts nominal. Two connector-type terminations are provided.

The DA-209/U is mounted with brackets and support rods. The special pyrex-glass resistors are shock mounted. The insulation is teflon. Spark gaps protect against overload. The protective case is reinforced fiberglass.

No field changes in effect at time of preparation (7 April 1961).

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: DC to 30 mc.
NOMINAL IMPEDANCE: 50 ohms.
DA-209/U DUMMY LOAD, ELECTRICAL

POWER RATING: 5000 W.
OPERATING TEMPERATURE: M40 to P100 deg F (ambient).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
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<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical DA-209/U</td>
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<td>23-3/4 x 46-3/4 x 63-1/2</td>
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REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.
CRYSTALS: None used.
SEMI-CONDUCTORS: None used.

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>52.0</td>
<td>125</td>
</tr>
</tbody>
</table>

PROCUREMENT DATA

PROCURING SERVICE: The Technical Material Corp.
SPEC &/OR DWG: Model no. TER-5000(50)

LOCATION: Mamaroneck, N. Y.

DESIGN COG: USM, BuShips

CONTRACT OR ORDER NO.: NObsr-75597, 4 November 1958
APPROX. UNIT COST: $1,500.00

4.11 DA-209/U: 2
Electrical Dummy Load DA-210/U is a general purpose, resistive termination capable of dissipating rf energy from dc to 30 mc at 70 ohms impedance. It is used with, but is not a part of, AN/FRT-39 and other radio transmitters. The power dissipation is 10,000 watts peak and 5,000 watts nominal. Two connector-type terminations are provided.

The DA-210/U is mounted with brackets and support rods. The special pyrex-glass resistors are shock mounted, insulation is teflon. Spark gaps protect against overload. The protective case is reinforced fiberglass.

No field changes in effect at time of preparation (7 April 1961).

**TECHNICAL CHARACTERISTICS:**

**FREQUENCY RANGE:** DC to 30 mc.

**NOMINAL IMPEDANCE:** 70 ohms.
DA-210/U DUMMY LOAD, ELECTRICAL

POWER RATING: 5000 W.
OPERATING TEMPERATURE: M40 to P100 deg F (ambient).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical DA-210/U</td>
<td></td>
<td>23-3/4 x 46-3/4 x 63-1/2</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.
CRYSTALS: None used.
SEMI-CONDUCTORS: None used.

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>52.0</td>
<td>125</td>
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</tbody>
</table>

PROCUREMENT DATA

PROCURING SERVICE: The Technical Materiel Corp.
LOCATION: Mamaroneck, N. Y.
MODEL NO.: TER-5000(70)

CONTRACTOR: The Technical Materiel Corp.
LOCATION: Mamaroneck, N. Y.
CONTRACT OR ORDER NO.: NObsr-75597,
                     4 November 1958
                      NObsr-81394,
                     24 May 1960

UNIT COST: $1,500.00

4.11 DA-210/U: 2
13 February 1963
Cog Service: USN FSN:
Functional Class: 11.7

USA USN USAF

TYPE CLASS: Std


FUNCTIONAL DESCRIPTION:

Dummy Load, Electrical DA-218/U is used in lieu of an antenna to dissipate the output of a transmitter. It may be used for testing, or to tune a transmitter under conditions of radio silence.

No field changes in effect at time of preparation (14 June 1962).

TECHNICAL CHARACTERISTICS:

POWER RATING: 500 W continuous with cooling of 50 lbs of air per hr.
FREQUENCY RANGE: 2 to 30 mc.
INPUT RESISTANCE: 50 ohms perm 10%.
INPUT STANDING WAVE RATIO: 1.18 to 1 or less from 2 to 3 mc.
MOUNTING: Four 0.187 in. dia holes spaced on 1.0 in. x 20-1/4 in. centers.
DA-218/U DUMMY LOAD, ELECTRICAL

RELATION TO OTHER EQUIPMENT:

This unit is used with, but is not part of Radio Set AN/URC-32.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical DA-218/U</td>
<td></td>
<td>2-5/8 x 2-7/8 x 20-7/8</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMICONDUCTORS: None used.

SHIPPING DATA

<table>
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<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
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PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: USN, BuWeps

SPEC A/OR DWG: 

<table>
<thead>
<tr>
<th>CONTRACTOR</th>
<th>LOCATION</th>
<th>CONTRACT OR ORDER NO.</th>
<th>APPROX. UNIT COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collins Radio Co.</td>
<td>Cedar Rapids, Iowa</td>
<td>N0bsr-75279</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N0bsr-81220</td>
<td></td>
</tr>
</tbody>
</table>

4.11 DA-218/U: 2
FUNCTIONAL DESCRIPTION:

Dummy Load, Electrical DA-242/U is designed as a low-reflection and nonradiating termination for the coaxial rf transmission lines to assist in tuning and trouble-shooting of transmitting equipment within its rating.

No field changes in effect at time of preparation (22 November 1962).

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: DC to 1000 mc.

INPUT IMPEDANCE: 50 ohms, nominal.

POWER INPUT: 2500 W, continuous.

VSW RATIO: 1.1 to 1.0 max.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.
### DA-242/U DUMMY LOAD, ELECTRICAL

#### MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical DA-242/U</td>
<td>6-3/8 x 11-1/8 x 24-5/16</td>
<td>33.5</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cable p/o DA-242/U</td>
<td>1-1/2 dia x 120</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual NAVSHIPS 93762</td>
<td>1/4 x 9 x 11-1/2</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

#### REFERENCE DATA AND LITERATURE:


#### TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

**TUBES:** None used.

**CRYSTALS:** None used.

**SEMI-CONDUCTORS:** None used.

#### SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
</tr>
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</table>

#### PROCUREMENT DATA

**PROCURING SERVICE:** USN

**SPEC &/OR DWG:** SHIPS-D-3312

**CONTRACTOR**

Bird Electronic Corp.
Model no. 8894

**LOCATION**

Solon, Ohio

**CONTRACT OR ORDER NO.**

MObsr-81048,

18 September 1959

**APPROX. UNIT COST**

$970.00

### 4.11 DA-242/U: 2
Functional Description:

Electrical Dummy Load DA-88A/U is a general purpose, standard type line for 51.5 ohm radio frequency transmission lines. It furnishes a practically nonreflective power dissipating unit for the adjustment and testing of transmitters under nonradiating conditions.

No field changes in effect at time of preparation (28 December 1962).

Technical Characteristics:

Frequency Range: 0 to 3300 mc.
Power Rating: 500 W.
Impedance: 50 ohms.
VSWR: Less than 1.1 to 1000 mc.
Ambient Temperature: M60 deg C to P45 deg C.
DA-88A/U DUMMY LOAD, ELECTRICAL

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

### MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical DA-88A/U</td>
<td></td>
<td>5-15/16 x 8-7/16 x 18-1/2</td>
<td>17</td>
</tr>
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</table>

### REFERENCE DATA AND LITERATURE:

NAVSHIPS 93289: Instruction Sheet for Dummy Load, Electrical DA-88A/U.

### TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMICONDUCTORS: None used.

### SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
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### PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: USN, BuShips

SPEC & OR DWG:

<table>
<thead>
<tr>
<th>CONTRACTOR</th>
<th>LOCATION</th>
<th>CONTRACT OR ORDER NO.</th>
<th>APPROX. UNIT COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird Electronic Corp.</td>
<td>Cleveland, Ohio</td>
<td>N0bsr-75296</td>
<td>$107.25</td>
</tr>
<tr>
<td>Model no. 82A</td>
<td></td>
<td>N0bsr-75594</td>
<td>$105.65</td>
</tr>
</tbody>
</table>

4.11 DA-88A/U: 2
ELECTRICAL DUMMY LOAD DA-91/U

FUNCTIONAL DESCRIPTION

Electrical Dummy Load DA-91/U is a portable terminating device which presents a 51 ohm impedance to coaxial cables. It is used when aligning, adjusting, or testing medium power transmitters or low impedance rf circuits.

No field changes in effect at time of preparation (21 April 1960).

MANUFACTURER'S OR CONTRACTOR'S DATA

FREQUENCY RANGE: 0 to 3000 mc.
POWER DISSIPATION: 600 W.
INPUT IMPEDANCE: 51 ohms.
VOLTAGE STANDING WAVE RATIO: 1.2:1.

MANUFACTURER'S OR CONTRACTOR'S DATA

Federal Telephone and Radio Corp., Clifton, New Jersey.

Dwg No. B-2140330-B.
Contract NOarb-52021, dated 1 September 1950.
Federal Telephone and Radio Corp., Clifton, New Jersey.
Contract NOarb-63444.
Federal Telephone and Radio Corp., Clifton, New Jersey.
Dwg No. C-2142772-A.
Contract NOarb-75216.
Model No. 632 modified.
Contract NOarb-81183.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE


SHIPPING DATA

<table>
<thead>
<tr>
<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electrical Dummy Load DA-91/U</td>
<td>1</td>
<td>7-1/2 x 9-1/4 x 20-1/4</td>
<td>16-3/4</td>
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</tbody>
</table>

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electrical Dummy Load DA-91/U</td>
<td>6 x 7-1/8 x 18-5/8</td>
<td>4.11</td>
</tr>
</tbody>
</table>
ALIGNMENT EQUIPMENT

FUNCTIONAL DESCRIPTION

The ME-73 consists of instruments and tools to be used with Adapters M-394 and M-399 to adjust and align Radio Sets SCR-509, SCR-510, SCR-609, SCR-610.

No field changes in effect at time of preparation (26 Mar 1957).

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE


TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.
# ME-73 ALIGNMENT EQUIPMENT

## Equipment Supplied Data

<table>
<thead>
<tr>
<th>Quantity Per Equipt</th>
<th>Name and Nomenclature</th>
<th>Overall Dimensions (Inches)</th>
<th>Weight (Lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chest CH-204 consists of:</td>
<td>2-1/2 x 6-1/2 x 7-1/4</td>
<td>2.12</td>
</tr>
<tr>
<td>1</td>
<td>Adapter RS-259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Alignment Tool TL-207</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Crystal Holder FT-243, w/2.88 mc crystal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Crystal Holder FT-243, w/4.3 mc crystal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Screwdriver TL-15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Wrench, 5/16 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual TM11-318</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.11 ME-73: 2
TUBE SOCKET ADAPTER KIT

FUNCTIONAL DESCRIPTION

The MX-1258/U consists of nine types of adapters, mounted within an aluminum transit case, complete with handle. The adapters are secured within the case by means of mounting clips. An additional clip for securing the instruction book is provided in the case lid. Pin straighteners for the 7 and 9 pin miniature bases are permanently mounted in the center of the transit case.

This Tube Socket Adapter Kit is intended for use in general electronics testing of equipment employing electron tubes. The nine adapters contained in the Kit provide the facility for testing circuit conditions with practically all of the commonly used electron tubes.

No field changes in effect at time of preparation (12 February 1958).

RELATION TO OTHER EQUIPMENT

Replaces Navy Type - 49992 Adapter Kit.
# Test-Associated Devices

## MX-1258/U  
**TUBE SOCKET ADAPTER KIT**

April 1958

---

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIP</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Adapter, Tube Socket (4 prong) U-97/U</td>
<td>1-9/16 dia x 2 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (5 prong) U-98/U</td>
<td>1-9/16 dia x 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (6 prong) U-99/U</td>
<td>1-9/16 dia x 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (7 prong, small) U-100/U</td>
<td>1-9/16 dia x 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (7 prong, large) U-101/U</td>
<td>1-9/4 dia x 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (octal) U-102/U</td>
<td>1-9/16 dia x 2-1/8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (octal) U-103/U</td>
<td>1-9/16 dia x 1-15/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (7 prong) U-104/U</td>
<td>1-1/32 dia x 1-3/4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Adapter, Tube Socket (9 prong) U-105/U</td>
<td>1-5/32 dia x 1-3/4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Duplex Tube Pin Straightener</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

4.11 MX-1258/U: 2
7 May 1962
Cog Service: USN FSN: 6625-506-4359
Functional Class: II.2.1

USA USN USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/_CODE NUMBER: Radio Corp. of America, RCA Victor Div.

Test Adapter MX-2012/U

FUNCTIONAL DESCRIPTION:

Test Adapter MX-2012/U, when used with a tube tester of the TV-3/U series, provides convenient facilities for testing subminiature vacuum tubes wired into subassemblies of three different types. Interconnections in the Test Adapter between the subassembly jacks and the mate octal plug enable the tube tester facilities to be connected to the mounted tubes for normal testing. Subassemblies from the following radio receiving sets can be accommodated: AN/FRR-18, -19, -21, -22, -23, -52, AN/MRR-1, -2, -3, AN/SRR-11, -12, -13, and -13A. In addition, unmounted type 5644 tubes can be tested.

No field changes in effect at time of preparation (10 January 1962).

TECHNICAL CHARACTERISTICS: None.

RELATION TO OTHER EQUIPMENT: None.

4.11 MX-2012/U: 1
MX-2012/U TEST ADAPTER

EQUIPMENT REQUIRED BUT NOT SUPPLIED:


MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test Adapter MX-2012/U</td>
<td></td>
<td>4.5 x 5.25 x 8</td>
<td>1.75</td>
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</tbody>
</table>

REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.
CRYSALS: None used.
SEMI-CONDUCTORS: None used.

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>0.3</td>
<td>5</td>
</tr>
</tbody>
</table>

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:
CONTRACTOR: Radio Corp. of America, RCA Victor Div.
PT/dwg no. 755956
LOCATION: Camden, N. J.
CONTRACT OR ORDER NO.:
N0bsr-71157, 3 January 1956
N0bsr-71857, 25 June 1957
N0bsr-75103, 11 February 1958
N0bsr-75628
APPROX. UNIT COST:
$75.09
$101.73
$64.70
$59.02
PHANTOM TARGET EQUIPMENT

FUNCTIONAL DESCRIPTION

The Model OAJ is designed to be permanently installed in aircraft to check the performance of Aircraft Radar Equipment operating at 10 centimeters. It is designed to reflect a signal on the indicator tubes of the Aircraft Radar Equipment and will provide a continuously available source of a target signal. By rotating the spinner of the radar equipment a pattern will be obtained on the PPI and PRI that will indicate the radiation pattern of the radar antenna.

No field changes in effect at time of preparation (28 November 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY: 3300 mc bands.
RESONANCE CHAMBER
OSCILLATION TIME: Approx 28 usec.
INDICATOR TUBES SIGNAL: Solid from 0 to at least 2.25 mi.

MANUFACTURER'S OR CONTRACTOR'S DATA

Contract MXs 3932.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.
## Reference Data and Literature


### Equipment Supplied Data

<table>
<thead>
<tr>
<th>Quantity Per Equip</th>
<th>Name and Nomenclature</th>
<th>Overall Dimensions (inches)</th>
<th>Weight (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Resonance Chamber NT-14AAL</td>
<td>5-5/8 X 8-3/8 X 9-3/8</td>
<td>2.81</td>
</tr>
<tr>
<td>1</td>
<td>Antenna Assembly NT-66ADL</td>
<td>2-3/4 X 3-3/8 X 3-3/8</td>
<td>0.19</td>
</tr>
<tr>
<td>1</td>
<td>Antenna Mounting Bracket</td>
<td>1 X 3-1/4 X 3-1/2</td>
<td>0.34</td>
</tr>
<tr>
<td>1</td>
<td>Coupling Loop</td>
<td>3/8 X 13/16 X 2-3/8</td>
<td>0.03</td>
</tr>
<tr>
<td>1</td>
<td>Cable *</td>
<td>240 lg</td>
<td>2.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>264 lg</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>132 lg</td>
<td>1.2</td>
</tr>
</tbody>
</table>

* Cable supplied in either of three lengths depending on type of aircraft in which it is to be installed.
FUNCTIONAL DESCRIPTION

The PP-68/U, PP-68A/U, PP-68B/U, and PP-68C/U are portable vibrator-type power supplies designed to provide 100 to 110 volts alternating current at 60 cycles with a primary power source of a 6 or 12 volt storage battery. They can be continuously operated at a high-power output of 50 watts or a low-power output of 15 watts, and may be used to supply power at locations where 110 volts alternating current is not available, for Tube Tester I-177, Electron Tube Test Set TV-7/U, or any other electrical equipment that operates on 110 volts, 60 cycles with a maximum power consumption of 50 watts.

They are interchangeable in application, and the mechanical and electrical differences between models are relatively minor.

No field changes in effect at time of preparation (16 April 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1)
Storage Battery, 6 or 12 volt.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OUTPUT: 100 to 110 v, 60 cps, 50 or 15 w.
INPUT DATA
VOLUTE: 6.3 or 12.6 V DC.

CURRENT
6.3 V INPUT: 6.0 amps for 15 W output,
13.0 amps for 50 W output.
12.6 V INPUT: 2.0 amps for 15 W output,
6.5 amps for 50 W output.

OPERATING TEMPERATURE (NORMAL): -40 to +55 deg C (-40 to +130 deg F).

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE


TYPE CLASSIFICATION

DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

SHIPPING DATA

<table>
<thead>
<tr>
<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Vibrator Pack PP-68/U including:</td>
<td>0.73</td>
<td>10 x 10 x 12-1/2</td>
<td>24.5</td>
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<tr>
<td></td>
<td>(1) Set of Running Spares</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) Technical Manual TM11-2648</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Vibrator Pack PP-68A/U including:</td>
<td>0.77</td>
<td>10-1/4 x 10-1/4 x 12-1/2</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td>(1) Set of Running Spares</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) Technical Manual TM11-2648</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Vibrator Pack PP-68B/U or PP-68C/U including:</td>
<td>1.49</td>
<td>12-1/2 x 13-1/2 x 15</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>(1) Set of Running Spares</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) Technical Manual TM11-2648</td>
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</table>

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PP-68/U</td>
<td>8-3/8 x 8-3/4 x 9-3/8</td>
<td>22</td>
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<tr>
<td>1</td>
<td>Set of Running Spares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual TM11-2648 PP-68A/U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>PP-68A/U</td>
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<tr>
<td>1</td>
<td>Set of Running Spares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual TM11-2648 PP-68B/U</td>
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</tr>
<tr>
<td>1</td>
<td>PP-68B/U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Set of Running Spares</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manuals TM11-2648 PP-68C/U</td>
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</tr>
<tr>
<td>1</td>
<td>PP-68C/U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Set of Running Spares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual TM11-2648</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**FUNCTIONAL DESCRIPTION**

The TS-101/AP is a small, auxiliary connector and load box designed for use with Test Oscilloscope TS-100/AP in testing Range Units CP-5/APS-15, CP-4A/APS-15, CP-11/APS-15A and CP-11A/APS-SA. This unit provides specified circuit test connections and dummy operating loads for these circuits.

The TS-101/AP consists of 5 capacitors which are active only when being used in their respective test circuits.

No field changes in effect at time of preparation (29 November 1956).

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

**OPERATING POWER:** 115 v, 400 to 2400 cps.

**TUBE AND/OR CRYSTAL COMPLEMENT**

No Electron Tubes.

**REFERENCE DATA AND LITERATURE**


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**EQUIPMENT SUPPLIED DATA**

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test Load Unit TS-101/AP</td>
<td>2-3/16 x 2-3/4 x 11-3/8</td>
<td>1.5</td>
</tr>
<tr>
<td>1</td>
<td>Cord CX-237/U</td>
<td>120 lg</td>
<td></td>
</tr>
</tbody>
</table>

UNCLASSIFIED
RADIO FREQUENCY TEST LOAD

TS-108/AP, TS-108A/AP

FUNCTIONAL DESCRIPTION

The TS-108/AP and TS-108A/AP are portable units providing a matched load that absorbs rf energy without appreciable reflection or radiation in bench testing of X-band radar equipment.

No field changes in effect at time of preparation (16 April 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

STANDING WAVE RATIO: 1.05 (max); 1.10 (with adapters).

MANUFACTURER'S OR CONTRACTOR'S DATA

TS-108/AP
Bernard Rice and Sons Inc., NY, NY.
Contract NOa(s)-3670.
Order No. 365-DAY-44.
Order No. 837-DAY-45RA.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.
# Test-Associated Devices

## TS-108/AP, TS-108A/AP

### RADIO FREQUENCY TEST LOAD

#### REFERENCE DATA AND LITERATURE

- NAVAER 08-SS-78: Manual of Test Equipment.

#### TYPE CLASSIFICATION

- DESIGN COGNIZANCE: BUSHIPS
- PROCUREMENT COGNIZANCE: BuAER SPEC 2674, Navy
- STOCK NO.: SPEC RE13A988
- R.D.B. IDENT. NO.: SPEC RE13A988

### SHIPPING DATA

<table>
<thead>
<tr>
<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Radio Frequency Test Load TS-108/AP</td>
<td>0.1</td>
<td>3 x 5 x 11</td>
<td>6.5</td>
</tr>
<tr>
<td>1</td>
<td>Radio Frequency Test Load TS-108A/AP</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS-108/AP</td>
<td>Radio Frequency Test Load TS-108/AP</td>
<td>1-5/8 x 3 x 9-3/16</td>
<td>1.02</td>
</tr>
<tr>
<td>1</td>
<td>Radio Frequency Test Load TS-108/AP</td>
<td>1-5/8 x 3 x 5-1/2</td>
<td>1.16</td>
</tr>
<tr>
<td>1</td>
<td>Case CY-247/AP</td>
<td>2 x 3-11/16 x 9-1/2</td>
<td>0.27</td>
</tr>
<tr>
<td>1</td>
<td>Adapter UG-80/U</td>
<td>13/32 x 1-3/4 x 1-3/4</td>
<td>0.02</td>
</tr>
<tr>
<td>1</td>
<td>Adapter UG-144/AP</td>
<td>1/32 x 1-5/8 x 1-5/8</td>
<td>0.02</td>
</tr>
<tr>
<td>1</td>
<td>Adapter UG-145/AP</td>
<td>1/32 x 1-13/16 x 1-13/16</td>
<td>0.002</td>
</tr>
<tr>
<td>1</td>
<td>Gasket</td>
<td>1.659 od x 0.105 thk</td>
<td>0.094</td>
</tr>
<tr>
<td>1</td>
<td>Gasket</td>
<td>1.522 od x 0.092 thk</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Bag of Screws, Washers etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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UNCLASSIFIED

April 1958
UNCLASSIFIED

January 1958

TEST BENCH

TS-188/APS-4

No field changes in effect at time of preparation (10 July 1957).

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Company, New York, N.Y.
Contract NXsa-16394.
Contract NXsa-25502.
Contract NXsa-96394.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

NAVAER 08-55-78: Manual of Test Equipment for Airborne Electrical and Electronic Equipment.

FUNCTIONAL DESCRIPTION

TS-188/APS-4 is a rack designed for holding Radar Set AN/APS-4 to facilitate servicing. It is mobile and is equipped with a junction box and a set of cables similar to those used in an aircraft radar installation. It contains provisions for mounting the radar indicators, the indicator-amplifier, and the control box which are to be tested or serviced, and has a crank used for tilting the gear to any desired position.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIP</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test Bench TS-188/APS-4</td>
<td>36 X 42 X 60</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Junction Box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Set of Interconnecting Cables</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FUNCTIONAL DESCRIPTION

The TS-208/MPM is used with Test Antenna TS-210/MPM for aligning IFF receivers.
No field changes in effect at time of preparation (3 December 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 157 to 187 mc.
INPUT IMPEDANCE: 50 ohms.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Antenna TS-208/MPM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FUNCTIONAL DESCRIPTION

The TS-231/AP and TS-231A/AP are used as an RF load in aligning and testing radar sets. It provides a power-absorbing termination for the RF transmission line waveguide into which the radar transmitter can work without radiating energy into space.

No field changes in effect at time of preparation (18 April 1958).

RELATION TO OTHER EQUIPMENT

This equipment is identical with Dummy Antenna 66AHT and similar to Dummy Antenna TS-108/AP.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 8,600 to 9,600 mc.

POWER RANGE: 200 W (avg) at 7,000 v (peak).
VOLTAGE STANDING WAVE RATIO: 1.05 (max).
IMPEDANCE: 50 ohms.
TEMPERATURE RANGE: -40° C to +49° C.

MANUFACTURER'S OR CONTRACTOR'S DATA

TS-231/AP
Western Electric Co., New York, N.Y.
Contract N5sr-11831, 10 August 1945.
Contract NObsr-52001.
King Microwave Co., Inc, New Rochelle, N.Y.
Contract NObsr-52511, 29 May 1951.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.
dummy antenna

REFERENCE DATA AND LITERATURE

NAVSHIPS 92125: Technical Manual for Dummy Antenna TS-231A/AP.

TYPE CLASSIFICATION
DESIGN COGNIZANCE: BUSHIPS
PROCUREMENT COGNIZANCE: Navy Spec RE-13A1027
STOCK NO.: (TS-231/AP) CS-745
R.D.B. IDENT. NO.: (TS-231A/AP)

SHIPPING DATA

<table>
<thead>
<tr>
<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Antenna TS-231/A/ P w/carrying case</td>
<td>0.44</td>
<td>2-1/2 x 3-3/4 x 8-1/8</td>
<td>2.28</td>
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EQUIPMENT SUPPLIED DATA

<table>
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<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Antenna TS-231/A/P</td>
<td>1-3/4 x 2 x 7-1/4</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>Dummy Antenna TS-231A/A/P including:</td>
<td>1-3/4 x 2 x 7</td>
<td>0.812</td>
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<tr>
<td>1</td>
<td>Carrying Case CY-1939/U</td>
<td>2-1/4 x 3-1/2 x 7-7/8</td>
<td>0.877</td>
</tr>
</tbody>
</table>
UNCLASSIFIED

Test-Associated Devices

December 1956

DUMMY LOAD

TS-234/UP

RELATION TO OTHER EQUIPMENT

EQUIPMENT REQUIRED BUT NOT SUPPLIED (1)

Meter Cable.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY: 2 mc, maximum.
POWER RATINGS: 18000 W.
PEAK OPERATING VOLTAGE: 5000 v.
NOMINAL IMPEDANCE: 16 ohms.

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co. New York, N.Y. Pt/dwg-BX-409129,
CONTRACT-NXss-38866, dated--,
NObsr-42337, dated 14 May 1948.
Approximate Cost: $330.00 With Equipment Spares.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes

REFERENCE DATA AND LITERATURE

NAVSHIPS-900458(A) Technical Manual for
Dummy Load TS-234/UP.

TYPE CLASSIFICATION
DESIGN COGNIZANCE USAF
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
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<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load TS-234/UP</td>
<td>8 x 9-3/16 x 18-1/2</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>Cord CG-40/TPS-1</td>
<td>72</td>
<td>5/16</td>
</tr>
</tbody>
</table>

UNCLASSIFIED
25 May 1962
Cog Service: USAF
FSN: DUMMY LOAD TS-234A/UP

USA


FUNCTIONAL DESCRIPTION:

Dummy Load TS-234A/UP absorbs power pulses from modulators of radars. It is used to terminate the modulator output during radar performance tests. The dummy load presents a 16 ohm resistance to pulse voltage. The unit contains a voltage divider circuit connected to a meter jack on the front panel. This meter circuit affords a convenient means of measuring and viewing the output pulse of the modulator with an oscilloscope.

No field changes in effect at time of preparation (13 March 1962).

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 0 to 2 mc.
POWER DISSIPATION RATING: 1,275 W.
VOLTAGE RATING: 5,000 v.
VOLTAGE DIVISION RATIO: 100:1.
INPUT IMPEDANCE: 16 ohms, resistive.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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<tbody>
<tr>
<td>1</td>
<td>Dummy Load TS-234A/UP includes:</td>
<td>8 x 9-3/16 x 18-1/2</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cord CG-40A/TPS-1</td>
<td>72 g</td>
<td>0.31</td>
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</tr>
</tbody>
</table>

REFERENCE DATA AND LITERATURE: None.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.
CRYSTALS: None used.
SEMICONDUCTORS: None used.
## TS-234A/UP Dummy Load

### Shipping Data

<table>
<thead>
<tr>
<th>PKGS</th>
<th>Volume (Cu Ft)</th>
<th>Weight (LBS)</th>
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</table>

### Procurement Data

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<thead>
<tr>
<th>Procuring Service: USAF</th>
<th>Design COG: USAF, RADC</th>
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<tbody>
<tr>
<td>Spec &amp;/or DWG: USAF Exhibit ENG-275; MIL-D-4835A</td>
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<table>
<thead>
<tr>
<th>Contractor</th>
<th>Location</th>
<th>Contract or Order No.</th>
<th>Approx. Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Manufacturing Co.</td>
<td>Bayonne, New Jersey</td>
<td>AF33(038)-21331</td>
<td></td>
</tr>
</tbody>
</table>
**FUNCTIONAL DESCRIPTION**

The TS-235B/UP is designed to be used for terminating a radio frequency (R.F.) transmission line to prevent propagating radio frequency radiations into the atmosphere. Its purpose is to simulate the impedance of the antenna and provide a proper load termination for the transmitter. It functions to absorb the output radio frequency energy of the transmitting device. The dummy antenna is employed in tuning, testing and trouble shooting radio frequency transmitting. The unit includes a test terminal connector probe for coupling test equipment to the transmission line, to enable signals to be measured through a known loss. This feature makes it easy to couple an echo box to the dummy antenna and facilitates measurement and waveform diagnosis of the radio frequency signal.

No field changes in effect at time of preparation (9 January 1959).

**RELATION TO OTHER EQUIPMENT**

The TS-235B/UP functions in the same manner as the preceding model TS-235A, it is electrically and mechanically interchangeable. But the fan and associated circuitry have been eliminated and maintenance parts differ.

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

- **STANDING WAVE RATIO:** 1.2 to 1 mat.
- **NOMINAL TERMINATING IMPEDANCE:** 50 ohms.
- **PROBE IMPEDANCE:** Approx 50 ohms.
- **PROBE COUPLING LOSS AT 1300 MC:** 50 db.
- **FREQUENCY RANGE:** 500 to 1,600 mc.
- **PEAK VOLTAGE:** 10,000 v.
- **POWER RATING:** 1000 W average, 10 kilovolts for 0.0008 duty cycle.

**MANUFACTURER'S OR CONTRACTOR'S DATA**

Lieco Inc., Oceanside, L.I., N.Y.
Contract N0br-71660.

**TUBE AND/OR CRYSTAL COMPLEMENT**

No Electron Tubes or Crystals used.
Test-Associated Devices

**TS-235B/UP**

**DUMMY LOAD ELECTRICAL**

**REFERENCE DATA AND LITERATURE**


**TYPE CLASSIFICATION**

DESIGN COGNIZANCE TASSA

PROCUREMENT COGNIZANCE

STOCK NO.

R.D.B. IDENT. NO. 11.7

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**SHIPPING DATA**

<table>
<thead>
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<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
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<tbody>
<tr>
<td>1</td>
<td>Dummy Load Electrical TS-235B/UP</td>
<td>0.76</td>
<td>6-1/2 X 8-1/4 X 25</td>
<td>21</td>
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</table>

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**EQUIPMENT SUPPLIED DATA**

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIP</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adapter Connector</td>
<td>0.625 dia X 7 X 7-5/64</td>
<td>10 oz</td>
</tr>
</tbody>
</table>

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April 1959
FUNCTIONAL DESCRIPTION

Dummy Load TS-253/AP is a portable rf waveguide-type equipment used in matching load absorbing rf energy output of radar sets under test without appreciable reflection or radiation. Application is in field and depot testing.

No field changes in effect at time of preparation (15 July 1959).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 23,500 to 24,500 mc.

POWER RANGE: 35 W (avg); 115 kw (peak).
VOLTAGE STANDING WAVE RATIO: 1.15 (max).
TEMPERATURE RANGE: -40° C to +55° C.
HUMIDITY RANGE: To 95%.
ALTITUDE RANGE: To 10,000 ft (operating); to 50,000 ft (non operating).

MANUFACTURER'S OR CONTRACTOR'S DATA

Bernard Rice's Sons Inc., New York, N. Y.
Order No. 490-DAY-45RA.
Order No. 879-45AR, dated 4 June 1945.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Antenna TS-253/AP Including:</td>
<td>1-1/4 X 1-1/2 X 6-1/16</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Transmission Line CG-362/U</td>
<td>1-9/16 lg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission Line CG-363/U</td>
<td>1-9/16 lg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Case CY-374/AP</td>
<td>2 X 3 X 8-1/2</td>
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</tr>
<tr>
<td>1</td>
<td>Instruction Book</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Voltage Divider TS-265/UP

FUNCTIONAL DESCRIPTION:

Voltage Divider TS-265/UP is a portable, general purpose test equipment designed to step down high ac voltages by a known stepdown ratio of either 10 to 1 or 100 to 1 to allow the pulses to be observed on a standard oscilloscope or synchroscope. All measurements are made on associated test equipment.

No field changes in effect at time of preparation (14 June 1962).

TECHNICAL CHARACTERISTICS:

AC VOLTAGE MAXIMUM INPUTS

10:1 RATIO SECTION: 5 kv, peak-to-peak.
100:1 RATIO SECTION: 50 kv, peak-to-peak.
**TS-265/UP VOLTAGE DIVIDER**

**RELATION TO OTHER EQUIPMENT:**

This equipment is similar to Voltage Divider TS-89/AP, is part of AN/MPM-6, -7, -11, and -15, and Radar Test Set AN/TPM-3.

**EQUIPMENT REQUIRED BUT NOT SUPPLIED:** None.

**MAJOR COMPONENTS**

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Voltage Divider TS-265/UP includes:</td>
<td></td>
<td>3 x 5 x 10</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>Adapter, Connector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cord</td>
<td></td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>Test Lead</td>
<td></td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>Test Lead</td>
<td></td>
<td>36</td>
<td></td>
</tr>
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**REFERENCE DATA AND LITERATURE:**

**TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:**

TUBES: None used.

CRYSTALS: None used.

SEMICONDUCTORS: None used.

**SHIPPING DATA**

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PROCUREMENT DATA**

PROCURING SERVICE: USA
DESIGN COG: USA, Sig C
SPEC &/OR DWG:

**CONTRACTOR**

<table>
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<tr>
<th>CONTRACTOR</th>
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<th>CONTRACT OR ORDER NO.</th>
<th>APPROX. UNIT COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sperry Gyroscope Co.</td>
<td>Great Neck, L.I., N.Y.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.11 TS-265/UP: 2
26 February 1963

MULTIPLIER, ELECTRICAL INSTRUMENT TS-265A/UP

Cog Service: USA  FSN:  Functional Class: 11.12

USA  USN  USAF

TYPE CLASS: Std


Multiplier, Electrical Instrument TS-265A/UP

FUNCTIONAL DESCRIPTION:

Multiplier, Electrical Instrument TS-265A/UP is a portable, general purpose test equipment designed to step-down high AC voltages by a known step-down ratio of either 10 to 1 or 100 to 1 to allow the pulses to be observed on a standard oscilloscope or synchroscope. All measurements are made on associated test equipment.

No field changes in effect at time of preparation (14 June 1962).

TECHNICAL CHARACTERISTICS:

AC VOLTAGE-DIVIDING RATIOS
10:1 RATIO SECTION: Form 5%.
100:1 RATIO SECTION: Form 5%.

AC VOLTAGE MAXIMUM INPUTS
10:1 RATIO SECTION: 5 kV, peak-to-peak.
100:1 RATIO SECTION: 50 kV, peak-to-peak.
TS-265A/UP MULTIPLIER, ELECTRICAL INSTRUMENT

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Multiplier, Electrical Instrument</td>
<td></td>
<td>5-3/8 x 4-3/4 x 6-3/4</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>TS-265A/UP includes:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Case, Test Set CY-1388/U</td>
<td></td>
<td>6-1/4 x 8-1/2 x 11-1/4</td>
<td>6.5</td>
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<tr>
<td>1</td>
<td>Adapter, Connector UG-1047/U</td>
<td></td>
<td>1-5/8 x 1-7/8 x 3-1/2</td>
<td>0.5</td>
</tr>
<tr>
<td>1</td>
<td>Cord CG-1047/U</td>
<td></td>
<td>120 lg</td>
<td>0.5</td>
</tr>
<tr>
<td>1</td>
<td>Test Lead</td>
<td></td>
<td>18 lg</td>
<td>0.5</td>
</tr>
<tr>
<td>1</td>
<td>Test Lead</td>
<td></td>
<td>36 lg</td>
<td>0.5</td>
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<tr>
<td>2</td>
<td>Technical Manual</td>
<td>TM11-6625-415-15</td>
<td></td>
<td></td>
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REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1.8</td>
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</table>

PROCUREMENT DATA

PROCURING SERVICE: USA

DESIGN COG: USA, Sig C

SPEC &/OR DWG: MIL-V-14274(Sig C)

<table>
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<tr>
<th>CONTRACTOR</th>
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<th>APPROX. UNIT COST</th>
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<tbody>
<tr>
<td>Forway Industries Inc.</td>
<td>Woodbury, N.J.</td>
<td>4568-PP-61-A3-A3</td>
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</tr>
</tbody>
</table>

4.11 TS-265A/UP: 2
FUNCTIONAL DESCRIPTION

The TS-307/ARW is a self-contained dummy load unit provided with a calibrated wattmeter which is used to measure the average power output of radio transmitters. It incorporates an internal RF transformer which makes available a fraction of the signal dissipated by the transmitter into the dummy load for monitoring purposes.

It is sometimes used, and supplied together with, Test Set TS-306/ARW which is used for the testing and setting of EM transmitters and receivers.

No field changes in effect at time of preparation (21 August 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER RANGE: 0 to 30 W.
FREQUENCY RANGE: 30 to 75 mc.
INPUT IMPEDANCE: 50 ohms.
OUTPUT VOLTS: 0.5 v for 30 W input.

MANUFACTURER'S OR CONTRACTOR'S DATA

Link Radio Corporation, New York, N.Y.
Contract NSsa-4660

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 1N34
Total Crystals: (1)

REFERENCE DATA AND LITERATURE


EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIP</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load TS-307/ARW</td>
<td>3-3/4 X 6-1/2 X 5-1/2</td>
<td>1.75</td>
</tr>
<tr>
<td>1</td>
<td>Technical Manual AN16-35 TS306-3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UNCLASSIFIED
Functional Description

The TS-329/U provides an RF output load for bench testing of transmitters. It consists of a noninductive 50 ohm resistance in series with a 0 to 500 RF millimeter. It is used with Radio Set AN/ARC-1, Radio Transmitting-Receiving Equipment AN/ARC-4 and Radio Equipment AN/ARC-4.

No field changes in effect at time of preparation (May 1958).

Relation to Other Equipment

The TS-329/U is identical to Antenna A-68-A.

Electrical and Mechanical Characteristics

Frequency Range: 0 to 160 mc.  
Max Power: 12.5 W.

Impedance: 50 ohms at 160 mc.

Manufacturer's or Contractor's Data

Western Electric Co., New York, N. Y.  
Contract NOas-5423, NXsa-51579, and  
NXsa-71336.  
Manufactured by General Industries Co.,  
Elyria, Ohio  
Approximate Cost: $13.00 with equipment spares.

Tube and/or Crystal Complement

No Electron Tubes or Crystals Used.

Reference Data and Literature

NAVAER 08-55-78: Technical Manual of Test Equipment.
**Test-Associated Devices**

**TS-329/U**

**DUMMY ANTENNA**


<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Antenna TS-329/U</td>
<td>3 x 4 x 5</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>Cable, Astatic No. US-23167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Technical Manual</td>
<td></td>
<td></td>
</tr>
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</table>

4.11 TS-329/U: 2
FUNCTIONAL DESCRIPTION

The TS-338/UP is designed to be used in place of the antenna when bench testing a radar transmitter. It is used to properly terminate and load the radar transmitter of AN/APS-20 and AN/APS-20A.

No field changes in effect at time of preparation (15 July 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2500 to 3750 mc.
DISSIPATION: 600 W average power or 1 megawatt peak power for 4 hrs continuously.

VSWR
ADAPTOR ATTACHED: 1.2 to 1.
WITHOUT ADAPTOR: 1.1 to 1.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Company, Schenectady, N.Y.
Contract Nxs-66725.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

NAVAER 08-SS-78: Manual of Test Equipment for Airborne Electrical and Electronic Equipment.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load TS-338/UP</td>
<td>6 x 7-1/2 x 25</td>
<td>25</td>
</tr>
<tr>
<td>1</td>
<td>Cover, Metal Disc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Transmission Line CG-384/U</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UNCLASSIFIED
VOLTAGE DIVIDER

FUNCTIONAL DESCRIPTION

Voltage Divider TS-359/U is a portable unit used with a synchroscope or cathode-ray oscilloscope in measuring or viewing output pulses from modulators of medium-power radar sets.

No field changes in effect at time of preparation (17 July 1959).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: Above 5,000 cy.

VOLTAGE RANGE: 35 kv (peak).
CAPACITANCE: 30 uuf.
TEMPERATURE RANGE: -35° C to +65° C.
HUMIDITY RANGE: 0 to 95%.

MANUFACTURER’S OR CONTRACTOR’S DATA

Radiation Laboratory.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Voltage Divider TS-359/U.

<table>
<thead>
<tr>
<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Voltage Divider TS-359/U</td>
<td>9-5/8 X 6-1/2 dia</td>
<td>5.75</td>
</tr>
</tbody>
</table>

UNCLASSIFIED
**Functional Class:** 11.7

**TYPE CLASS:**

**MANUFACTURER'S NAME/CODE NUMBER:** Munston Mfg. and Service Co., Inc., (74096).

---

**FUNCTIONAL DESCRIPTION:**

Dummy Load, Electrical TS-366B/TPS-10 is a portable resistor-type unit used in absorbing the rf output of modulators to prevent radiation during testing.

No field changes in effect at time of preparation (13 March 1962).

**TECHNICAL CHARACTERISTICS:**

- **POWER RANGE:** 320 W (avg); 1,257 W (peak).
- **IMPEDEANCE:** 50 ohms.

**RELATION TO OTHER EQUIPMENT:** None.

**EQUIPMENT REQUIRED BUT NOT SUPPLIED:** None.

*4.11 TS-366B/TPS-10: 1*
# TS-366B/TPS-10 Dummy Load, Electrical

## Major Components

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical TS-366B/TPS-10</td>
<td></td>
<td>3-1/2 x 5-5/8 x 15-1/4</td>
<td>4-1/2</td>
</tr>
</tbody>
</table>

## Reference Data and Literature:

- TO 33AA7-22-1: Operation and Service Instructions for Dummy Load TS-366B/TPS-10.
- TO 33AA7-22-4: Parts Catalog for Dummy Load TS-366B/TPS-10.

## Tube, Crystal and/or Semi-Conductor Data:

- TUBES: None used.
- CRYSTALS: None used.
- SEMI-CONDUCTORS: None used.

## Shipping Data

<table>
<thead>
<tr>
<th>PKGS</th>
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<tr>
<td>1</td>
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<td>10</td>
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</table>

## Procurement Data

- **Procuring Service:** USAF
- **Design COG:** USAF, RADC
- **Spec &/or Dwg:**

<table>
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<tr>
<th>Contractor</th>
<th>Location</th>
<th>Contract or Order No.</th>
<th>Approx. Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munson Mfg. and Service Co., Inc.</td>
<td>New York, New York</td>
<td>AF33(038)12588</td>
<td>$85.00</td>
</tr>
</tbody>
</table>
ELECTRICAL DUMMY LOAD
TS-366C/TPS-10

FUNCTIONAL DESCRIPTION

The TS-366C/TPS-10 is a portable, special purpose, resistor type modulator dummy load used to absorb radio frequency output of Modulator MD-141A/TPS-10 to prevent radiation during test. It has provisions for attaching to an oscilloscope for viewing the pulsed output of the modulator, includes a voltage divider with a 100 to 1 ratio to permit viewing of the high voltage pulses.

No field changes in effect at time of preparation (13 December 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING FREQUENCY: 0 to 2 mc.
POWER DISSIPATION: 320 w, 7500 v peak.

MANUFACTURER'S OR CONTRACTOR'S DATA

Artisan Electronics Corp, Morristown, N.J.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE


EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dummy Load, Electrical TS-366C/TPS-10</td>
<td>3-3/8 x 5-11/16 x 13-5/8</td>
<td></td>
</tr>
</tbody>
</table>

4.11 TS-366C/TPS-10: 1
FUNCTIONAL DESCRIPTION

The TS-378/UP primary purpose is to be used as a seal in order to test sections of waveguides for air leaks. It consists of a brass plate designed to be mounted on a 1-1/2 by 3 inch waveguide flange which is provided with an air valve to permit pressurizing.

No field changes in effect at time of preparation (16 July 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Pump.

MANUFACTURER'S OR CONTRACTOR'S DATA

Gisholt Machine Company, Madison, Wis.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

NAVAER 08-55-78: Manual of Test Equipment for Airborne Electrical and Electronic Equipment.

EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pressurizing Plate TS-378/UP</td>
<td>1/4 x 5-1/8 dia</td>
<td>1.5</td>
</tr>
<tr>
<td>2</td>
<td>Allen Wrench</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Nut and Bolt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Set of Valve Parts and Fittings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UNCLASSIFIED
FUNCTIONAL DESCRIPTION

The TS-665/U is designed as an assembly consisting of a number precision resistors varying in submultiples and multiples of ten, inclosed in a box with convenient means of selecting any desired ohmic value within its range.

No field changes in effect at time of preparation (9 October 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

RANGE DATA
- RANGE: 0 to 1110 ohms.
- INCREMENTS: 1 ohm.
- ACCURACY: ±0.1% accuracy on 10 and 100 ohm steps; ±0.25% accuracy on 1 ohm steps.
- TYPE OF ADJUSTMENT: Rotary switch type.
- NUMBER OF ADJUSTMENTS: 3.

MANUFACTURER'S OR CONTRACTOR'S DATA


TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE


EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
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<th>WEIGHT (lbs.)</th>
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<tbody>
<tr>
<td>1</td>
<td>Decade Resistor TS-665/U</td>
<td>5 X 5 X 10-3/8</td>
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</table>

UNCLASSIFIED

4.11 TS-665/U: 1
1 March 1963

<table>
<thead>
<tr>
<th>Functional Class: II</th>
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<tbody>
<tr>
<td>USA</td>
</tr>
<tr>
<td>USN</td>
</tr>
<tr>
<td>USAF</td>
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</tbody>
</table>

**TYPE CLASS:**

Std

**MANUFACTURER’S NAME/CODE NUMBER:** Radio Frequency Laboratory, (49673).

---

**Decade Capacitor TS-671/U**

**FUNCTIONAL DESCRIPTION:**

Decade Capacitor TS-671/U is a portable, general purpose unit used for the test and repair of electrical and electronic equipment. Test results are indicated by the proper operation of the equipment under test. The Decade Capacitor is composed of paper and electrolytic capacitors used to give a range of capacities. The capacitors are individually terminated in jacks with a common negative terminal.

No field changes in effect at time of preparation (10 August 1962).

**TECHNICAL CHARACTERISTICS:**

- RANGE: 0.0001 to 48 uf.
- TOLERANCE: Form 10% (paper); 0 to 75% (electrolytic).
- VOLTAGE RATINGS: 500 v dc (paper); 450 v dc (electrolytic).
TS-671/U DECADE CAPACITOR

RELATION TO OTHER EQUIPMENT:

This equipment is part of Test-Tool Set AN/USM-3, AN/USM-3A, and AN/USM-38.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>STOCK NUMBERS</th>
<th>DIMENSIONS (INCHES)</th>
<th>WEIGHT (LBS)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Decade Capacitor TS-671/U</td>
<td></td>
<td>1-1/4 x 4-3/8 x 4-3/4</td>
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</tr>
</tbody>
</table>

REFERENCE DATA AND LITERATURE:


TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.
CRYSTALS: None used.
SEMI-CONDUCTORS: None used.

SHIPPING DATA

<table>
<thead>
<tr>
<th>PKGS</th>
<th>VOLUME (CU FT)</th>
<th>WEIGHT (LBS)</th>
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PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:
DESIGN COG: USN, BuShips

<table>
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<tr>
<th>CONTRACTOR</th>
<th>LOCATION</th>
<th>CONTRACT OR ORDER NO.</th>
<th>APPROX. UNIT COST</th>
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<tbody>
<tr>
<td>Radio Frequency Laboratory</td>
<td>Boonton, New Jersey</td>
<td>NObsr-42100, 17 February 1948</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>NObsr-52269, 23 May 1951</td>
<td></td>
</tr>
<tr>
<td>Newark Controls Company</td>
<td>Bloomfield, New Jersey</td>
<td>NObsr-64817, 16 June 1955</td>
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</tr>
</tbody>
</table>

4.11 TS-671/U: 2
RESISTOR DECADE

FUNCTIONAL DESCRIPTION

The TS-679/U is designed as an assembly consisting of a number of precision resistors varying in submultiples and multiples of ten, inclosed in a box with convenient means of selecting any desired ohmic value within its range.

No field changes in effect at time of preparation (10 October 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

RANGE DATA

RANGE: 0 to 111,111 ohms.
INCREMENT: 0.1 ohm.
ACCURACY: 0.25% accuracy on the 1 ohm step; 1% accuracy on the 0.1 ohm step; 0.1% accuracy on all other steps.
NUMBER OF ADJUSTMENTS: 6 adjustments.
TYPE OF SWITCH: Rotary switch.

MANUFACTURER'S OR CONTRACTOR'S DATA

Project 24630-PH-49-7(SC), dated 16 August 1950.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals Used.

REFERENCE DATA AND LITERATURE


<table>
<thead>
<tr>
<th>TYPE CLASSIFICATION</th>
<th>DESIGN COGNIZANCE</th>
<th>PROCUREMENT COGNIZANCE</th>
<th>STOCK NO.</th>
<th>R.D.B. IDENT. NO.</th>
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<tr>
<td>TASSA</td>
<td>71-3337</td>
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EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
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<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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<tbody>
<tr>
<td>1</td>
<td>Resistor Decade TS-679/U</td>
<td>5 X 5 X 18</td>
<td></td>
</tr>
</tbody>
</table>
PHANTOM ANTENNA AND ATTENUATOR TS-74/UPM

FUNCTIONAL DESCRIPTION

The TS-74/UPM is a power absorbing termination for rf transmission lines used in testing radar sets. A probe for coupling test equipment to the transmission line is included so that sensitivity, frequency and power measurements may be made with suitable measuring equipment.

No field changes in effect at time of preparation (16 April 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2,700 to 3,400 mc.
POWER DISSIPATION: 200 W (max avg); 250 KW (max peak).
VOLTAGE STANDING WAVE RATIO: 1.5 or 1.19 db (max).
INPUT IMPEDANCE: 50 or 72 ohms.
ATTENUATION: 25 to 30 db.
COUPLING LOSS: 36 db ±0.5 db.
TEMPERATURE RANGE: -40 deg F to +120 deg F.

MANUFACTURER'S OR CONTRACTOR'S DATA

Galvin Mfg Corp, Chicago, Ill.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

AN 16-35TS74-2: Handbook of Maintenance Instructions for Phantom Antenna and Attenuator TS-74/UPM.
# Test-Associated Devices

## TS-74/UPM

### PHANTOM ANTENNA AND ATTENUATOR

#### SHIPPING DATA

<table>
<thead>
<tr>
<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
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<tbody>
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#### EQUIPMENT SUPPLIED DATA

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<tr>
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<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phantom Antenna and Attenuator TS-74/UPM Including:</td>
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<td>10</td>
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<tr>
<td>1</td>
<td>Technical Manual AN16-35TS74-2</td>
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</tr>
<tr>
<td>1</td>
<td>Tapered Center Conductor 50 ohm</td>
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<tr>
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<td>Tapered Center Conductor 72 ohm</td>
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<td>2</td>
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<td>4</td>
<td>Adapter for Center Conductor 72 ohm</td>
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<tr>
<td>1</td>
<td>Cup</td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>Tapered Outer Conductor</td>
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<tr>
<td>2</td>
<td>Line Coupling</td>
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</table>
TEST SET TS-78/U, -79/U, -80/U

Test Set for AN/ARC-1 and AN/ARC-4; TS-78/U, TS-79/U, TS-80/U

FUNCTIONAL DESCRIPTION

The TS-78/U Phantom Transmitter Antenna, TS-79/U Phantom Receiver Antenna, and TS-80/U Test Meter are combined as a single unit for aircraft VHF radio communication equipments. Application is in field and bench testing.

No field changes in effect at time of preparation (14 April 1958).

RELATION TO OTHER EQUIPMENT


ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE
TS-78/U: 100 to 156 mc.
TS-79/U: 100 to 156 mc.

LOAD
TS-78/U: 50 ohms, 12 W.
TS-79/U: 50 ohms, 0.5 W.

CURRENT RANGE: 0 to 1 ma DC (TS-80/U).
RESISTANCE: 125 ohms (TS-80/U).

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co., New York, N. Y.
Contract Nxsa-71322 (TS-80/U).

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals Used.

REFERENCE DATA AND LITERATURE

## TEST SET

**Test-Associated Devices**

**TS-78/U,-79/U,-80/U**

### EQUIPMENT SUPPLIED DATA

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Phantom Transmitter Antenna TS-78/U</td>
<td>2 dia x 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or Phantom Receiver Antenna TS-79/U</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>or Test Meter TS-80/U including Alignment Tool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td><strong>TS-78/U:</strong> 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

April 1958

UNCLASSIFIED
FUNCTIONAL DESCRIPTION

The TS-83/ASQ-3 is a test fixture with a mechanism to permit simulating the roll and pitch of an aircraft, and a yoke for mounting Magnetic Loop Assembly DT-2/ASQ-3 or DT-4/ASQ-3A. The yoke may be locked in place when it is used with Test Mechanism TS-84/ASQ-3.

It is a part of a test set used for testing AN/ASQ-3 and AN/ASQ-3A equipments designed for magnetic detection of submarines from aircraft.

No field changes in effect at time of preparation (9 September 1957).

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Company, New York, N.Y. NOas-833.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

NAVAER 08-5S-78: Technical Manual for Airborne Electrical and Electronic Equipment.

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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<tbody>
<tr>
<td>1</td>
<td>Test Bench TS-83/ASQ-3</td>
<td>17-1/2 x 30-1/2 x 40</td>
<td>56.5</td>
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UNCLASSIFIED
VOLTAGE DIVIDER

**FUNCTIONAL DESCRIPTION**

The TS-89/AP, TS-89A/AP, and TS-89B/AP are portable equipment used with an oscilloscope in measuring video pulse voltages in high impedance circuits. Application is in field and depot testing.

No field changes in effect at time of preparation (15 April 1958).

**RELATION TO OTHER EQUIPMENT**

**FREQUENCY RANGE:** 150 cycle to 5 mc (video).
**VOLTAGE RANGE:** 200 to 2,000 v; 2,000 to 20,000 v.
**INPUT IMPEDANCE:** 2,000 ohms in series with 10 uuf.
**OUTPUT IMPEDANCE:** 4 meg in parallel with 20 uuf.
**ATTENUATION RATIO:** 10:1 for 200 to 2,000 v; 100:1 for 2,000 to 20,000 v.
**FREQUENCY RESPONSE:** ±1 db.
**PULSE DURATION:** 1 to 100 usec.

**MANUFACTURER'S OR CONTRACTOR'S DATA**

**TS-89/AP**
Western Electric Co, NY, NY.
Contract NAER 00168.
Contract NAER 00340.

**TS-89A/AP**
Century Metalcraft Corp, Los Angeles, Calif.
Contract AF33(600)-8715, dated 20 Feb 1952.

**TS-89B/AP**
Mercury Electronics Corp, Red Bank, N.J.

**TUBE AND/OR CRYSTAL COMPLEMENT**

No Electron Tubes or Crystals used.

**REFERENCE DATA AND LITERATURE**

AN16-35TS89-3: Handbook of Maintenance Instruction for Voltage Divider TS-89/AP.

**SHIPPING DATA**

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<thead>
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<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT PACKED (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Voltage Divider TS-89/AP, TS-89A/AP or TS-89B/AP (Shelf package, water-resistant carbon)</td>
<td>0.25</td>
<td>6 x 6 x 12</td>
<td>6</td>
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</table>

UNCLASSIFIED
<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
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<th>WEIGHT (lbs.)</th>
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<tr>
<td>1</td>
<td>TS-89/AP</td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Voltage Divider TS-89/AP including:</td>
<td>4 x 5 x 10</td>
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<tr>
<td>1</td>
<td>Test Lead</td>
<td>39 1g or 60 1g</td>
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</tr>
<tr>
<td>1</td>
<td>Technical Manual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TS-89A/AP</td>
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<tr>
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<td>Voltage Divider TS-89A/AP including:</td>
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<td>1</td>
<td>Technical Manual</td>
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<td></td>
<td>TS-89B/AP</td>
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<td>Voltage Divider TS-89B/AP including:</td>
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<tr>
<td>1</td>
<td>Test Lead CX-2409/U</td>
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</tr>
<tr>
<td>1</td>
<td>Technical Manual</td>
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</table>
FUNCTIONAL DESCRIPTION

The TS-90/AP is designed to provide a 50 ohm termination for making over-all performance test on the modulator of radars such as AN/TPS-1 and Mark 20.

The termination is in the form of a voltage divider of known ratio for the purpose of measuring and viewing the output pulse of the modulator with an oscilloscope.

No field changes in effect at time of preparation (16 July 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

The dummy load provides a 50 ohm termination into which the modulator can work. The load is made up of one 49 ohm resistance element and a one ohm element connected in series providing the 50 to 1 ratio voltage divider used to measure the output of the modulator.

The resistors together are capable of standing about 500 watts of power at a peak voltage of about 5000 volts. The electrical connection to the modulator is made with high voltage pulse cable of the radar system.

MANUFACTURER'S OR CONTRACTOR'S DATA


TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.
**Test Associated Devices**

**TS-90/AP**

**DUMMY LOAD**

**REFERENCE DATA AND LITERATURE**

NAVSHIPS 900,533: Technical Manual for Load TS-90/AP.

**EQUIPMENT SUPPLIED DATA**

<table>
<thead>
<tr>
<th>QUANTITY PER EQUIPT</th>
<th>NAME AND NOMENCLATURE</th>
<th>OVERALL DIMENSIONS (Inches)</th>
<th>WEIGHT (lbs.)</th>
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<tbody>
<tr>
<td>1</td>
<td>Dummy Load TS-90/AP</td>
<td>6 X 6-1/2 X 20</td>
<td>9</td>
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</tbody>
</table>

**UNCLASSIFIED**
ALIGNMENT TEST BENCH

TS-95/AX

FUNCTIONAL DESCRIPTION

The TS-95/AX incorporates in a single unit the facilities for testing block I and block III equipments and is used with the TS-93/AX Projector. It is designed to accommodate these equipments in a desirable test position, while maintaining optical alignment with the projector. All components are mounted in the steel cabinet which comprises the bench.

No field changes in effect at time of preparation (15 July 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

DUMMY LOAD DATA

MAXIMUM RF DISSIPATION: 25 W average.
IMPEDANCE: 50 ohms at 380 to 250 mc, approaches 72 ohms at 250 to 100 mc.
STANDING WAVE RATIO: 75% min, 100 to 380 mc.
POWER REQUIREMENTS: 115 v, 50 to 60 cps.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

NAVAER 08-55-78: Manual of Test Equipment for Airborne Electrical and Electronic Equipment.
## Test-Associated Devices

### TS-95/AX

#### ALIGNMENT TEST BENCH

<table>
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<tr>
<th>QUANTITY PER EQUIPT</th>
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<tr>
<td>1</td>
<td>Alignment Test Bench TS-95/AX including:</td>
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<tr>
<td></td>
<td>Dummy Load</td>
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</table>

January 1958
The TS-98/AP is designed for use in testing the air units of the modulators of certain radar systems such as AN/TPS-1 and Mark XX. It provides a termination which replaces the oil unit and enables the air unit to operate without an oil unit. Arrangements are included in the divider for measuring the output of the air unit without exposing the operator to voltages that are dangerous to human life. No field changes in effect at time of preparation (13 July 1956).

The voltage divider provides an 800 ohm termination for the output pulse circuit of the air unit. The resistors of the divider form three voltage dividers of known ratios for measuring various voltages of the air unit of the modulator.

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

The voltage divider provides an 800 ohm termination for the output pulse circuit of the air unit. The resistors of the divider form three voltage dividers of known ratios for measuring various voltages of the air unit of the modulator.

**FACTORY DATA AND CONTRACTOR'S DATA**

Western Electric Company, Inc., New York N.Y.
Contract NOord 3456.

**TUBE AND/OR CRYSTAL COMPLEMENT**

No Electron Tubes.

**REFERENCE DATA AND LITERATURE**

DUMMY LOAD

FUNCTIONAL DESCRIPTION

Dummy Load 14ACN is for use with the SX Radar Equipment to dissipate the pulse power from the modulator. It is a self-contained unit complete with blower and air filter.

No field changes in effect at time of preparation (25 April 1960).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER: 115 v, 60 cyc, single ph, 1.5 amp.
OPERATING FREQUENCY: 4.5 mc.  
INPUT IMPEDANCE: 50 ohms.  
POWER RATING: 3 kw (avg).

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Co., Schenectady, N.Y.  
Contract NXsr-76195 dated 12 September 1944.  
Contract NXsr-96353 dated 13 March 1945.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

SHIPPING DATA

<table>
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<th>NUMBER OF BOXES</th>
<th>CONTENTS AND IDENTIFICATION</th>
<th>VOLUME (Cu.Ft.)</th>
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<th>WEIGHT PACKED (lbs.)</th>
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<tr>
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EQUIPMENT SUPPLIED DATA

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<th>OVERALL DIMENSIONS (inches)</th>
<th>WEIGHT (lbs.)</th>
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<tbody>
<tr>
<td>1</td>
<td>Dummy Load 14ACN includes:</td>
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<td>1</td>
<td>Pulse Cable</td>
<td>9-3/8 X 16-3/4 X 20-1/8</td>
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<td>Spare Parts</td>
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</table>

4.11 14ACN: 2
FUNCTIONAL DESCRIPTION

Adapter Set Navy Type-49416 consists of five different tube socket adaptors designed to permit the testing of certain large tubes when using Vacuum Tube Analyzing Equipments Models OD Series, or Vacuum Tube Testing Equipments Model OQ Series.

No field changes in effect at time of preparation (5 May 1958).

RELATION TO OTHER EQUIPMENT

Adapter Set Navy Type-49416 is similar to Adapter Set Navy Type-49598. The latter does not include Adapter NT-49414. Navy Type-49416 provides a means of testing type 316A, 703A, 707A, 708A, and 446 electron tubes with Vacuum Tube Testers Navy Models OD and OQ.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

These adapters are made to withstand a breakdown voltage test of 1000 volts ac, between pin terminals.

NT-49411: 4 round male contacts one end, 4 round female contacts other end. Adapts 316A tubes to UX four prong socket, straight type.

NT-49412: 4 round male contacts one end, 4 round female contacts other end. Adapts 703A tubes to standard UX four prong socket, straight type.

NT-49413: 1 round male contact one end, 4 spring leaf contacts other end. Permits use of 707A tubes without resonant cavity, straight type. Has a U shaped shell shell connected to GR type 274U jack by cable.

NT-49414: 4 round male contacts one end, 4 round female contacts other end. Adapts 708A tube to UX four prong sockets, straight type.

NT-49415: 1 round male contact one end, spring leaf contact other end. Permits use of GL-446 tubes without coaxial mounting. Straight type, includes cylindrical shell connected to GR type 274U jack by cable.

MANUFACTURER’S OR CONTRACTOR’S DATA

Weston Electrical Instrument Corp., Newark, N.J.
Contract NXs-28614.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

NAVSIPS 93003 VOL I: Electronic Test Equipment.

EQUIPMENT SUPPLIED DATA

<table>
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<th>QUANTITY</th>
<th>NAME AND NOMENCLATURE</th>
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<tr>
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<td>Adaptor NT-49411</td>
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<tr>
<td>1</td>
<td>Adaptor NT-49412</td>
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<tr>
<td>1</td>
<td>Adaptor NT-49413</td>
<td>3/4 x 1-3/8 x 1-7/8</td>
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<tr>
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<td>Adaptor NT-49414</td>
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<tr>
<td>1</td>
<td>Adaptor NT-49415</td>
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</tr>
<tr>
<td>1</td>
<td>Clip Lead</td>
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</tr>
<tr>
<td>1</td>
<td>Wooden Box</td>
<td></td>
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</tr>
</tbody>
</table>
FUNCTIONAL DESCRIPTION

The Navy Type 49992 adaptor kit is a set of tube socket adaptors which can be placed in tube sockets so that electrical measurements can be made at the tube location. The tube is placed in the adaptor so that the circuit may operate as usual, except for a few VHF and UHF circuits, where tube capacitors are especially important.

Data on this sheet reflects the following field changes: F/C No. 1 for NT-49992.

RELATION TO OTHER EQUIPMENT

The adaptors in this kit are also a part of Navy Model OE-12 Series Radio Receiver Analyzing Equipment. Field change No. 1-49992 provides a metal case so that this adaptor kit may be used as a separate equipment.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

The adaptor kit consists of eight adaptors.
and an adaptor puller. A drilled oak block was originally supplied, but is discarded when Navy Field Change No. 1-49992 is applied. The adaptors are provided with tabs connected to each tube pin for measurement of potential or resistance. They are suitable for use with all commonly used tube types. Navy Field Change No. 1-49992 provides a metal case to stow the adaptors and adaptor puller.

MANUFACTURER'S OR CONTRACTOR'S DATA
Weston Electrical Instrument Corp., Newark, N.J. Contract NObsr-39232.

TUBE AND/OR CRYSTAL COMPLEMENT
No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE
NAVSHIPS 900,781(A): Instructions for Adaptor Kit Navy Type CV-49992.

EQUIPMENT SUPPLIED DATA

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<th>WEIGHT (lbs.)</th>
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<tbody>
<tr>
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<td>4 Prong Adaptor NT-49514</td>
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</tr>
<tr>
<td>1</td>
<td>5 Prong Adaptor NT-49515</td>
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</tr>
<tr>
<td>1</td>
<td>6 Prong Adaptor NT-49516</td>
<td>3/4 x 1-3/8 dia</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7 Prong Adaptor NT-49517</td>
<td>3/4 x 1-3/8 dia</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7 Prong Adaptor NT-49527</td>
<td>3/4 x 1-3/8 dia</td>
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</tr>
<tr>
<td>1</td>
<td>Octal Adaptor NT-49518-A</td>
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<td>1</td>
<td>Loctal Adaptor NT-49528</td>
<td>1-1/16 x 1-3/8 dia</td>
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</tr>
<tr>
<td>1</td>
<td>Miniature Adaptor NT-49519</td>
<td>31/32 dia x 1-1/4</td>
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<tr>
<td>1</td>
<td>Adaptor Puller</td>
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</tr>
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<td>1</td>
<td>Storage Box NT-11968</td>
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