

# ELECTRONIC SALES

SERVING THE ELECTRONIC INDUSTRY SINCE 1946

We Supply....

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GOVERNMENT AGENCIES

AMATEUR ■ INDUSTRIAL

COMMERCIAL ■ AIRCRAFT

MARINE ■ HOBBYIST

PRICE  
50¢



27 HOLLYWOOD FR  
AT WESTERN AVE  
SOUTH TO PICO, WEST  
TO 4265

WE SHIP  
TO BUYERS  
THROUGHOUT  
THE WORLD

**WORLD CAPITAL FOR RADIO EQUIPMENT • LOWEST PRICES YET!**  
**COLUMBIA ELECTRONIC SALES 4365 WEST PICO BLVD, LOS ANGELES 19, CALIFORNIA**

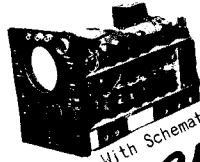
# COLUMBIA

# THE ELECTRONIC DISCOUNT CENTER

**SUPER SERVICE AND RELIABILITY!**

## 1D-6/APN-4 LORAN INDICATORS

Easily converted to a scope for TV or Radio with 5CPI C.R.T. & 27 other TV tubes, plus 100 KC crystal. Tubes and shield worth the price alone!



With Schematic  
**\$8.95 ea.**  
10 For \$75.00

Includes: 15-6SN7 7-6H6 3-6SL7 1-6SJ7 1-5CPI  
1D-6/APN-4 Ex. Cond. with case ea. \$ 8.95

## AN/APT-5 UHF HI POWER TRANSMITTER

300-1400 MC -30 WATTS VFO-OSC  
BUILT IN FILAMENT SUPPLY

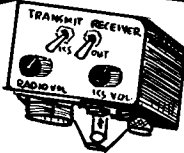
consists of a lighthouse tube 3C22 oscillator in a precision tunable cavity modulated by 2 type 829B tubes driven by a 931 noise generating photocell. Output approx. 30 Watts CW 115 V. 400 Cyc. (power supply can be supplied at additional cost)

**\$24.95**



With Schematic PP-104/APT-5 115/1/400 Power Supply for above Ex. Cond

## C-173/AIC-4 CONTROL BOX



C-173/AIC-4 Control Box  
Contains standard mike jack (1 ea.)  
1 ea. Standard phone jack  
2 ea. DPDT toggle switches  
2 ea. Pots with knobs  
1 ea. DPDT 24V. DC relay  
Brand New ea. 95¢ 10/\$7.50

**95¢ ea.**

## SCR-625 MINE-DETECTOR

Extra Special Buy!



With Tech Manual

Set of New Dry Batteries, \$4.95  
For Prospectors, Miners, Oil Companies, Plumbers, Etc.

## SCR-625 Famous ARMY MINE-DETECTOR

For Prospectors, Miners, Oil Companies, Plumbers, etc. Portable unit for locating all types of buried metal objects up to 24" or more depending on size and ground condition. Detection by means of a tone. Packed in a chest. Operating weight approx. 15 lbs. Shipping wt. approx. 40 lbs.

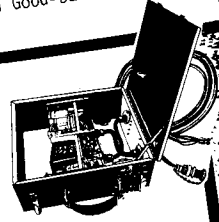
**\$19.95**

## METER Specials



- ALL NEW! WESTINGHOUSE MARION G.E.
- 0-15V. DC. 2 1/2" RD Westinghouse \$2.95
  - 0-36V. DC. 2 1/2" RD Marian 18-36V \$2.95
  - expanded scale \$2.95
  - 0-250MA. RF 2 1/2" RD General Electric \$4.95
  - 0-500MA. RF 3 1/2" RD Westinghouse \$4.95
  - 500-0-500UA 2 1/2" RD Marion Good-Bad Scale \$2.95

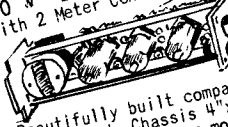
## PE-120 MOBILE VIBRATOR POWER SUPPLY



With Schematic \$2.95  
Input: 6 or 12V. DC \* with proper plug in vibrator (see below)  
Output: 90V. DC. @ 40 MA, 150V. DC. @ 40MA.  
6V. DC. @ 250MA., 1.5V. @ 900 MA.  
Fine for powering rigs with battery tubes.  
PE-120 Like New (less vib.) \$2.95  
VB-12 6V. Vibrator .95  
VB-13 12V. Vibrator .95

## AN/DMQ-2 UHF TRANSMITTER

20 W 242.8 MC  
With 2 Meter Conversion Information \$6.95



Beautifully built compact transmitter. XTAL controlled. Chassis 4"x4"x11". Can be easily adapted to 225MC or modified to 144MC. Uses 2-6201's (12AT7) and 1-6360 Dual tetrode in final. Size "4"x4"x11". Less tubes NEW \$6.95

## F.M. WOBULATOR CAPACITOR



**\$1.95**

A electro-mechanical sweep generator capacitor as used in precision instruments for frequency shifting. Contains two inch Alnico Magnet.  
Ex. Cond. \$1.95

## GEIGER COUNTER POWER SUPPLY



**\$2.95 ea.**

Output 58 volt and 900 volt DC. For Geiger Counter, Strobolite, etc. Compact sealed case. Size approx. 1 1/2"x2 1/2"x2 1/2". Can be powered by 2 flashlight batteries New \$2.95

## SURPLUS VIBRATORS

- |            |     |                 |        |
|------------|-----|-----------------|--------|
| VB-1 6v.   | p/o | PE-117 & PE-237 | \$1.49 |
| VB-3 6v.   | p/o | PE-104          | 1.95   |
| VB-8 2v.   | p/o | PE-157 & BC-728 | 1.49   |
| VB-9 6v.   | p/o | PE-157 & BC-728 | 1.49   |
| VB-11 24v. | p/o | PE-120          | .95    |
| VB-12 6v.  | p/o | PE-120          | .95    |
| VB-13 12v. | p/o | PE-120          | .95    |
| VB 16      | p/o | PE-237          | 2.95   |
| R-84 4v.   | p/o | TBY             | 1.49   |

## AUTO RADIO VIBRATORS STANDARD - NEW!

6v.-4 Prong **\$1.79 ea.**  
12v.-3 Prong  
12v.-4 Prong  
YOUR CHOICE ASSORTED!  
10 FOR \$16.50

## AN/PRS-3 or 4 MINE DETECTOR LATE MODEL!

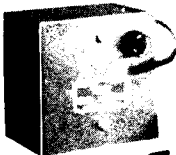


Very sensitive model heavy duty with extra sensitive amps & detectors. The PRS-3 or 4 uses miniature tubes. Batteries not furnished.

\* PLUMBERS  
\* POLICE  
\* MINERS  
\* PROSPECTORS  
**\$34.95**

AN/PRS-3 pr 4 Ex. Cond. \$34.95

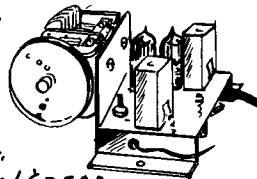
## VO-6 100 KC-50 MC TEST SET



**\$1.95 ea.**

VO-6. One tube crystal calibrator test set. Frequency range 100kc-50mc. Battery operated. Complete with 4.3 mc crystal, tube and schematic. Requires one 67.5v "B" battery and one 1.5v "A" battery.  
VO-6 Ex. Cond. \$1.95

## BROADCAST BAND RADIO TUNER

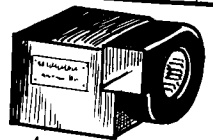


**\$3.95 ea.**  
10/\$35.00

Broadcast Band Radio Tuner  
Two 455 IF's, 1 ea. 6BE6, 1 ea. 6BA6 & 1N65 DIODE. Orig. used with T.V. Power requirements: 6.3V @ 1A & 200V. DC. @ 50 MA  
New with Tubes \$3.95 10/\$35.00

## MINIATURE BLOWER MOTOR

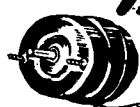
Miniature Blower Motor  
HD-71/APG-33 115V. AC-400 CPS Motor  
7500 RPM  
2 1/2" Dia. wheel squirrel cage blower.  
Ex. Cond. \$1.49 10/\$12.50



**\$1.49**

## REDMOND FAN MOTOR

Redmond Fan Motor 24V. DC. @ 1A  
6000 R.P.M. Motor size: 3" dia. x 3 1/2" H  
Shaft 1/4" dia. x 1" lg.

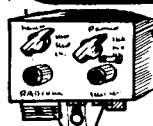


**95¢ ea.**

New ea. 95¢

## MINE DETECTOR INDICATOR CONTROL

Contains a beautiful 0-1MA 2" rd. meter plus loads of parts.  
**\$1.95 ea. 3/\$4.95**



C-174/AIC-4 Control Box  
Contains:  
1 ea. Standard mike jack  
1 ea. Standard phone jack  
2 ea. Rotary switches with knobs  
1 ea. DPDT 24V. DC. Relay  
New ea. 95¢ 10/\$7.50

**95¢**



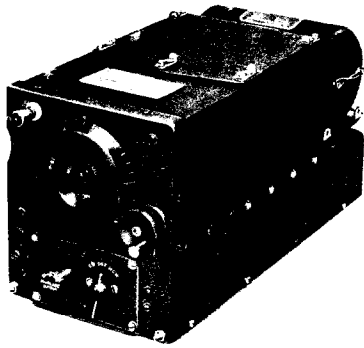
## 1619 TUBE 10/\$1.00

\$8.50 per 100  
Metal beam power amplifier tube. Ideal for small XMTR and Amplifiers. Meets JAN specifications.

# AM Communications Receivers

## ARC-5 - SCR 274-N

COMMAND RECEIVERS



The Command Set Series of Receivers are very popular because of their low cost, compact size and rugged construction. There are 5 single band, 6 tube Receivers in the series. Each Receiver is a Superheterodyne using the following circuit, 12SK7-RF, 12K8-mixer, 12SK7-IF, 12SK7-IF, 12SR7-Det., & 8F0 and 12A6-Audio. These Receivers operate from a 24V. D.C. Dynamotor which mounts at the rear of the set. The Power required is 24V. AC @ 1A for Filament & 250 V., D.C. @ 60 MA for b+. The size of each Receiver is 5"H x 5"W x 11"D. Wt. each-7 Lbs.

ARMY	ARMY/NAVY	All Ex. Cond.
BC-453 or R-23/ARC-5	Rec.	190-550 kc \$12.95
BC-946 or R-24/ARC-5	Rec.	550-1500 kc 24.95
ARA or R-25/ARC-5	Rec.	1.5-3 mc 14.95
BC-454 or R-26/ARC-5	Rec.	3-6 mc 9.95
RC-455 or R-27/ARC-5	Rec.	6-9.1 mc 9.95

Optional Accessories:

Tuning Knob		.15
Single, Double or Triple (Specify kind)		
Receiver Mtg. Rack	Ex. Cond. ea.	1.95
Remote Control Box	" "	1.95
4 V. Dynamotor	" "	1.95
5 V. " "	" "	4.95
Connectors (Specify)	" "	.50

We ship ARC-5 or BC-1's in stock unless requested to ship one or the other.



## BC-652

RADIO RECEIVER

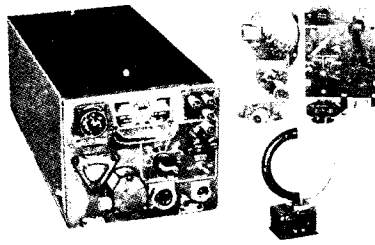
The BC-652 is a 8 tube single conversion 2 band, 2-6 mc sensitive Receiver MFG By General Electric. This set has a built in Crystal Calibrator which gives markers every 20 & 100 kcs. This Receiver is excellent for either Amateur or Marine installation. The BC-652 can be powered from either a 12 or 24V D.C. Power Source depending on the Dynamotor installed. This Receiver has all controls on the front panel & requires no conversion. The circuit used is: 12SG7 RF, 12K8 CONV., 12SK7, 1F 12C8-IF, 12SK7-IF 12SR7-DET., AVC & Audio. 6Y6 output, 12K8 8F0.

Freq. Range: 2 to 9 mc (2 bands)  
IF Freq.: 915 kc (3 stages)  
Output Imp.: 4000 & 600 OHMS  
Dimensions: 13"H x 8"W x 15"D Wt.: 47 lbs.

Principal Components	Ex. Cond.	Checked Out
DM-40 Dynamotor 12v D.C.	" "	\$24.50
DM-41 Dynamotor 24v D.C.	" "	3.95
	" "	3.95

See page 9 for the BC-653 which is the companion transmitter to the above BC-652

## ARB RADIO RECEIVER

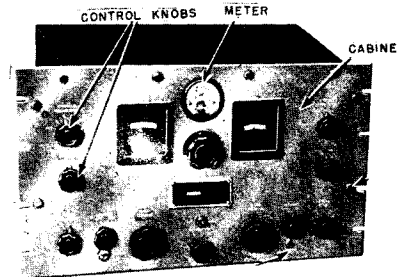


The Navy Model ARB is a general purpose combination low & high frequency (190 to 9050 kc) four band, 6 tube Communications Receiver Mfg By RCA. This Receiver has provision for either local control or remote control or both. The ARB is excellent for installation in Boat, Car, or Home. This Receiver is for 24V D.C. operation but can be easily converted to 12V D.C. or 110V AC. The ARB can also be used as a Direction Finder by use of DU-1 Loop Antenna.

TECHNICAL CHARACTERISTICS:  
Freq.: 190-9050 kc (4 Bands)  
Dimens.: 7"H x 8"W x 16"D Wt.: 25 Lbs.

Principal Components	Ex. Cond.	
ARB Radio Receiver		\$19.95
ARB Control Box	" "	1.95
ARB Connector Set	" "	2.95
ARB Local Tuning Knob	" "	.95
DU-1 Loop Antenna 200 - 1600 KC	" "	24.95
ARB 12V D.C. Dynamotor (Special)	" "	3.95

## HAMMARLUND SUPER PRO



The Super Pro Series of Receivers are a general purpose fixed station 5 band 18 tube Communication Receivers. They are highly recommended because of their high sensitivity & selectivity. There are several models available in the Super Pro Series, the only difference is the Frequency Coverage. All receivers have the following Features: 2 RF AMP., 3-465 kc IF AMP., Crystal Filter, BFO, Band Spread Dial. S-Meter, AVC & MVC Control Noise Limiter, RF & Audio Gain Control. These Receivers use a external Power Supply.

TECHNICAL CHARACTERISTICS:  
Freq. Range: BC-779-100-400 kc & 2.5-20 mc  
Freq. Range: BC-774-1.25-40 mc  
Sensitivity: 1.5 UV. @ 20 mc  
Selectivity: 3.5 kc @ 20 DB down  
Output Impedances: 600 & 8000 OHMS  
Output Power: 10 Watts  
Dimensions: Receiver 11"H x 19"W x 16"D  
Power Supply: 11"H x 19"W x 10"D  
Wt.: Rec. 55 Lbs. -Power Supply, 60 Lbs.

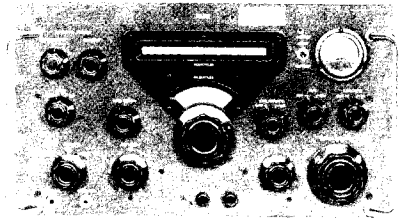
Principle Components	Ex. Cond.	
9C-779 Receiver Reconditioned Like New		\$89.50
9C-774 " "	" "	99.50
Power Supply	Ex. Cond.	19.95

HAMMARLUND SP-600-JX

550 KC- 54 MC Excellent Condition Laboratory Tested, \$449.00

## R-388/URR COLLINS-51J3

RADIO RECEIVER



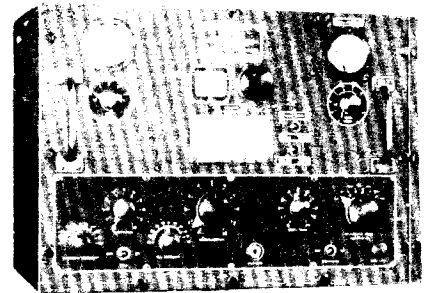
The R-388/URR is a Professional Communications Receiver manufactured by Collins Radio. This set has exceptional frequency stability and Calibration Accuracy. The Receiver covers the Frequency of .5 to 30.5 mc in 30 bands. This set has single, double & triple conversion. Some of its features are: Crystal Filter, Input & Output Meter Crystal Calibrator, RF & Audio Gain Control, BF Control, & 30 Bands of 1 mc each.

TECHNICAL CHARACTERISTICS:  
Freq. Range: .5 to 30.5 mc (30 bands in 1 mc steps)  
IF Freq.: 500 kc  
Sensitivity: AM Single of 5 UV. to produce 500 M.V. output at a signal to noise ratio of 10 to 1.  
Selectivity: 2-20 kc Vairable  
Crystal Calibrator: Every 100 kc  
Output Impedances: 4 & 600 OHMS  
Power Input: 115/230V AC., 45/70 CPS 85 Watts  
Dimensions: 10 1/2"H x 19"W x 13"D Wt.: 38 Lbs.

Principal Components	
R-388/URR Radio Receiver	
	RECONDITIONED LIKE NEW P.U.R.

## RAK NAVY LOW FREQUENCY

RADIO RECEIVER

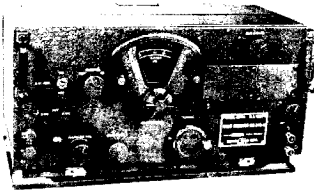


The RAK is a TRF Communications Receiver Covering the Frequency Range of 15 to 600 kc in six bands. The RAK circuit consist of two stages of TRF (6D6); one Regenerative Detector (6D6); Output Limiter (4I); Low Pass Filter; First Audio (6D6); & audio output (4I). The RAK is one of the very few Military Receivers that will tune in the very low Frequencies below 200 kc. This Receiver uses a external power supply.

TECHNICAL CHARACTERISTICS:  
Circuit: Tuned RF with limiter on Audio Output  
Freq. Range: 15-600 kc in six bands  
Sensitivity: 2-5 UV for 6 MW Output  
Output Impedance: 600 ohms  
Power Input: 115V. AC 60 CPS 1 Phase  
Dimensions: RAK Rec. 14"H x 18"W x 16" D  
RAK Power Supply: 13"H x 14"W x 9"D  
Wt.: RAK Receiver: 75 lbs.

Principal Components	
RAK Receiver with Power Supply	
CHECKED & GUARANTEED	\$75.00
EXCELLENT CONDITION	\$49.50

## BC-348 RADIO RECEIVER



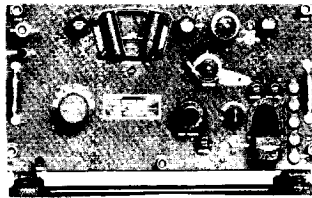
The BC-348 is a eight tube, six band highly sensitive & selective Communications Receiver covering 200-500 kc and 1.5-18 mc. This Receiver is very popular because of its reliability, ruggedness & light weight. The BC-348 features; 2 RF Amplifiers, 3 IF Amplifiers, Crystal Filter, AVC & MVC Control & BFO Control. This Receiver is designed for 24V D.C. operation, but can be easily modified for 110v AC.

**TECHNICAL CHARACTERISTICS:**  
 Freq. Range: 200-500 kc and 1.5-18 mc (6 bands)  
 IF Freq.: 915 kc  
 Output Impedances: 300 or 4000 OHM  
 Output Power: 3 watts  
 Power Input: 24v D.C.  
 Dimensions: 10"H x 18"W x 10"D Wt.: 38 Lbs.

**Principal Components**  
 BC-348 Radio Receiver with Dynamotor  
 RECONDITIONED LIKE NEW \$99.50  
 FT-154 Mounting Base Ex. Cond. 3.95  
 PL-103 Power Plug 1.95

## BC-312 & BC-342

## BC-312 & BC-342 RADIO RECEIVERS

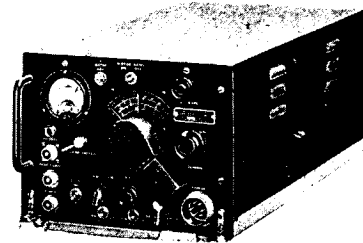


Radio Receivers BC-312 & BC-342 are 1.5-18mc. 6 band highly sensitive & selective Superheterodyne general purpose 9 tube Communications Receivers. Both sets are exactly the same except for their Power Inputs. These Receivers are ruggedly built and are ideal for fixed or mobile installation. These sets have the following features: Antenna Alignment Control, Fast & Slow Tuning Knobs, BFO Control, AVC & MVC Control, Two RF Amplifiers for Sensitivity & three 470 kc IF Stages.

**TECHNICAL CHARACTERISTICS:**  
 Freq. Range: 1.5-18 mc (6 bands)  
 Sensitivity: 4 uv @ 1.5, mc 2 uv @ 18 mc  
 Selectivity: 14 kc @ 20 db down @ 2 mc  
 Output Impedance: 250 or 4000 OHMS  
 Output Power: 8 Watts  
 Dimensions: 10"H x 18"W x 10"D Wt.: 65 Lbs.

**Principle Components:**  
 BC-312 Radio Receiver 12V. DC. Ex. Cond. \$89.50  
 BC-342 " 115V. AC., 50/60 CPS 99.50  
 75 Watts Ex. Cond. 1.95  
 BOTH RECONDITIONED LIKE NEW!

## R-45/ARR-7 RADIO RECEIVER



A military model of famous Hallicrafters SX-28. Tunes 550 KC-43mc in six bands, has crystal filter, BFO, S-meter, 2 RF's & 2 IF's of 455 KC, 12 tubes 600 output. Power requirements 6.3V. AC @ 5A & 250V. DC @ 120 MA.

R-45/ARR-7 Radio Rec. Ex. Cond. Lab Tested \$125.00  
 R-45/ARR-7 Receiver with 110/1/60 Power Supply New \$179.50

## R-44/ARR-5 RADIO RECEIVER

SAME PHOTO AS R-45/ARR-7

A military model of the popular Hallicrafters S-27 & 36. Tunes 27-143mc in 3 bands. Rec's AM, CW & FM, has S-meter, has 1-RF 3 IF's BFO, audio output: 600~12 tubes. Ideal as a monitor receiver. Power requirements: 6.3V. AC @ 5A & 250V. DC @ 120MA.

R-44/ARR-5 Radio Rec. Ex. Cond. Lab Tested \$99.50  
 R-44/ARR-5 Radio Rec. with 110/1/60 Power Supply Like New \$150.00

## BC-314 & BC-344

( Same photo as BC-312 & BC-342)

Radio Receivers BC-314 & BC-344 are low frequency, nine tube single conversion Superheterodyne Receivers having a IF Frequency of 92 KC. These sets tune 150-1500 KC in four bands. This Radio is exactly the same as the BC-312 and BC-342 Receiver except for the frequency range

and IF frequency. The BC-314 is designed for 12V. DC. operation and the BC-344 for 115V. AC 50-60 CPS.

**PRINCIPAL COMPONENTS:** Reconditioned Like New  
 BC-314 Radio Receiver 12V. DC. \$65.00  
 BC-344 Radio Receiver 115V. AC 75.00

ALSO AVAILABLE !! \$95.00  
 NAVY MODEL RECEIVER RBA-1, RBB, RBC, RBH, RBJ, RBK, RBL, RBM, RBS. COMMERCIAL \$495  
 SX-28, S-27, S-36, HRO, SP-600  
 AND MANY MORE COMMERCIAL HALLICRAFT & HAMMARLUND & COLLINS RECEIVER.  
 WRITE US YOUR REQUIREMENTS.

## PANORAMIC ADAPTERS

### AN/APA-38 PANORAMIC ADAPTER



The AN/APA-38 Panoramic Adapter is a small compact unit designed to be used with Receivers having a IF Frequency of 30mcs such as the AN/APR-1, AN/APR-4 & RDO Receivers. This unit will display signals up to 5 mc either side of the Received Frequency. The AN/APA-38 has a Power Input of 115V. AC, 400 cps, 1 Phase but can be modified to 60 cps by installing a 60 cps Power Transformer.

**TECHNICAL CHARACTERISTICS:**  
 Input Frequency: 30 mcs.  
 Maximum Sweep Width: 10 mc.  
 Power Input: 115V. AC. 400 cps 1 Phase

**Principal Components:**  
 AN/APA-38 Panoramic Adapter Ex. Cond. \$14.95

### RDP PANORAMIC ADAPTER



The Navy Model RDP Panoramic Adapter is designed to be used with Receivers having a IF Frequency of 30 mc, such as the AN/APR-1, AN/APR-4 & RDO. This unit will display on a 5" CRT signals up to 5 mcs either side of the Frequency being monitored.

**TECHNICAL CHARACTERISTICS:**  
 Input Frequency: 30 mc  
 Maximum Sweep Width: 10 mc  
 Power Input: 115V. AC., 50/60 cps 1 Phase  
 Dimensions: 10"H x 18"D x 18" W. Wt. 80 Lbs.

**Principal Components:**  
 RDP Panoramic Adapter Ex. Cond. \$99.50  
 Checked Out

### BC-1031 PANORAMIC ADAPTER



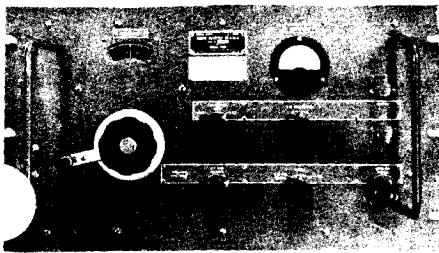
The BC-1031 Panoramic Adapter is used extensively for rapid visual spectrum scanning. This unit when used in conjunction with a Receiver having a Frequency of 450-470 KC will permit a visual inspection of signals 100 KC either side of the Received Frequency.

**TECHNICAL CHARACTERISTICS:**  
 Input Frequency: 450-470 KC  
 Maximum Sweep Width: 200 KC  
 Power Input: 115V. AC., 50/60 cps, 1 Phase  
 Dimensions: 8"H x 13"D x 13"W Wt.: 50 lbs.

**Principal Components:**  
 BC-1031 Panoramic Adapter Ex. Cond. \$99.50  
 Checked Out

LEONARD B. SAKEN, PRESIDENT

## BC-639 RADIO RECEIVER



The BC-639 is a 100-156 MCS AM Tunable VHF superheterodyne receiver Designed by Bendix Radio. This Receiver is one of the very few Military Tunable Receivers covering the Standard VHF Aircraft Band. The BC-639 has the following controls & features; RF Gain, Audio Gain, CW & AVC Switch, and Tunable Meter. This receiver will fit into a standard size 19" wide Rack.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 100-156 mcs.  
Type of Reception: AM, CW & MCW  
Sensitivity: 5 UV.  
Power Output: 1 Watt  
Output Impedance: 600 OHMS.  
Power Supply: External  
Dimensions: 12"Hx19"Wx10"D Deep Wt.: 35 Lbs.

### PRINCIPAL COMPONENTS:

BC-639 Radio Rec. Like New & Guaranteed \$95.00  
RA-42 110 V 60 CPS Power Supply  
Reconditioned Like New & Guaranteed 14.95

**AN/APR-4 (AM-FM) NEW \$95.00**

## AN/APR-4 RADIO RECEIVER



The AN/APR-4 AM Radio Receiver is particularly suited for monitoring and measuring Freq. as well as relative signal strength of signals in the range of 38-4,000 mc. This Receiver utilizes plug-in RF Tuning Units containing the Mixer and Oscillator. five IF stage (6AC7) Detector (6H6); BFO; AMP, and Power Supply, this Receiver has provisions for connecting a Panaramic Adaptor such as the AN/APA-38 or Model RDP. This Receiver also has a Video Output and Audio Output Jack as well as a Broad and Narrow Bandwidth Switch, BFO Switch and AVC Switch.

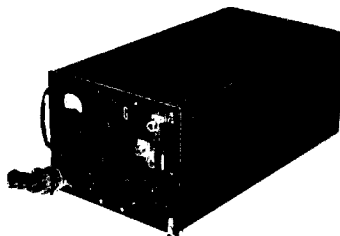
### TECHNICAL CHARACTERISTICS:

Freq. Range: 38-4000 mcs covered by 4 plug in Tuning Units.  
Calib. Accuracy: 1% Approx.  
Video Output: 1.5V. @ 70 OHMS  
Audio Output: 100 MW into 600 OHMS  
Sensitivity: 35 to 50 MW. average  
IF Freq.: 30 mc  
Selectivity: 4mc wide position & 600 kc Narrow Position.  
Power Input: 110V. ac. 80 to 2600 cps.  
Dimensions: 8" H x 10" W x 22" D Wt. 42 Lbs.

Principal Components:  
Ex. Cond. & Lab. Checked Out  
TN-54/APR-4 Rec. Chassis reconditioned \$ 95.95  
TN-16/APR-4 Tuning Units 38-95 mc Ex. Cond. 35.00  
TN-17/APR-4 " " 74-320 mc " 35.00  
TN-18/APR-4 " " 300-1000 mc " 39.95  
TN-19/APR-4 " " 975-2200 mc " 69.95  
TN-54/APR " " 2150-4000 mc " 149.95

**YOU WILL ALWAYS FIND IT AT COLUMBIA! WRITE US YOUR NEEDS**

## AN/APR-5 RADIO RECEIVER



The AN/APR-5 is particularly suited for monitoring AM signals in the Microwave Range of 1000 to 6000 mc. This Receiver is compact & easy to operate. The circuit used is as follows: Crystal Mixer, QSC (446); six IF stages (6AC7); Detector (6H6); Video Amplifier (6AC7); Cathode follower Output Stage (6AG7); Audio output (6SN7).

### TECHNICAL CHARACTERISTICS:

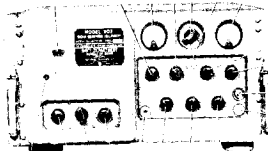
Freq. Range: 1000 to 6000 mcs.  
IF Freq.: 30 mcs.  
Audio Output: 600 OHMS  
Power Input: 110 VAC. 60 CPS.  
Dimensions: 8"H x 11"W x 21"D Net Wt.: 45 Lbs.

### Principal Components:

R-111/APR-5A Ex. Cond. Lab. Tested \$95.00

## RDZ RADIO RECEIVER

The RDZ is a Crystal Controlled 21 Tube Superheterodyne UHF Communications Receiver Designed by the National Co. for the Navy. This Receiver



covers 200 to 400 mcs. in one band. The RDZ can be quickly tuned to any one of ten preset frequencies by a Autotune System. The RDZ is ideal as a Airport Control Tower Monitoring Receiver.

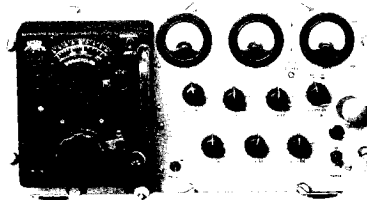
### TECHNICAL CHARACTERISTICS:

Freq. Range: 200-400 mc., except 222 to 232mcs. AM & MCW  
Preset Frequencies: Ten  
Freq. Control: Crystal Oven Mounted  
Freq. Stability: .007%  
IF Freq: 15.1 mc  
Selectivity: 125 or 250 KC at 6 DB Down  
Audio Output: 600 MW into 600 OHMS Line  
Power Input: 110/115/120V. AC. Single Phase, 50/60CPS.  
Dimensions: 12"Hx25"Wx20"D Wt.: 120 Lbs.

### Principal Components:

RDZ Receiver Ex. Cond. \$39.95  
RDZ Receiver New Cond. 59.95  
Crystals (Made to order) New Each 6.00  
RDZ UHF Antenna Ex. Cond. 9.95

## RDO RADIO RECEIVER



The RDO was designed and built for the Navy for use as a Microwave Search Receiver aboard ship. This set is very similar to the AN/APR-4

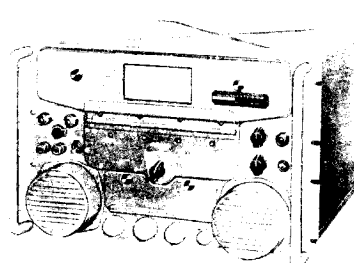
The RDO has complete metering of both RF and Audio Circuits. The RDO utilizes the same plug in RF Tuning Units as the AN/APR-4 Receiver. RDO is ideally suited for monitoring and measuring signals in the 38-4000 mc range.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 38-4000 mc. covered by 4 plug in units  
Calibrated Accuracy: 1% Approx.  
Video Output: 25mv into 50 OHMS

**TN 4/APR1 (1000-4000 Mc) \$75.00 Good**  
**4 Position 38-1000 Mc NEW \$295.00**

## R-278/GR RADIO RECEIVER

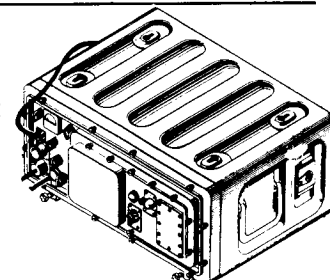


The R-278/GR is a UHF Ground Station AM Superheterodyne Receiver designed by Collins Radio. The R-278/GR provides reception of AM and CW signals on any one of 1750 Channels in the Freq. Range of 225 to 399.9mc and simultaneously on one fixed tuned Channel in the Freq. Range of 238 to 248 mc. This Receiver is a part of Radio Sets AN/GRC-27, AN/GRC-29 and many other and is designed to receive signals from Radio Sets, AN/ARC-19, AN/ARC-27, AN/ARC-34, AN/ARC-33 and other Radio Sets. This is one of the very latest UHF Military Receivers to become available on the Surplus Market and is ideal for Airport use. Will fit standard 19" wide rack.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 225.0 to 399.9 mcs  
Freq. Control: Crystal  
Number of Channels: 1750 spaced at 100 KC intervals  
Number of Preset Channels: 10  
Selectivity: 85 KC @ 6 DB Attenuation  
Sensitivity: 6 UV. 30% Modulation @ 1 KC.  
Power Output: 3 Watt into 600 OHMS  
Power Input: 115/230V., 50/60 CPS  
Dimensions: 13"H x 19"W x 20"D Wt. 115 Lbs.  
RECONDITIONED LIKE NEW AND GUARANTEED. P. U. R.

## RDR RADIO RECEIVER



Radio Receiver RDR is a Ten Channel Crystal Controlled Fourteen Tube Superheterodyne UHF Communications Receiver Designed by RCA for the Navy. This Receiver covers 225-390 mcs. in one band. A built in Auto-Tune motor quickly selects any one of Ten Preset Frequencies, by turning a switch. Perfect for use at Airports.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 225-390 mcs.  
Preset Freq.: Ten  
Freq. Control: Crystal Oven Mounted  
Freq. Stability: .007%  
Sensitivity: 10W. VV.  
Selectivity: 250KC @ 6DB Down  
IF Freq.: 30 mcs.  
Squelch: Operates on 6DB Change  
Audio Output: 1 Watt into 600 OHMS  
Power Input: 12V. DC. @ 12Amps.  
Dimensions: 9"Hx21"Wx16"D Wt.: 45 Lbs.

### Principal Components:

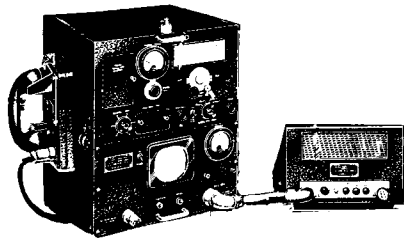
RDR Radio Receiver Ex. Cond. Ea. \$39.95  
Crystals (Made to order) Ea. 6.00  
RDR UHF Antenna Ex. Cond. 19.95

Video Response: 60 cps. to 2mc.  
Audio Output: 45mw. into 600 OHMS  
IF Freq.: 30mcs.  
IF Sensitivity: 39 uv. @ 30mc.  
Selectivity: 4mcs. wide position & 600KC: narrow position  
Power Input: 110 vac, 60cps.  
Dimensions: 11"Hx25"Wx10"D Wt.: 100 Lbs.

Principal Components:  
RDO Main Chassis Ex. Cond. Lab. Tested \$95.00  
For Tuning Units, see AN/APR-4

# AM - CW Radio Transceivers

## BC-669 TRANSCEIVER

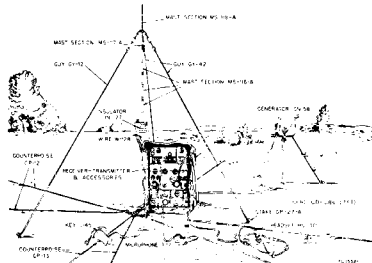


**FUNCTIONAL DESCRIPTION:** The BC-669 is a Compact Medium Power AM 1,680 KC-4,450 KC Radio Transmitter Receiver. This equipment was originally designed by the Hallicrafters Co. for Marine or Mobile use. This set is widely used for Maritime Radio Communications all over the world.

**ELECTROMECHANICAL DESCRIPTION:**  
 Freq. Range: 1680 to 4,450 KC.  
 Power Output: 50 Watts  
 Freq. Control: Crystal or Manual.  
 Preset Freq.: 6 Transmit, 6 Receive

Principal Components		Ex. Cond.	\$89.95
BC-669 Transceiver			
PE-110 Power Supply 110/1/60			49.95
CD-515 Connecting Cable			3.95
RM-21 Remote Control			4.95
TS-11 Handset			4.95

## AN/GRC-9 TRANSCEIVER



**FUNCTIONAL DESCRIPTION:** Radio AN/GRC-9 is a Light-Weight, Man-Transportable Field Radio Set, providing Two-Way Radio Communications in the HF Range. This set is also provided with Mounting & Power Supply for Vehicular Service.

**ELECTROMECHANICAL DESCRIPTION:**  
 Frequency Range: 2-12 mc in three bands  
 Type Modulation: AM, CW, or MCW  
 Frequency Control: M.O. or crystal.  
 Power Source: 6, 12 or 24v. D.C. or Hand Powered Generator  
 Power Output: 7 Watts AM 15 Watts CW

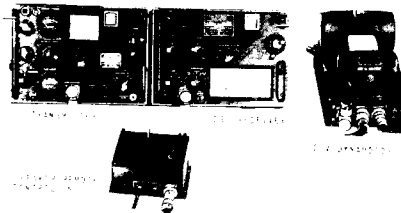
Principal Components		Ex. Cond.	P.U.R.
RT-77/GRC-9 Transceiver			\$24.95
PE-237 Vibrator Power Unit			39.95
GN-58 Hand Powered Generator			6.95
CD-1086 Power Cable			

## BC-1306 SAME PHOTO AS ABOVE

Transceiver BC-1306 is a Light-Weight Transportable Field Radio Set. This equipment is very similar to the AN/GRC-9 except for its Frequency Range which is 3.8 to 6.5 MC. Its power output is 7 watts AM 15 watts CW

Principal Component		Ex. Cond.	\$29.95
BC-1306 Transceiver			24.95
PE-237 Vibrator Power Unit			39.95
GN-58 Hand Powered generator			6.95
CD-1086 Power Cable			

## TCS TRANSCEIVER



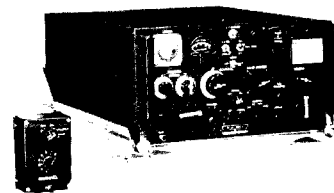
**FUNCTIONAL DESCRIPTION:** The Navy Model TCS is a Medium Power AM & CW 1.5 to 12 MC Transmitter & Receiver designed by Collins Radio for Shipboard as well as Vehicular or Fixed Station use. This Equipment is adaptable to a wide range of operating power inputs by use of the variety of Power Supplies available.

Freq. Range: 1.5-12 MC  
 Freq. Control: Crystal or Manual  
 Preset Freq.: 4 Transmitter 4 Receiver  
 Power Input: 75 W. CW or 50 AM

Principal Components			
TCS Receiver	Reconditioned Like New	\$49.95	
TCS Transmitter	"	49.85	
TCS Antenna Loading Coil	Ex. Cond.	9.95	
TCS Speaker & Remote Control Box	"	4.95	
Complete Set of Cables.	"	9.95	
TCS 12V. D.C. Dynamotor Assy.	"	14.95	
TCS 110V. A.C. Rectifier Power Supply	"	79.95	
TCS 110V. D.C. Motor Generator Set	"	79.95	
Crystals MFG. to order	New	5.95	

Above Equipment All Tested and Guaranteed

## AN/ARC-2 TRANSCEIVER



**FUNCTIONAL DESCRIPTION:** The AN/ARC-2 is a very Compact Combination Receiver-Transmitter designed originally by Collins Radio for Naval Aircraft use. This equipment features a Eight Channel Autotune System which permits the Transmitter and Receiver to be pretuned to any one of 8 preset frequencies. This equipment can also be manually tuned to any frequency in its tuning range of 2-9 MC. The Receiver and Transmitter are always tuned to the same frequency. The master OSC for both the Receiver and the Transmitter is Collins preambility tuned OSC, which insures crystal like stability. This set has a built in crystal calibrator. Excellent for Marine, Aircraft or Fixed Installation.

**ELECTROMECHANICAL DESCRIPTION:**  
 Freq. Range: 2-9 mc  
 Freq. Control: Master Oscillator  
 Preset Chain: 8  
 Power Output: 60 Watts cw, 40 Watts AM.

Principal Components		Ex. Cond.	\$49.95
RT-91/ARC-2 Transceiver			9.95
MT-421/AR Mounting Rack.			4.95
Control Box			1.50
Connector for Control Box			

## BC-611 TRANSCEIVER

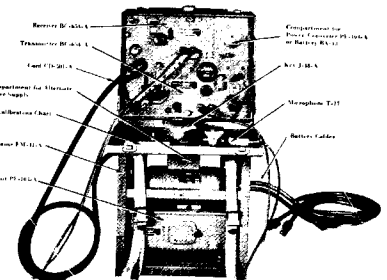
**FUNCTIONAL DESCRIPTION:** Radio TRANSMITTER-RECEIVER BC-611 is a Hand Held Five Tube, Low-Power, Dry Battery-Operated Set. Designed for AM Two-Way Communications over short distances. The outstanding feature of its design and construction is its extreme portability.



**ELECTROMECHANICAL DESCRIPTION**  
 Freq Range: 3.5 to 6.0 mc  
 Preset Freq.: One.

Principal Components		Ex. Cond.	\$49.95
BC-611 Transceiver			4.95
Set of Dry Batteries	Tested and Guaranteed New		

## SCR-284 TRANSCEIVER

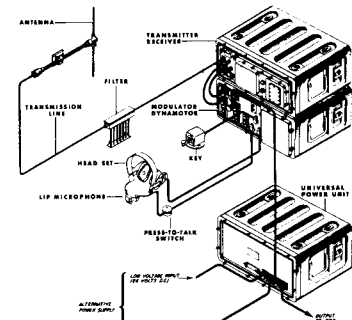


**FUNCTIONAL DESCRIPTION:** Radio Set SCR-284 is a Combined Receiver and Transmitter for operation in a vehicle or on the ground. This equipment will provide reliable communications in the range of 3800 KC to 5800 KC.

**ELECTROMECHANICAL DESCRIPTION:**  
 Freq. Range: 3800 to 5800 KC  
 Type Modulation: AM or CW  
 Freq. Control: Master Oscillator  
 Power Source: 6, 12v. D.C. or Hand Powered Generator  
 Power Output: 17 Watts

Principal Components		Ex. Cond.	\$39.95
BC-654 Transceiver			9.95
PE-104-A Rec.-Vibr. Power Supply			14.95
PE-103-A Transmitter Dynamotor			4.95
CD-501 Power Cable			19.95
GN-45 Hand Powered Generator			
	(With Seat & Cranks)		

## MAR TRANSCEIVER



**FUNCTIONAL DESCRIPTION:** The MAR has been developed by RCA as a General Purpose AM UHF Transceiver adaptable to a wide range of operating power inputs by use of the Universal Power Supply. This set is ideal for vehicular or fixed installations. This equipment operates any one of ten Pre-Set Frequency within 225 and 390 mc.

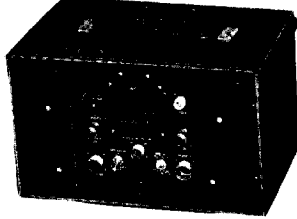
**ELECTROMECHANICAL DESCRIPTION:**  
 Freq. Range: 225-390 MC  
 Preset Freq.: 10 Channels  
 Freq. Control: Crystal.  
 Transmitter Output Power: 8-10 Watts.  
 Power Input: 12-24 DC. or 110/220 AC.-DC.

Principal Components		Ex. Cond.	\$39.95
CRV-43067 Transceiver			19.95
CRV-50248 Mod. & 12V. Dynamotor Supply			29.95
CLG-20379 Univ. Power Supply 24V. DC., 110/220V. AC.-DC.			9.95
Set of Cables.			8.00
Crystals: MFG to speafied freq.			

COLUMBIA Electronic Sales, Inc.

# AM CW Radio Transceivers

## NAVY MODEL MBF TRANSCEIVER



The MBF is a Ultra Compact Radio Transceiver designed and MFG. for the U.S. Navy by Collins Radio. This unit is ideal for conversion to six, ten or eleven meter citizens band. The MBF uses a total of 22 tubes. The Transmitter has a single 28D7 modulated by a pair of 28D7's. The Receiver is a crystal controlled super-hetrodyne has 3 stages of 5.3 mc IF's.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 60-80 mc.  
Freq. Control: Crystal Trans & Receiver FT-243  
Carrier Output: 3 Watts  
Type Modulation: AM Voice (high level plate)  
Preset Channels: One Transmitter & Receiver  
Squelch: Yes 3 to 5 UV, input change  
Input Impedance: 52 Ohms  
Output Impedance: 52 Ohms  
Power Input: 115V. AC, 50-60 CPS, or 115V. DC.  
Dimensions: 10"Dx15"Wx10"H Wt. 27 Lbs.

### PRINCIPAL COMPONENTS:

MBF Transceiver	Ex. Cond.	\$49.95
Tuning Meter		4.95

## MAW RADIO TRANSCEIVER



Navy Model MAW Portable Radio Transceiver provides two-way AM or MCW Radio Communications on any one of 10 preset crystal controlled preset channels in the frequency range of 110-156 mc. This set provides reliable ground to air communications.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 110-156 mc.  
Freq. Control: Crystal Trans & Rec. CR-18/U Holder  
Type Emission: A-2 or A-3  
Carrier Output: .7 Watts into 50 Ohm line  
Type Receiver: Superhetrodyne, 12 mc IF  
Power Supply: Self-Contained vibrator power supply.  
Primary Power Source: Internal 4 v storage battery  
Net Wt.: MAW Transceiver & Bat. 42 Lbs.

MAW RADIO SET	Ex. Cond.	P. U. R.
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*Also Available*

## AN/TRC-7 100-156 MC TRANSCEIVER

## AN/ARC-12 225 - 350 MC UHF TRANSCEIVER

## TDZ 225-400 MC TRANSMITTER

## AN/GRC-26 • SCR-399 RADIO SET



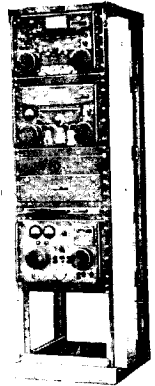
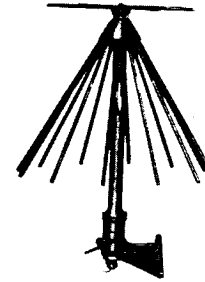
Radio Set AN/GRC-26 is a Mobile Self-contained Radio Teletypewriter, Voice-CW Communications Center which can be operated in motion or stationary. The principal components are: BC-610 Radio Transmitter-2-18 mc-400W see page 9. R-388/URR Radio Receivers .5-30.5 see page 3. PE-95 Power Plant see page 32.

AN/GRC-26	Ex. Cond.	P. U. R.
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Radio Set SCR-399 basically the same as AN/GRC-26 but does not have provisions for radio teletype. Also uses BC-342 Radio Receivers 1.5 to 18 mc see page 4.

SCR-399 Radio Set	Ex. Cond.	P. U. R.
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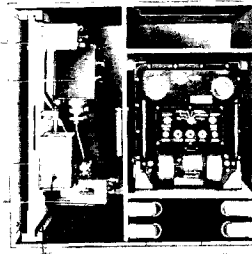
## AN/GRC-27 RADIO SET



Radio Set AN/GRC-27 is a 1750 channel Crystal Controlled UHF Ground to Air Radio Communication Installation used for two-way control tower to aircraft communications in the frequency range of 225 to 399.9 mc. The AN/GRC-27 is principally composed of the R-278/GR. Radio Receiver see page 9. The T-217/GR and the MD-129/6R modulator. see page 9. The installation also includes mounting rack, antenna & cables.

AN/GRC-27 Radio Set	Ex. Cond.	P. U. R.
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## AN/GRC-32 RADIO SET



Radio Set AN/GRC-32 is a 1750 channel UHF Crystal Controlled Ground to Air Communication Installation. The principal components are: one RT-178/ARC-27 Transceiver see page 14, one PP-894/GRC-32 AC Power Supply, Control Boxes, cables, antenna & carrying cases.

AN/GRC-32 Radio Set	Ex. Cond.	P. U. R.
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## AN/PRC-14 TRANSCEIVER

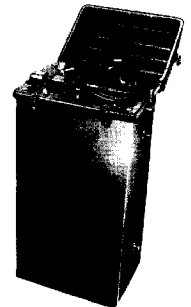
*GROUND  
PERSONAL  
TO AIRCRAFT*



Radio Set AN/PRC-14 is a very Compact AM Transceiver providing four preset crystal controlled AM channels within the frequency range of 225-400 mc. The Transmitter section has a power output of one watt. The Receiver section has a sensitivity of 5 UV at 10 DB. This equipment is powered by an internal 6 volt storage battery. The AN/PRC-14 is used to provide communication between ground personnel & aircraft.

AN/PRC-14 Radio Set	Like New	P. U. R.
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## MAY UHF RADIO TRANSCEIVER



The Navy Model MAY is a Portable Radio Transmitting and Receiving Set providing four preset set crystal controlled voice or MCW Communications Channels for ground to air Communications.

### TECHNICAL CHARACTERISTICS:

Freq. Range: 225-390 mc.  
Freq. Control: Crystal control (CR-9/U holder)  
Type Emission: A-2 & A-3  
Carrier Output: 1 Watt into 50 ohms  
Type Receiver: Superhetrodyne, 100 KC IF  
Power Supply: Self-Contained vibrator power supply.  
Primary Power Source: 6V Self-Contained storage battery.  
Net Wt.: MAY Transceiver 44 Lbs.

MAY Radio Transceiver Complete	Ex. Cond.	\$149.50
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## BRAND NEW BC-645 TRANSCEIVER EASILY CONVERTED FOR 420 MC. OPERATION



This equipment originally cost over \$1000. You get all in original factory carton, BRAND NEW, Complete with 15 tube, less dynamotor and accessories. OUR PRICE...

**\$1995**

**DEPENDABLE  
TWO WAY  
COMMUNICATION  
MORE THAN  
15 MILES!**

FREQUENCY RANGE: About 435 to 500 Megacycles  
TRANSMITTER has 4 tubes: WE-316A, 2-6F6, 7F7  
RECEIVER has 11 tubes: 2-955, 4-7H7, 2-7E6, 3-7F7  
RECEIVER I.F.: 40 Megacycles  
SIZE: 10-1/2" x 13-1/2" x 4-1/2", Shpg Wt 25 lbs.

Makes wonderful mobile or fixed rig for 420 to 500 Mc, Easily converted for phone or CW operation. Provides reliable communication for more than 15 miles!

Superb quality components and circuitry in this unit make it ideal for the technician experimenter. Many fabulous experiments can be performed. For example, you can construct a Yagi antenna for the 420 Mc band that will produce a gain of 10 db and yet fit on your operating desk!

### ACCESSORIES FOR BC-645

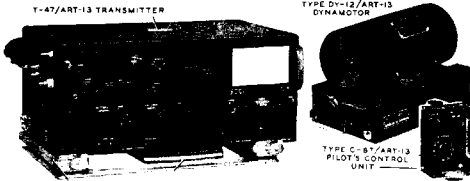
MOUNTING for BC-645 Transceiver.....	\$1.50
PE-101C DYNAMOTOR, 12-24 Volts, (easily converted to 6 volts).....	7.95
MOUNTING FOR PE-101C Dynamotor.....	1.00
UHF ANTENNA ASSEMBLIES (set of 2) . . . per set	2.95
COMPLETE SET OF 11 CONNECTORS.....	5.95
CONTROL BOX BC-646.....	2.95
MOUNTING FOR BC-646 Control Box.....	1.00

### SPECIAL "PACKAGE" OFFER:

BC-645 Transceiver, Dynamotor and all accessories COMPLETE, BRAND NEW, While Stocks Last. . . . . \$29<sup>95</sup>  
Four Page Conversion Manual for 420 Mc  
Ham Band with Schematic.. \$1.00 copy

**FOR  
FIXED  
OR  
MOBILE  
USE**

# AN/ART-13 RADIO TRANSMITTING SET

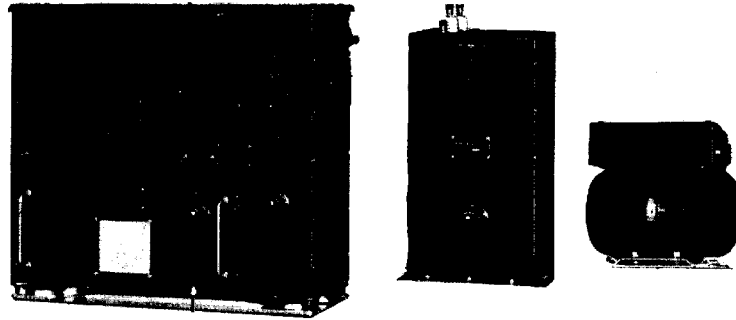


The AN/ART-13 is a 200-1500 kc & 2- 18.1 mc 100 Watt AM, CW & MCW Medium Power Transmitter MFG. by Collins Radio. The Transmitter can be automatically preset to any one of 11 Channels by use of a built in autotune system or it can be manually tuned and set to any desired Frequency in its range. This Transmitter utilizes Plug in modular construction for ease of servicing. Featuring built in Crystal Frequency Calibrator which assures Crystal like stability. The AN/ART-13 is one of the most widely used Military Transmitters in service by Airlines, Amateurs & Commercial Stations.

**TECHNICAL CHARACTERISTICS**  
 Freq. Range: 200-1500 kc & 2-18.1 mc  
 Power Output: 100 Watts on AM, CW, or MCW  
 Freq. Control: Master OSC  
 Preset Channels: Ten;(2-18.1 mc)One;(200-1500 kc)  
 Microphone: Carbon-T-17 or Dynamic  
 Circuit: Two 811 MOD. 813 PA.  
 Power Input: 24V D.C. @ 25 A.  
 Dimensions: 12"H x 16"D x 24"W Wt.: 70 Lbs.

Principal Components		
T-47/ART-13 Radio Transmitter	Ex.Cond.	\$39.95
O-16/ART-13 OSC 200-1500 kc	"	4.95
MT-284/ART-13 Transmitter Shock-mtg	"	9.95
DY-12/ART-13 Dynamotor	"	14.95
MT-164/ART-13 Dynamotor Mtg. Plate	"	3.95
C-87/ART-13 Remote Control Box	"	4.95
Set of 5 Connectors	"	9.95

# BC-191 & BC-375 RADIO TRANSMITTERS



Importers  
 Exporters  
 Governments  
 Marine

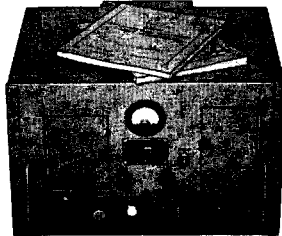
Radio Transmitters BC-191 & BC-375 Were made for Signal Corp. by G.E., and designed for installation, in Aircraft, and Vehicles Requiring a Medium Power Transmitter with Characteristics of strength, light weight compactness, flexibility & portability. Both of these Transmitters are the identical, except that BC-191 is for 12V. DC. installations and the BC-375 is for 24V. DC. installation. These Transmitters cover the range of 150-12,500 kc by the use of plug in tuning units which contain the Oscillator & PA Coils. These Transmitters are excellent for Amateur, Marine, or Commercial applications. The tubes are one #10 Speech Amp 211 OSC & 211 class "C" PA, two 211 as class "B" MOD.

**TECHNICAL CHARACTERISTICS:**  
 Freq. Range: 150-12,500 kc Voice-CW & MCW  
 Power Output: 75 Watts CW, 50 Watts AM  
 Freq. Control: Master OSC  
 Microphone: Carbon; T-17  
 Dimensions: 22"H x 23"W x 10"D Wt.: 53 Lbs.

Principle Components:

BC-191 Radio Transmitter 12V.	Ex.Cond.	\$14.95
BC-375 " " 24V.	"	14.95
TU-1 Tuning Unit, 150-260 KC	"	3.95
TU-2 " " 260-400 KC	"	3.95
TU-3 " " 400-800 KC	"	3.95
TU-4 " " 800-1500 KC	"	3.95
TU-5 " " 1500-3000 KC	"	3.95
TU-6 " " 3000-4500 KC	"	1.95
TU-7 " " 4500-6200 KC	"	1.95
TU-8 " " 6200-7700 KC	"	1.95
TU-9 " " 7700-10,000 KC	"	1.95
TU-10 " " 10,000-12,500 KC	"	1.95
TU-26 " " 200-500 KC	"	1.95
BC-306 Antenna Tuning Unit.150-800 KC	"	1.95
FT-142 BC-306 Mtg. Plate	"	1.50
FT-151 XMTR Shock Mtg.	"	1.50
Set of Connectors	"	2.50
PE-73 24V. Dynamotor for BC-375	"	4.95
BD-77 12V. Dynamotor for BC-191	"	14.95
FT-107 Dynamotor Mtg. Base	"	1.50
RA-34 110/220 AC. Power Supply For BC-191	"	89.50

# NAVY MODEL TED UHF RADIO TRANSMITTER

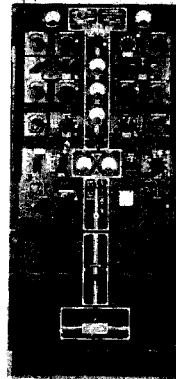


The Navy Model TED is a compact UHF Radio Transmitter designed for Ground to Air or Ship to Air Voice Communications. This transmitter provides four preset crystal controlled Voice or MCW Channels on frequency between 225 to 400 MCS. The TED has its own cabinet for desk mounting or it may be mounted in a standard 19" wide relay rack. The TED uses two 4x150-A tubes in push pull plate and screen modulated power amp. The modulators are two 807 tubes.

**TECHNICAL CHARACTERISTICS:**  
 Freq. Range: 225 to 400 mc  
 Frequency Control: Crystal CR-24/U Holder  
 Preset Frequencies: Four  
 Carrier Output: 15 Watts  
 Type Emission: AM & MCW  
 Input Impedance: 600 OHMS for Microphone  
 Output Impedance: 50 OHMS to Antenna  
 Power Input: 115/230V AC, 50-60 CPS, 1-PH, 750 W  
 Dimensions: 19"Hx25"Wx23"D  
 Weight: 190 Lb. Net

TED Radio Transmitter Ex.Cond. \$295.00

# NAVY MODEL TDE RADIO TRANSMITTER

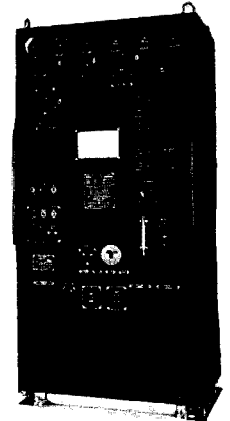


The Model TDE Radio Transmitter is a versatile low power equipment designed & built by Westinghouse for shore or Shipboard Installation. The TDE has a dual frequency range of operation. This transmitter is extensively used on smaller ships where space is a major factor. The TDE uses a 803 tube in the final P.A. The modulator is the screen grid type.

**TECHNICAL CHARACTERISTICS:**  
 Freq. Range: 300-18100 KC.  
 Power Output: 125W. A-1, 35W. A-3  
 Freq. Control: Master OSC.  
 Input Impedance: 100 OHM(Carbon Microphone)  
 Antenna: Long Wire  
 Dimensions: 62"Hx28"Wx20"D  
 Weight: 670 Lbs. Net  
 Power Input: 115/230V. DC., 110/220V. AC  
 1-Phase 60 CPS.220/440V. AC-3 Ph, 60 CPS.

TDE Radio Transmitter Ex.Cond. With choice of Motor Generator Power Unit \$295.00

# NAVY MODEL TCK RADIO TRANSMITTER



The Navy Model TCK designed and manufactured by General Electric for installation on Ships and Shore Stations is a very rugged and reliable medium power XMTR, with directly calibrated master oscillator dial. Dial tolerance is maintained within .02% by means of a built in crystal calibrator. The TCK is designed for voice or CW emission. The TCK has a pair of 813 in the power amp, modulated by a 807. There are several types of power supplies available.

**TECHNICAL CHARACTERISTICS:**  
 Frequency Range: 2-18.1 MC in six Bands.  
 Power Output: 400 W A-1, 100 W A-3  
 Frequency Control: Master Oscillator  
 Input Impedance: 100 OHMS Carbon Microphone  
 Type of Keying: Relay -100 W.P.M. Max.  
 Antenna: Long Wire  
 Dimensions:(Transmitter only) 52"Hx25"Wx19"D  
 Weight: " " 290 LB Net  
 Principal Components: ALL EX. COND.  
 TCK Radio Transmitter(less Power Supply)\$249.50  
 115V. AC. 60 CPS, 1-ph Motor Generator 99.50  
 220V. AC. 60 CPS 3-ph " " 99.50  
 115V. DC. " " 99.50  
 230V. DC. " " 99.50

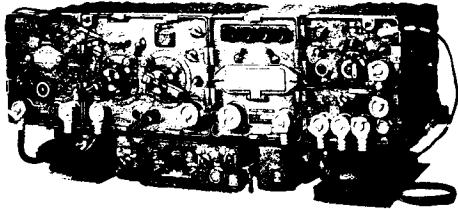
## OTHER TRANSMITTERS AVAILABLE

TAJ	TBK	GO-9	AN/URT-2	AN/URT-7
TBW	TBM	GP-7	AN/URT-3	Press Wireless
	TCP	TBL	AN/URT-4	Collins Commercial Models





## AN/GRC-3-4-5-6-7&8 RADIO SETS



FUNCTIONAL DESCRIPTION: The radio sets AN/GRC-3 through 8 series consists of a system of radio sets identical in all respects except for frequency.

### MAJOR UNITS

RT-66/GRC	XMTR-REC.	20-27.9mc
RT-67/GRC	XMTR-REC.	27-38.9mc
RT-68/GRC	XMTR-REC.	38-54.9mc
RT-70/GRC	XMTR-REC.	47-58.4mc
R-108/GRC	REC.	20-27.9mc
R-109/GRC	REC.	27-38.9mc
R-110/GRC	REC.	38-54.9mc
PP-109/GRC	Power Supply	12V DC
PP-112/GRC	Power Supply	24V DC
AM-65/GRC	Amplifier	

**P.U.R.**

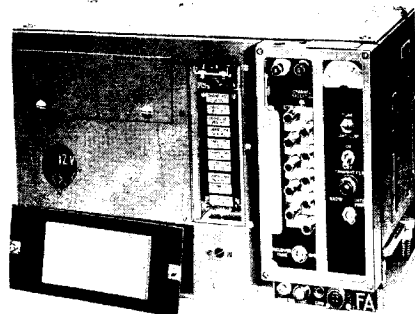
## BC-603 & BC-683 FM RADIO RECEIVER

FUNCTIONAL DESCRIPTION: BC-603 & BC-683 are 10 channel FM Receivers. They are excellent for monitoring Amateur Commercial and Police Frequencies

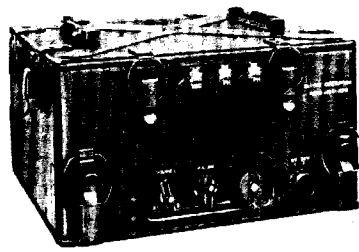
ELECTROMECHANICAL DESCRIPTION  
Freq. Range: 20-28 mc BC-603.  
Freq. Range: 27-39 mc BC-683  
Variable Tuning.

Principle Components:		
BC-603 FM Receiver	Ex. Cond.	\$19.95
BC-683 FM Receiver	"	24.95
DM-34 12V. Dynamotor	New	3.95
DM-36 24V. Dynamotor	New	2.95
110V. AC. Power Supply	New	11.95

## BC-604 & BC-684 TRANSMITTERS



## BC-1335 RADIO RECEIVER-XMTR

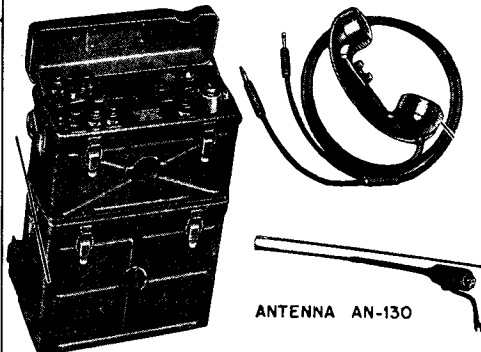


FUNCTIONAL DESCRIPTION: The BC-1335 is a 27-38.9 mc. Two Channel 1.5 Watt output. Crystal Controlled Transmitter and Receiver. This set provides two way Radiotelephone Communications over distances up to approx. 10 miles. The BC-1335 can be powered from either 6 V D.C. or 12 V D.C. Size 13"x13"x8"

### PRINCIPAL COMPONENTS:

3C-1335 Transmitter Receiver; Ex. Cond.	\$39.95
TS-13 handset;	3.95
Battery Connector	Each " 1.50
Crystals See page 42	

## BC-1000 WALKIE-TALKIE



FUNCTIONAL DESCRIPTION: The BC-1000 is a 18 tube low-power, dry battery-operated Portable Radio Rec. and Transmitter. designed to provide FM TWO-WAY Communications over short distances. This unit is part of the SCR-300 Radio Set.

### ELECTROMECHANICAL DESCRIPTION:

Freq. Range: 40-48 mc  
Preset Frequencies: None (tunable)  
Frequencies Control: Master Oscillator  
Power Output: .3 watts  
Power Source: 3A-70 Dry Battery

Principle Components:		
BC-1000 Transceiver	Ex. Cond.	\$49.95
AN-130 Antenna	"	3.95
Handset	"	4.95

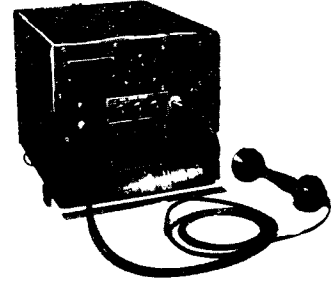
FUNCTIONAL DESCRIPTION: BC-604 & BC-684 are 10 Channel FM 30 Watt output Transmitters and are used with BC-603 & BC-683 Receivers to make up a complete station.

ELECTROMECHANICAL DESCRIPTION:  
Freq. Range: 20-27.9 mc. (80 channels) BC-604  
27-38.9 mc. (120 channels) BC-684

Preset Freq: 10  
Freq. Control: Crystal  
Deviation: ± 30 KC.

Principle Components:		
BC-604 FM Transmitter	Like New	\$4.95
BC-684 FM Transmitter	Ex. Cond.	4.95
DM-35 12V. Dynamotor	"	7.95
DM-37 24V. Dynamotor	"	4.95
Crystals See page 42		
FT-237 Mounting Rack	Ex. Cond.	4.95

## BC-620 & BC-659 FM RADIO SET



FUNCTIONAL DESCRIPTION: BC-620 and BC-659 are LOW POWER VHF FM PACK SETS designed for short range use. These sets are ideal for installation in vehicles for Amateur, Citizens Band or Commercial Applications.

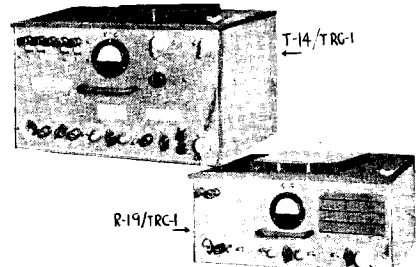
### ELECTROMECHANICAL DESCRIPTION:

Freq. Range: 20-27.9 MC 80 Channels (BC-620)  
27-38.9 MC 120 Channels (BC-659)  
Power Output: 2 watts  
Preset Freq.: Two  
Freq. Control: crystal  
Power Source: 6-12 or 24 V D.C.  
Size: 7"x 14"x 15"  
WT.: 30 lb.

### PRINCIPAL COMPONENTS:

PE-120 Pow. Sup. 6-12-24V. DC. Ex. Cond.	\$ 2.95
Crystals- See page 42	" "
TS-13 Handset.	" 3.95
3A-41 Bias Battery	" 7.95
6-12 or 24V. Plug in Vibrator	
PE-120 Ex. Cond. Specify Voltage "	.95
BC-620 Transmitter & Receiver	" 14.95
BC-659 Transmitter & Receiver	" 14.95

## T-14/TRC-1 FM RADIO TRANSMITTER



FUNCTIONAL DESCRIPTION: Radio Transmitter T-14/TRC-1 is a Single-Channel Ground Trans- portable Communications Set and is intended for point to point communications.

### ELECTROMECHANICAL DESCRIPTION:

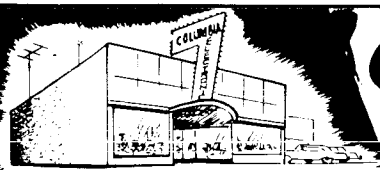
Freq. Range: 70-100 mc.  
Preset Frequency: One  
Type Modulation: FM  
Freq. Control: Crystal.  
Power out put: 50 watts.  
Power Source: 115 V A.C. 60 CPS: 1 Phase.  
Size: 11"x 20"x 13" WT.: 66 lb.  
T-14/TRC-1 Checked Out Ex. Cond. \$49.95

## R-19/TRC-1 FM RECEIVER

FUNCTIONAL DESCRIPTION: Radio Rec. R-19/TRC-1 is a Single Channel Ground Transportable Set, and is intended for point-to-point communications.

### ELECTROMECHANICAL DESCRIPTION:

Freq. Range: 70-100 mc  
Preset Freq: One  
Type Modulation: FM  
Freq. Control: Crystal.  
Power Source: 115 V A.C. 60 CPS: 1 Phase  
Size: 8"x 20"x 13"  
WT.: 45 lb.  
R-19/TRC-1 Checked Out Ex. Cond. \$49.95



# COLUMBIA Electronic Sales, INC.

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CABLE ADDRESS "COLECTRON" — OPEN MONDAY AND FRIDAY NIGHTS "TIL 9:00 P.M."

# MORE FM RADIO TRANSMITTERS & RECEIVERS

## AN/PRC-6 FM HANDY-TALKIE

Radio Set AN/PRC-6 is a light weight Handy-Talkie which was designed to provide communications over short distances.

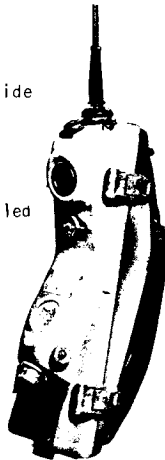
### Technical Characteristics.

Freq Range: 47-55.4mc  
Channels: One. Crystal Controlled  
Power Output: .25 W  
Power Source: BA-270/U  
Wt. 7 Lbs.

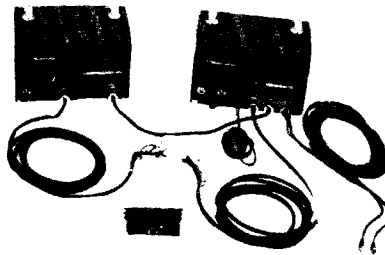
### Principle Components.

RT-196/PRC-6 Transceiver  
Ex. Cond. \$129.95

BA-270 Dry Battery NEW.  
(Out of code date) \$1.95



## AN/VRC-2 RADIO SET



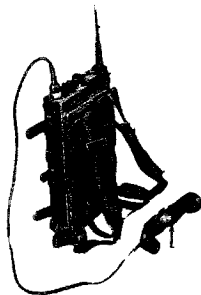
FUNCTIONAL DESCRIPTION: Radio Set AN/VRC-2 is a 25 Watt output Crystal Controlled 30-40 mc. FM single channel Two Way Radio Telephone designed for installation in Vehicals having a 6V-DC electrical system.

This equipment is excellent for use by Police, Fire and Taxi Cabs. This is the Military equivalent to the Motorola Model FMTR-25 or 30D.

### Principal Components:

R-237/VRC-2 Radio Receiver Ex. Cond. \$24.95  
T-193/VRC-2 Radio Transmitter " 19.95  
Control Box Cables and Connectors " 14.95  
Mobile Antenna & Mount New 9.95  
Crystals MFG. to order, each 3.00

## AN/PRC-8-9-10 WALKIE TALKIE



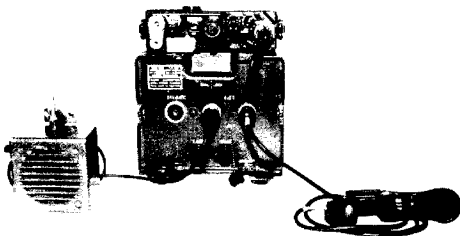
Radio sets AN/PRC-8-9 and 10 are light weight, low power battery operated FM Radio Receiver -Transmitters intended for short range portable communications. All three models are identical except for frequency coverage.

### Technical Characteristics:

AN/PRC-8 20-27-9mc LIKE NEW P.U.R.  
AN/PRC-9 27-38-9mc " " "  
AN/PRC-10 38-54-9mc " " "

Tuning: Continuous tuning.  
Freq. Control: MO.  
Power output: .9 watts  
Power Source: BA-279/U Dry Battery  
Wt: 22 Lbs.

## AM-598/U AMPLIFIER POWER SUPPLY



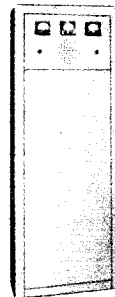
For vehicular operation of Radio Set AN/PRC-8-9-10 the set can be installed in a vehicle which has a 24 volt electrical system by using the Amplifier Power Supply AM-598/U. The AM-598/U provides two audio connectors to which a loudspeaker and a handset or microphone may be connected.

### PRINCIPAL COMPONENTS:

AM-598/U Amplifier Power Supply Ex. Cond. \$150.00  
MT-759/PRC Mtg. Plate " " 7.50

## AN/FRC-6

FM BASE  
STATION



The AN/FRC-6 is a 30-40 mc FM single Channel, Crystal Controlled Transmitter & Receiver. This set is designed to be used with Mobile Radio set AN/VRC-2 and is excellent for Police, Fire, and Private Radio Links which require a Base Transmitter of medium power. This set is the Military Model of the Motorola Model FSTR-50BR.

### TECHNICAL CHARACTERISTICS.

Freq. Range: 30-40 mc FM  
Freq. Control: Crystal  
Channels: 1 Rec. and 1 XMTR.  
XMTR Power Output: 50 Watts  
Output Impedance: 52 OHM  
Microphone: Carbon  
Rec. Type: Dual Conversion Superheterodyne  
Power Input: 115V. AC., 50/60 CPS, 1 Phase,  
500 Watts  
Dimensions: 69"Hx15"Dx23"W Wt.: 165 Lbs.

### Principal Components:

MT-658/FRC-6 Cabinet, Meters  
& Speaker Ex. Cond. \$34.95  
R-276/FRC-6 Receiver " " 34.95  
T-215/FRC-6 Transmitter " " 34.95  
Desk Console & Speaker " " 34.95  
Ground Plane Ant. (cut to Freq.) NEW 34.95  
Crystals (MFG to Freq.) NEW ea. 3.00

## WRITE US YOUR REQUIREMENTS

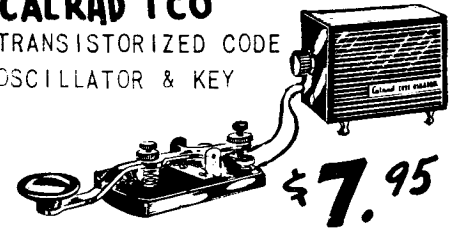


We also can supply Commercial Motorola, GE, RCA, Link 30-50 150-175MC Wide Band or Narrow Band FCC Approved Mobile and Base Stations.

## TELEGRAPH KEYS AND PRACTICE EQUIPMENT

### CALRAD TCO

TRANSISTORIZED CODE  
OSCILLATOR & KEY



\$7.95

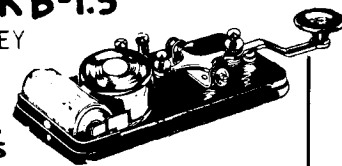
Top import value compares with other oscillators selling for twice the price. Here's the ideal method for learning both sending and receiving the Morse Code through actual practice. Small, compact transistorized unit operates on just four inexpensive penlight batteries. Transmits clean, clear dots and dashes through the built-in loudspeaker. Volume control permits adjustment to the desired listening level. Beautiful black plastic case with brass legs, size 3 1/2" W., 3" H., 1 1/4" D.

Calrad TCO Complete with TK-10 key \$7.95

### CALRAD KB-1.5

PRACTICE KEY  
& BUZZER

\$1.69 ea.  
2/\$2.25



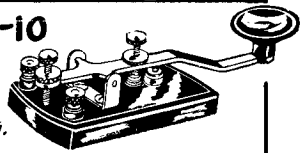
Completely adjustable key for amateur code practice. Dual adjustment, spring and contact clearance on key enabling user to suit his own touch. Buzzer adjustable for high, low or medium frequency. Mounted on base. Binding post terminals. Uses standard 1 1/2-volt battery. Less Battery. Overall size: 6-3/4" x 2-3/4" x 1-3/8"

Calrad KB-1.5 New \$1.69 2/\$2.25  
Batteries-.15 ea.

### CALRAD-TK-10

TELEGRAPH  
KEY

69c ea.  
10/\$6.49



Molded phenolic base and full size knob Key arm is adjustable, has tension spring and easy action bearing pivots. All metal parts plated-1/8" silver contacts. Standard size key has base 3 1/4" x 1-7/8" wide; 5" long overall. Knurled adjustment and binding post screws Mounting holes in base.

TK-10 Calrad New 69c 10/\$6.49

### CALRAD CB-1.5

HIGH FREQUENCY  
BUZZER

78c

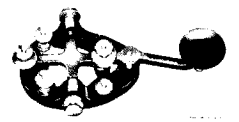
Produces steady high frequency signal. Excellent for code practice. Screw control for adjusting pitch and volume. Used with standard 1 1/2 volt battery. Less Battery.

Calrad CB-1.5 New 78c

### J-37

MILITARY KEY

REAL  
VALUE! \$1.49



A sturdy professional type adjustable key. A real value at this low price.

J-37 Ex. Cond. \$1.49

### MONARCH KY-103

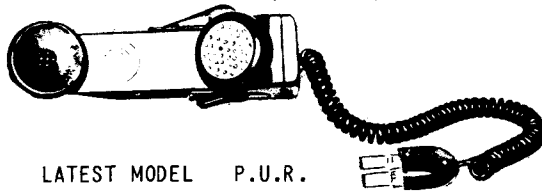
Ball Bearing  
SPEED KEY \$2.95



Carefully constructed speed key with ball bearing action for smooth, velvet action. Contacts are pure silver & easily adjustable. Brass base.

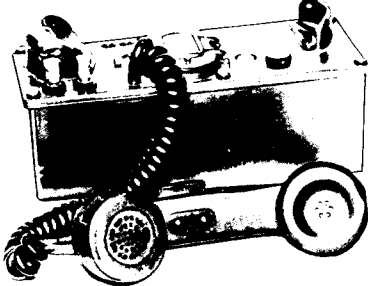
Monarch KY-103 NEW \$2.95

## TA-1/TT SOUND POWERED TELEPHONE



LATEST MODEL P.U.R.

## TA-312/PT & TA-43/PT FIELD TELEPHONE



TA-312/PT & TA-43/PT

P.U.R.

## 12 LINE PORTABLE SWITCH BOARD

LATEST MODEL



SWITCHBOARD SB-22/PT

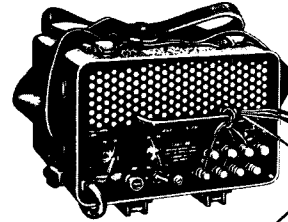
P.U.R.

## AN/TCC-14 TELEGRAPH-TELEPHONE TERMINAL

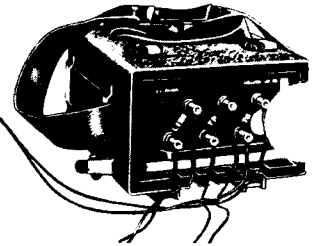
TELEGRAPH TERMINAL TH-5/TG



TELEGRAPH-TELEPHONE SIGNAL CONVERTER TA-182/U



FILTER ASSEMBLY, ELECTRICAL F-98/U



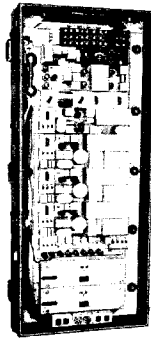
FUNCTIONAL DESCRIPTION

Terminal AN/TCC-15 is portable equipment used to transmit speech and telegraph pulses, simultaneously, through telephone facilities. Telephone and telegraph circuits in the equipment are completely independent of each other and are controlled separately. The terminal does not require a direct current telegraph switchboard since its voice-frequency telegraph loops may be switched through existent telephone switchboards and the signal transmitted as a voice-frequency-shift signal. This terminal may be used in point-to-point, network, switched and remote control radio systems. When used in a 2-wire facility, speech plus half-duplex telegraph or teletypewriter operation may be obtained; when used in a 4-wire facility, full-duplex telegraph or teletypewriter operation can be obtained if desired.

P.U.R.

CF-1B, CF-2, CF-3, CF-4, CF-5, CF-6, & CF-7, AN/TCC-4&8 AN/TCC-14

## TELEPHONE & TELEGRAPH TERMINAL EQUIPMENT



From stock delivery of all standard Army models of carrier equipment for multi channel tele-communications systems. Write us your requirements. All equipment fully overhauled & guaranteed.

P.U.R.

## TELETYPE EQUIPMENT



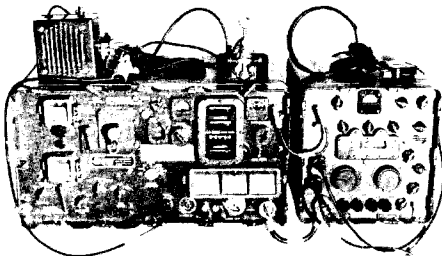
From stock delivery of all popular models of Teletype Corp. and Kleinschmidt Laboratories. Teletype machines all fully overhauled & guaranteed. Write us your requirements. Models available: 14, 15, 19, & 28 TT-4/TG, ect.

Also available frequency shift converters and other associated teletype accessories.

P.U.R.

*Newest Signal Corps Equipment - SAVE AT COLUMBIA*

## AN/GRC-19 RADIO SET



Characteristics:

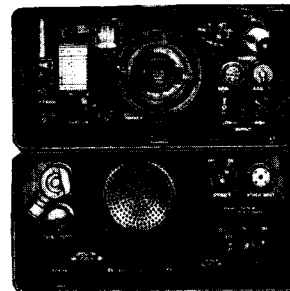
Radio Set AN/GRC-19 consists of Radio Transmitter T-195/GRC, Radio Receiver R-392/URR, a 15-ft. whip antenna, necessary audio accessories and interconnecting power and control cables. This set is capable of radioteletype operation when used with associated equipment. The transmitter is automatically controlled.

XMTR Power Output: 100 W  
 Type of emission: AM, CW and RTT  
 Frequency coverage Transmitter: 1.5 to 20 mc  
 " Receiver: .5 to 32 mc  
 Tuning: continuous tuning  
 Preset facilities (transmitter only): 7  
 Power source: 28 volts

AN/GRC-19

P.U.R.

## AN/GRR-5 RADIO RECEIVING SET



AN/GRR-5

P.U.R.

Radio Receiving Set AN/GRR-5 is a radio receiver used for tactical purposes. This receiver is capable of being operated in a field installation, vehicular installation or as a fixed station.

Characteristics:

Weight: 76 lbs  
 Type of set: general use  
 Type of signals which received: voice, CW  
 Frequency coverage: 1.5 to 18 mc  
 Tuning: continuous tuning  
 Preset facilities: 10  
 Power requirements: 6, 12 or 24V. DC. or 115/1/60 or dry batteries.



**COLUMBIA Electronic Sales, INC.**

4365 WEST PICO BOULEVARD • LOS ANGELES 19, CALIFORNIA • WEBSTER 8-3731

CABLE ADDRESS "COLECTRON" - OPEN MONDAY AND FRIDAY NIGHTS "TIL 9:00 P.M."

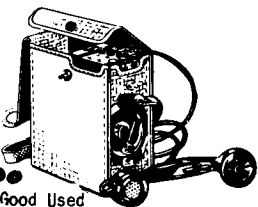
# TELEPHONES · INTERCOMS

EE-8 FIELD

TELEPHONE

**\$9.95**

2 FOR \$19.00



Good Used  
Portable Field Type Telephones, compact, rugged with a range up to 25 miles complete with inter-magnetic ringer, bell, & handset. Uses two standard size D flashlight batteries for power. As many units as desired can be paralleled for your private telephone system. Dim. 9 1/2" x 7 1/4" x 3 1/2" Wt.: 10 Lbs.

EE-8 Rebuilt Like New.....\$19.95 each

CRADLE DIAL  
PHONE

**\$3.95**



Modern cradle type dial telephone in black case can be used to make complete private phone systems. Includes handset, dial, bell, induction coil, etc., ready to connect. Design may vary slightly from illustration. Available in 2 types.

Cradle Telephone with dial Ex. Cond. \$3.95  
2 for 7.50  
Cradle Telephone less dial " " 2.95  
2 for 5.00

TELEPHONE WIRE

100 FT ROLL **\$2.95**

2 conductor twisted No. 20 gauge stranded. Suitable for indoor, outdoor installations.  
100 Ft. Roll \$2.95 1000 Ft. Roll \$22.50

-1 CARBON TRANSMITTER

**79¢**



F-1 type carbon transmitter capsules.

F-1 Mic. Unit Ex. Cond. 79¢ ea.

HA-1 RECEIVERS

**79¢**



200~replacement capsules.

HA-1 Rec. Ex. Cond. 79¢ ea.

TC-1 TELEPHONE

PICKUP COIL

**\$1.95**



Record or Amplify telephone conversations or loud speaking telephone when used recorder or mike amp. Highly sensitive and efficient magnetic induction coil picks up both sides of telephone conversations. Under base of desk phone or top of ringer box of wall phones. Size 4 1/2" L, 1 1/2" W, only 1/4" thick. Shielded cable 56" long.

TC-1 Calrad \$1.95

TC-2 TELEPHONE  
PICKUP

**\$1.69**



As above except attaches with suction cup to rear of any desk phone or on side of ringer box. Only 1" max. dia., 2" long with 5 ft. shielded cable.

TC-2 Calrad Each \$1.69

MIKECORDS

NEW!

Kurly Kords for microphones, telephone handsets, etc. Less than 1 foot compact, expands 5 ft.  
One conductor shielded CC-1001 \$1.79  
Two conductor, One shielded CC-2001 1.95  
Three conductor, One shielded CC-3001 2.25  
Four conductor, No shield CC-4000 2.59

H-33/PT

HANDSET

**\$9.95**



H-33/PT Handset a combination 600 Ohm Receiver and a 100 Ohm Carbon Microphone with a press to talk switch. This Handset is used with all GRC & PRC Radio Sets. 5 ft. cord with U-77/U plug.

H-33/PT Ex. Cond. Checked Out \$9.95

WE F-3 COMMUNICATIONS  
HANDSET

**\$4.95**

Used for two way radio sets. Has round push to talk switch with 5 ft. cord.

WE F-3 Ex. Cond. \$4.95

TS-13 COMBINATION  
RECEIVER & MICROPHONE

**\$3.95**



TS-13 A Combination 600 Ohm Receiver and a 100 Ohm Carbon Microphone and a Butterfly type-press to talk switch. Complete with 5 ft. Cord and PL-55 & PL-68 Plug

TS-13 Ex. Cond. Checked Out \$3.95

TS-10 HANDSET

SOUND POWERED

2 FOR \$25.00



**\$12.95**

TS-10 This is the original Sound Powered Handset designed by Western Electric for the signal corps. Two or more units can be connected in parallel for use over distances up to 25 miles. (No batteries required)

TS-10 Ex. Cond. Checked Out \$12.95 ea. 2/\$25.00

TELEPHONE  
SYSTEMS

**\$19.95**



Two attractive desk style telephones complete with built in buzzer at each phone. Operates from any 6V dry battery (not supplied) complete with 50 ft. 3 conductor cable. As many extra stations as desired can be attached to this system.

Model 500 Desk Phone Set per pair Like New \$19.95  
Extra Model Desk Phone Per Unit " " 10.50  
6V Heavy duty telephone battery NEW 1.49

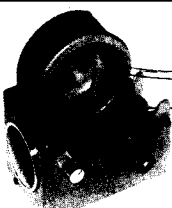
COILED HANDSET CORD

**89¢**



3 conductor coiled handset Cord, NEW 89¢ ea.

AMP-@-FON  
TRANSISTORIZED  
TELEPHONE AMPLIFIER



Terrific telephone amplifier that's priced to sell! Tested and proven Talk and be heard up to 25 feet away, even in adjoining room! With volume control and output jack. Long life from standard penlight cells. Rugged plastic case.

**\$14.95**

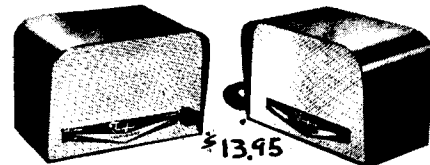
AF-1 NEW \$14.95

OTHER HANDSETS AVAILABLE

H-22/U Ex. Cond. \$4.95 TS-9 Ex. Cond. 4.95  
H-23/U " " 4.95 TS-11 " " 4.95  
H-64/U " " 4.95 TS-15 " " 4.95

# Fanfare

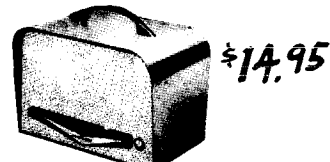
## INTERCOMS



**\$13.95**

TAL INTERCOM - Economy 2 station system with 50 ft. cable. Remote is always open - no switch to operate. Sturdy styled metal cabinets - ideal for baby sitting and the home. Ready to operate - nothing more to buy. Weight: 6 lbs. Extra remote TR may be added.

Tal, Intercom NEW \$13.95



**\$14.95**

BB-1 BABY-COM - A one-station, wire-less radio intercom. No installation, no wires required - merely plug in to any AC or DC outlet and voice is heard through any radio (even car or battery radios). Ideally suited as a portable baby-sitter. Extremely sensitive, can be heard 300 ft. away. Blue or pink cabinets. Weight: 4 lbs.

KI-1, Baby-Com NEW \$14.95



**\$19.95**

FX-2 TWIN - Ultra-sensitive 2-station system with 50 ft. cable. Powerful amplifier picks up slightest noise. Three way Dictate-Talk-Listen switch. Remote has TALK-LISTEN switch to permit originating calls to master. Use it anywhere - home or business. Extra remote. PS. may be added. Weight: 6 lbs.

FX-2, TWIN NEW \$19.95

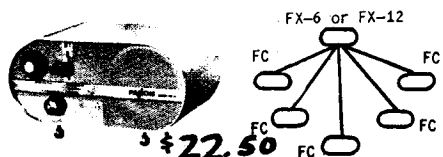
All FX-6 or FX-12



**\$20.95**

FX-6, EXECUTIVE - A dual purpose master, for use with up to five FC remotes in a MASTER-TO-REMOTE system, or up to six masters in an ALL MASTER system. Five individual station selector switches. Dictate-Talk-Listen switch. In all master systems, 3 private conversations or conference of all stations may be held. Weight: 4 lbs.

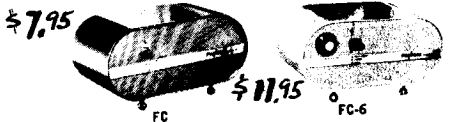
FX-6, Executive NEW 20.95



**\$22.50**

FX-12, MANAGER - A dual purpose master for use with up to ten FC remotes. In a MASTER-TO-REMOTE system, or up to eleven masters in ALL MASTER system. Twelve position rotary selector switch with "All-Call" and "Standby" Dictate-Talk-Listen switch. Five private conversations may be held in an all master system. Weight: 4 lbs.

FX-12, Manager NEW \$22.50



**\$7.95**

**\$11.95**

FC REMOTE - Used in conjunction with FX-6, FX-12, FM-6, FIM-12. \$7.95

FC-6 REMOTE - Six station selective remote used with FIM-12 only. \$11.95



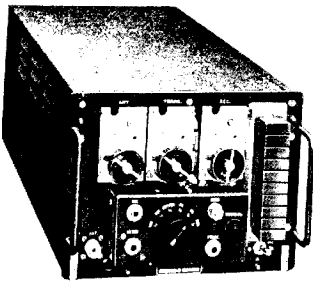
**\$54.95**

FW-50, Delux WIRELESS - A complete 2 station system ready to operate. No wires - no installation - just plug into any AC or DC outlet. Four tubes plus silicon rectifier amplifier. Three way Talk-Listen-Dictate switch in brushed brass cabinets. Weight: 9 lbs. Model FW-51, additional single station for above, may be added.

FW-50, Delux Wireless NEW \$54.95

The complete line uses the same proven circuit and components: Three tubes - 12AU6, 6BC6 and 35W4 - 3 1/2" Alnico V speaker - Neon pilot light - Press-to-talk switch with long lasting "Coil-Spring" return - AC or DC - Remotes may be private or non-private - 2 1/2" wait output 20 watt power consumption - Dimensions: 8" x 4" x 8" - Decorator colors in Grey and Tan. (Black, Ivory or Brushed Brass, extra.)

## AN/ARC-1 TRANSCEIVER

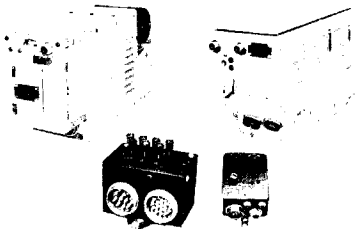


**FUNCTIONAL DESCRIPTION:** Radio Set AN/ARC-1 is an airborne two way AM Radio Transceiver that provides 10 crystal controlled channels within the frequency range of 100 to 156 megacycles. This set features a guard channel which can be monitored while operating on any one of the other channels. This set can also be used by amateurs on the two meter band.

**ELECTROMECHANICAL DESCRIPTION:** Transmitting power output: 8 watts on transmitting Power Inputs: 28v D.C. @ 10 amps

<b>Principal Components:</b>		
RT-18/ARC-1 Transceiver	Ex. Cond.	\$39.95
DY-9/ARC-1 Dynamotor	"	9.95
MT-230A/ARC Mounting Base	"	9.95
C-45/ARC-1 Control Box & Mounting	Ex. Cond.	5.95
Set of Connectors	Ex. Cond.	5.95

## AN/ARC-5 VHF RADIO SET



The AN/ARC-5 VHF radio set consists of the following major units: Rec. Xmtr, Modulator and the Control Boxes. AN/ARC-5 covers the Frequency of 100-156 mc in four Preset Crystal Controlled Frequencies. Ideal for installation in Small Planes, Vechicals or Base Stations, intended for 24V. DC. operation but can be modified for 12V. DC.

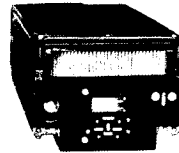
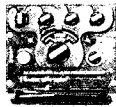
### TECHNICAL CHARACTERISTICS:

Freq. Range: 100-156 mc AM  
 Preset Freq.: REC. 4 channels within 100-156 mc  
 XMTR, Channel "A" 100-124 mc  
 Channel "B" 122-146 mc  
 Channel "C" 122-146 mc  
 Channel "D" 132-156 mc  
 Power Output: Xmtr 8 Watts  
 Power Input: Rec.; 24V. @ 3 AMPS  
 Xmting; 24V. @ 10 AMPS  
 Wt. per installation: 50 Lbs., Approx.

<b>Principal Components:</b>		
R-28/ARC-5 VHF Rec.	New	\$22.50
T-23/ARC-5 VHF Xmtr	Ex. Cond.	14.95
MD-7/ARC-5 Modulator	"	4.95
DY-2/ARR-2 Rec. Dyn.	"	1.95
DY-8/ARC-5 Xmtr Dyn.	"	3.95
C-30/ARC-5 Channel selector control box	"	2.95
C-42/ARC-5 Audio Control Box	Ex. Cond.	2.95
MT-69/ARC-5 Xmtr Mtg. Rack	"	2.95
MT-7/ARR-2 Rec. Mtg. Rack	"	2.95
MT-76/ARC-5 Mon. Mtg. Rack	"	1.50
Set of Connectors	"	9.95
AN-104-B VHF Antenna	"	19.95
*crystals (Mfg to order) NEW each		3.00

**PRINCIPAL COMPONENTS:** All Ex. Cond. & Checked Out  
 RT-173/ARC-33 Receiver-Transmitter \$695.00  
 MT-611/ARC-33 Mounting 25.00  
 C-784/ARC-33 Control Panel 25.00  
 Set of Connectors 15.00

## AN/ARC-34 TRANSCEIVER



**FUNCTIONAL DESCRIPTION:** Radio Set AN/ARC-34 is a Remotely-Controlled Subminiaturized U.H.F. Transmitting-Receiving Set by RCA which can be accurately preset to any 20 of 1750 Frequencies between 225.0 and 399.9 Megacycles. Also any one of 1750 Frequency can be manually tuned. This set has a self-contained dynamotor Power Supply and a Pretuned Guard Receiver usually on 243 mc. which provides an "ALWAYS READY" EMERGENCY CALLING CHANNEL. This set incorporates features which make it ideally suited for installation in Aircraft, where space, versatility, and reliability are at a premium.

**TRANSMITTER Power Output:** 8 Watts AM  
**Power Input:** 28v. DC. @ 18 AMPS

<b>Principal Components All Ex. Cond. Checked Out</b>		
RT-263/ARC-34 Radio Trans. Receiver	\$750.00	
C-1057/ARC-34 Control Box	35.00	
MT-1099/U Mounting Rack.	50.00	
Set of Conectors.	20.00	

## AN/ARC-27 TRANSCEIVER

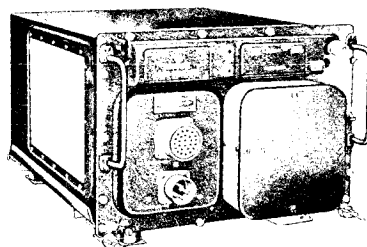


**FUNCTIONAL DESCRIPTION:** Radio Set AN/ARC-27 is a Remotely-Controlled UHF Transmitting-Receiving set mfg. by Collins Radio, which can be accurately preset to any 18 of 1750 frequencies between 225.0 and 399.9 mc. With the use of the proper remote control box any frequency between 225.0 & 399.9 mc. can be obtained in steps of 100 KC. A Guard Receiver is also incorporated within the Transmitter-Receiver to permit constant monitoring of a guard frequency usually 243 mc.

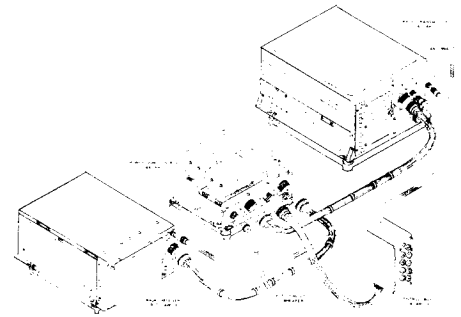
**FUNCTIONAL DESCRIPTION:** Transmitter power output: 9 watts AM  
**Power input:** 28v. D.C. @ 15 amps

<b>Principal Components</b>		
RT-178/ARC-27 Transceiver	EX. Cond.	\$399.95
C-626/ARC-27 Control Box	"	9.95
MT-822/ARC-27 Mounting Rack	"	9.95
Set of Connectors	"	19.95
AT-141/ARC Antenna	"	19.95

## AN/ARC-33 RADIO SET



## AN/ARC-3 RADIO SETS

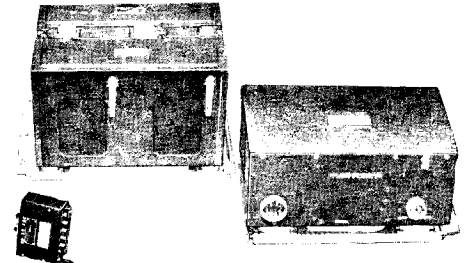


**FUNCTIONAL DESCRIPTION:** Radio Set AN/ARC-3 is a Airborne 100-156 MC AM XTAL 8 channel remote controlled Receiver & Transmitting. This equipment features separate receiving & transmitting units which permit the even distribution of weights in the aircraft. This equipment is also easily adapted for Amateur Radio use in the Two Meter Band.

**ELECTROMECHANICAL DESCRIPTION:** Transmitter: Power Output: 8 Watts AM  
**Power Input:** 28v.D.C. @ 12 AMPS.

<b>Principal Components</b>		
R-77/ARC-3 Radio Receiver	EX. Cond.	\$14.95
T-67/ARC-3 Radio Transmitter	"	14.95
J-68/ARC-3 Power-Junction Box	"	4.95
DY-21/ARC-3 Transmitter Dynamotor	"	9.95
DY-22/ARC-3 Receiver Dynamotor	"	9.95
C-118/ARC-3 Control Box	"	7.50
Set of Connectors.	"	9.95
Set of Mounting Plates	"	9.95
AN-104-B Antenna	"	19.95
Crystals (MFG. to order) New each		3.50

## SCR-522 RADIO SET



**FUNCTIONAL DESCRIPTION:** Radio Set SCR-522 is a Airborne Two Way Radio-Telephone set that can also be mounted in a vehical or used as a Ground Station. This equipment provides four Crystal-Controlled AM Channels within the frequency range of 100 to 156 megacycles. This set makes an excellent Two Meter Amateur Station and is also widely used by the Civil Air Patrol.

**ELECTROMECHANICAL DESCRIPTION:** Transmitter Power output 8 watt  
**Power Requirements:**

28v. DC. @ 12 amps with PE-94 XMTR. DYN.  
 12v. DC. @ 24 amps with PE-98 XMTR. DYN.  
 110v. AC. 60 cps with RA-62 rectifier.

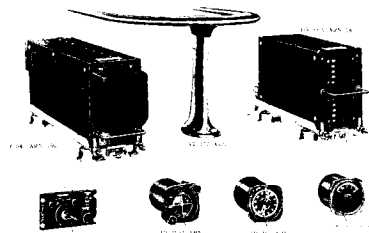
<b>Principal Components</b>		
BC-625 Radio Transmitter	EX. Cond.	\$14.95
BC-624 Radio Receiver	"	14.95
BC-602 Control Box	"	3.95
PE-98 12V. D.C. Dynamotor	"	14.95
PE-94 24V. D.C. Dynamotor	"	3
RA-62 110V. AC.-Rectifier	"	45
Set of Connectors	"	5
Set of Mounting Plates	"	4.

The tuning range of the set encompasses 1750 crystalcontrolled receive and transmit channels. Any 20 of these channels can be preset at Control. Panel C-784/-ARC-33 so as to be quickly available when desired. Also, any one of the 20 preset channels can be set up easily at the control unit to any of the 1750 available frequencies. Operating frequencies are spaced in increments of 100 kc. Mfg by Bendix Radio.

## COLLINS 51R-3 VHF/COM. RECEIVER



MILITARY VERSION  
AN/ARN-14-C



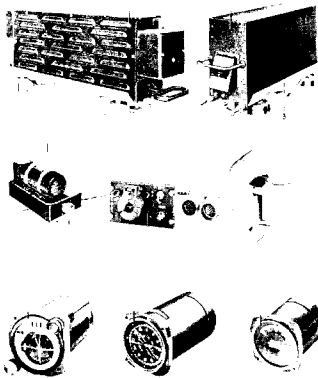
The Collins 51R-3 provides 280 Crystal Controlled Receiving Channels with 100KC spacing between 108.0 & 135.9mc. Receives all VOR/LOC and Communications Frequencies. This set is widely used by Airlines the World over. The Military version of the 51R-3 is the R-540/ARN-14C. Power input 24V. DC.

Principal Components: All FAA Certified.

51R-3 Collins VOR Receiver	\$1290.00
R-540/ARN-14C Military Version	950.00
DY-66A/ARN-14 Dynamotor	P.U.R.
C-760/A Control Panel	"
ID-249A/ARN OMNI Mag. Ind.	"
ID-250/ARN Course Ind.	"
ID-251/ARN Radio Ind. Control	"
MT-627A/ARN-14 Receiver Mtg.	"
MT-628/ARN-14 Dynamotor mount	"
AT-172/ARN-14 Antenna	"

## BENDIX NA-3A VHF

NAVIGATION SYSTEM  
MILITARY VERSION (AN/ARN-14D)



The MN-85-F VOR system is the Bendix equivalent of the Collins 51R-3. This system provides 280 Crystal Controlled Receiving Channels with 100KC spacing between 108.0 & 135.9mc. The Military equivalent to the MN-85-F system is the AN/ARN-14-D. Power Input: 24V. DC.

Principal Components: All FAA Certified

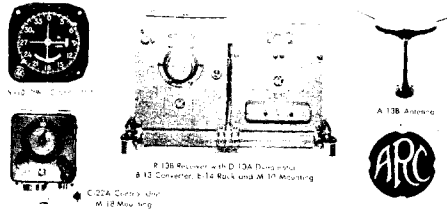
MN-85-F Bendix VOR Rec.	\$1250.00
R-541/ARN-14D Military Version	950.00
DY-66/ARN-14 Dynamotor	P.U.R.
DY-84/ARN-14A Dynamotor	"
C-760A/A Control Panel	"
ID-249A/ARN OMNI Magnetic Indicator	"
ID-250/ARN " " " "	"
ID-251/ARN Radio Indicator Control	"
MT-627A/ARN-14 Rec.-Mtg.	"
MT-628/ARN-14 Dyn.-Mtg.	"
AT-172/ARN-14 Antenna	"

## ARC-MODEL R-15

The R-15 VHF Tunable Receiver is exactly the same as the R-19 except that it tunes 108-135MC in one band.

Principal Components:	
R-15 (28V) Rec (108-135MC)	Ex. Cond. \$59.50
D-10A (28V) Dynamotor	Ex. Cond. 9.95

## AIRCRAFT RADIO CORP. VOR/LOC RECEIVING SYSTEM

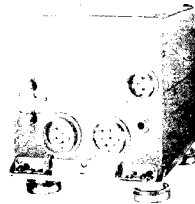


The ARC type VOR/LOC Receiving System provides continuous coverage, between 108 & 135 mc. This system is ideal for Light Planes as the weight of the complete system including control box & indicator are only 22 Lbs. Equivalent to the Military Model AN/ARN-30A, for 24V. DC. installation only.

Principal Components:

R-13B Receiver With D-10A		
Dynamotor	FAA Certified	\$150.00
B-13A Converter (CV-265A/ARN-30A)	"	195.00
B-10A Converter	"	95.00
F-10A Amplifier	"	50.00
E-13B Dual Rack with M-22 Mount	"	47.50
C-1254 Control Box	"	39.50
A-13B VOR Antenna	"	65.00
IN-10 Omni Mag. Ind.	"	450.00
ID-48 Flag Alarm Ind.	"	75.00
I5463 Course Selector	"	95.00

## ARC MODELS T-11 & T-13 VHF TRANSMITTERS

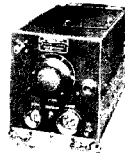


The T-11 & T-13 are 5 channel, 2 watt Output Light weight VHF XMTRS. The T-11 covers any 2mc Band from 116-132. The T-13 covers any 2 mc Band from 125-148 mc. These XMTRS derive from the R-15 or R-19 companion Receivers. These XMTRS are ideal for single engine light planes. Wt.: 3.5 Lbs.

Principal Components:

T-11 XMTR (28V) 116-132MC	Ex. Cond.	\$69.95
T-13 XMTR (28V) 125-148MC	"	69.95
M-11A Shock Mounting	"	8.95
Connectors	" ea	1.00

## ARC-MODEL R-19 VHF RECEIVER

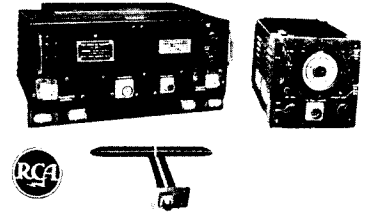


The ARC Model R-19 is a Tunable VHF Receiver which tunes 118-148MC in one band. This Receiver is a 9 tube Superheterodyne with 3 Tuned Circuits of RF, 8 Tuned Circuits of IF @ 15MC. Plus Noise Limiter, AVC & 2 AF Stages. This Receiver is excellent for light planes having a 24V. DC. power source. Can be modified to 12V. DC. The military designation of the R-19 is R-508/ARC. This Receiver is designed for remote control operation.

Principal Components:

R-19 (28V) Rec (118-148MC)	Ex. Cond.	\$49.95
D-10A (28V) Dynamotor	Ex. Cond.	9.95

## SCR-718-C RCA MODEL AVQ-9 ELECTRONIC ALTIMETER

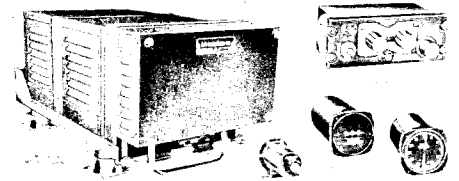


The SCR-718-C is a Pulse Radar Transceiver intended for Aircraft to provide continuous & instantaneous reading of absolute altitude above land or water. The nominal operating range of this equipment is 0 to 50,000 FT. The installation consists of three major assy: the Transceiver, the indicator & the Antennas (2 ea). This Equipment is the Military equivalent to the RCA AVQ-9 system.

Principal Components:

BC-788-C Radio Transceiver	Ex. Cond.	\$49.95
I-152-C Indicator	"	49.95
MT-14/ARN-1 Mounting Rack BC-788-C	"	4.95
FT-445 " I-152-C	"	9.95
AT-4/ARN-1 Antenna	"	9.95
Set of Connectors	"	9.95

## AN/ARN-21 TACAN SYSTEM



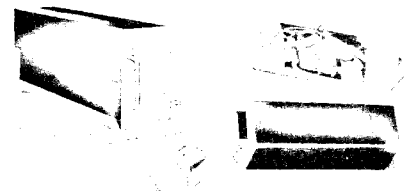
Radio Set AN/ARN-21 is an airborne navigation interrogator-responder designed to operate in conjunction with a surface navigation beacon transponder.

This equipment enables aircraft to obtain continuous indications of its distance and bearing from any selected beacon station located within a line-of-sight distance from the aircraft up to 195 nautical miles.

PRINCIPAL COMPONENTS: All Ex. Cond. P. U. R.

RT-220/ARN-21 Radio Receiver Transmitter	
MT-928/ARN-21 Mounting	
C-866/ARN-21 Radio Set Control	
ID-307/ARN Azimuth Indicator	
CV-279/ARN Phase Detecting Network	
ID-310/ARN Range Indicator	

## AN/APN-22 ALTIMETER



Radar Set AN/APN-22 is a microwave altimeter which is designed to measure the terrain clearance of an aircraft without the necessity of adding antennas or other equipment external to the aircraft. The equipment operates in the 4200-4400-mc band and is designed to provide reliable operation over the ranges of 0-10,000 ft. over land and 0-20,000 ft. over water.

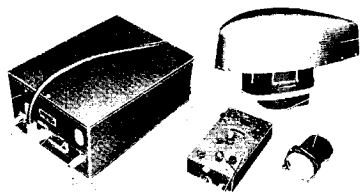
The accuracy of indication is 2 ft. from 0 to 40 ft. and 5% of the correct terrain clearance from 40-20,000 ft.

PRINCIPAL COMPONENTS: All Ex. Cond. P. U. R.

AM-291/APN-22 Electronic Control Amplifier	
MT-803/APN-22 Mounting	
RT-160/APN-22 Radar Receiver-Transmitter	
ID-257/APN-22 Height Indicator	
CY-1409/APN-22 Housing, Receiver-Transmitter	

COLUMBIA ALSO HAS AVAILABLE LEAR, NARCO, BENDIX AND OTHERS. WRITE US YOUR REQUIREMENTS.

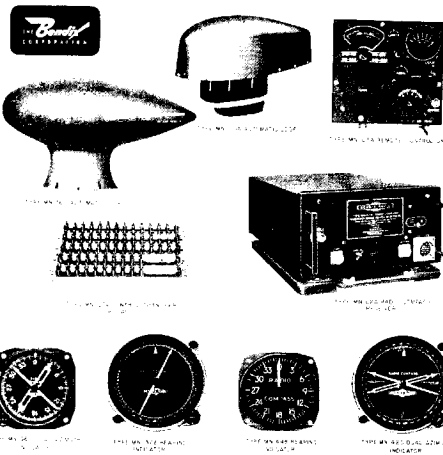
## AN/ARN-6 RADIO COMPASS DF RECEIVER



The AN/ARN-6 16 Tube Radio DF Receiver covers the range of 100 to 1750 kc in four bands. This equipment was designed by Bendix Radio to replace the earlier Airborne Radio Compass such as the SCP-269-G & AN/ARN-7. This equipment is lighter and more compact, and having a Hermetically Sealed Loop Antenna. The AN/ARN-6 is ideal for Aircraft & Marine Applications requiring a compact rugged & reliable set. This equipment with a built in Vibrator Power Supply. The Power Input is 24V. DC. @ 4 AMPS.

Principal Components:	Ex. Cond.	
R-101/ARN-6 Radio Compass Rec.	\$39.95	
MT-274/ARN-6 Rec. Mtg. Rack	14.95	
AS-313/ARN-6 Loop Antenna	39.95	
Loop Antenna Cover & Bracket	9.95	
Loop Transmission Cable (6ft.)	9.95	
MT-149/ARN-6 Control Box	19.95	
MT-275/ARN-6 Control Box Mtg. Plate	9.95	
ID-90/ARN-6 Azimuth Indicator	9.95	
Set of Connectors	3.95	
Flexible Tuning Shaft 10ft.	2.95	

## BENDIX NA-1 RADIO COMPASS SYSTEM



The Bendix Model MN-62 Radio Compass Radio Receiver and accessories is one of the most widely used ADF Systems for installation in Multi-Engine Aircraft in the world. This set provides complete Automatic Radio Bearing information in the Frequency Range of 100-1750 kc in four bands. The power input of this installation is 12 or 24V. DC. @ 2 AMPS & 115V. AC., 400 CPS, 1-Phase.

Principle Components:	
MN-36C Automatic loop FAA Certified	
MN-60A Automatic loop FAA Certified	
MN-63A Remote control unit FAA Certified	
MN-67A Control transfer relay FAA Certified	
MN-62A Radio Compass Receiver FAA Certified	
MN-58C Dual Azimuth Indicator FAA Certified	
MN-378 Bearing Indicator FAA Certified	
MN-448 Bearing Indicator FAA Certified	
MN-42C Dual Azimuth Indicator FAA Certified	

Write for Quote.

## AN/ARN-7 RADIO COMPASS



The AN/ARN-7 Radio Compass MFG. by Bendix Radio is a Four Band Receiver covering the Frequencies of 100 to 1750 kc. This set is very similar to the Commercial Bendix Model MN-62 which is widely used by Airlines all over the world. The AN/ARN-7 is ideal for Marine as well as Aircraft installations. The Power input for the installation is 24V. DC. @ 2 AMPS & 115V. AC: 400 CPS, 1-Phase.

Principal Components:	Ex. Cond.	
R-5/ARN-7 Radio Compass Rec.	\$29.95	
C-4/ARN-7 Control Box & MTG Plate	9.95	
LP-21-LM Loop Antenna	29.95	
CD-365 6 Ft. Loop Transmission Cable	2.95	
I-81 3" Azimuth Indicator	3.95	
I-82 5" Azimuth Indicator	4.95	
BK-22 Relay & Junction Box	4.95	
Set of Connectors	5.95	
FT-213 Receiver Mtg Base	2.95	

## SCR-269-G RADIO COMPASS

See Photo Above.

The SCR-269-G 15 tube Radio Compass was designed by Bendix for Military use in all types of Aircraft. This Receiver covers the Frequency Range of 200-1750 kc in three bands. Ideal for installation aboard Aircraft & Boats requiring a rugged accurate & reliable Radio Compass installation. The power input is 24V. DC. 2 AMPS & 115V. AC.: 400 CPS, 1 Phase.

Principal Components:	Ex. Cond.	
BC-433-G Radio Compass Rec.	\$19.95	
BC-434 Control Box & Mtg Plate	4.95	
LP-21 Loop Antenna	19.95	
CD-365 Loop Transmission Cable	2.95	
I-81 3" Azimuth Indicator	3.95	
I-82 5" Azimuth Indicator	4.95	
BK-22 Relay Junction Box	4.95	
Set of Connectors	5.95	
FT-213 Receiver Mtg Base	2.95	

## AN/ARA-25

### U.H.F. DIRECTION FINDER GROUP

The AN/ARA-25 is employed to home on and to indicate the relative bearings of UHF Radio Signals received with in the Frequency of 225-400 MC. This equipment is used with the following UHF Radio Sets: AN/ARC-27, AN/ARC-33, AN/ARC-34 and ECT.

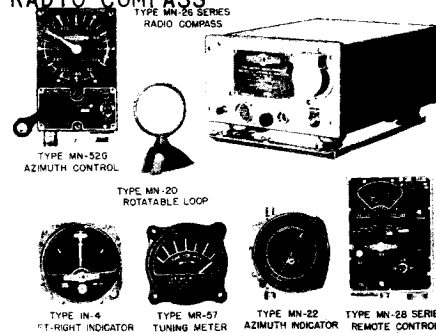
#### PRINCIPAL COMPONENTS:

AM-608/ARA-25 Electronic Control Amp.
MT-1043/ARA-25 Mounting Base for AM-608/ARA-25
AS-578/ARA-25 Antenna
RE-120/ARA-25 Antenna Relay
MT-1042/ARA-25 Mounting for Antenna Relay
ID-90/ARN-6 Bearing Indicator

AN/ARA-25	Ex. Cond.	P. U. R.
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Attention Aircraft Suppliers and Aircraft Repair Shops!  
We have available,  
**LEAR and COLLINS**  
Radio Compasses.

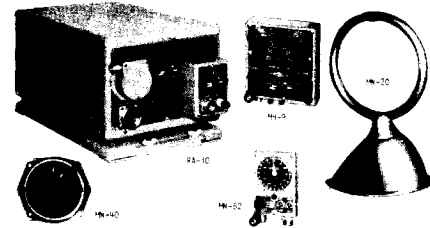
## BENDIX MODEL MN-26 RADIO COMPASS



The Bendix series of MN-26 12 tube Radio DF sets was designed for Marine & Aircraft Installation. This equipment is very popular due to the wide variety of accessories & versatility of Receivers. The MN-26-C Receiver covers 150-1500 KC in three bands. The MN-26-LB covers 200-410 KC, 550-1200 KC and 2.9 to 6 mc. The last band is not used as a radio compass. The MN-26-Y covers the range of 150-695 KC & 3.4-7 mc in three bands. Band three is not used as a Radio Compass. The Power Input is 24V. DC. @ 4 AMPS. It can be converted to 12V. DC.

Principal Components:	Ex. Cond.	
MN-26-C Radio Compass Receiver	\$19.95	
MN-26-LB " " " "	19.95	
MN-26-Y " " " "	19.95	
MN-28 Control Box (Specify Freq.)	4.95	
MN-20 Rotatable Loop Antenna	6.95	
MN-52 Azimuth Control Box	3.95	
MN-40 Azimuth Indicator	4.95	
IN-4 Left-Right Indicator	4.95	
MR-57 "S" Meter	4.95	
Set of Connectors	3.95	
Loop Transmission Cable 6 ft.	4.95	
Flexible Tuning Shaft 10 ft.	2.95	

## BENDIX MODEL RA-10 RADIO COMPASS



The Bendix model RA-10 8 tube Radio D.F. Receiver covers the Frequency Range of 150-1100 KC & 2-10 mc in Four Bands. This Receiver can be used as a R.D.F. on the Frequency Range of 150-1100 KC. The other Range can be used for General Purpose Monitoring. The RA-10 is an ideal set for installation in Boats because of the fact that it can serve a Dual Purpose as a R.D.F. & Marine Frequency Receiver. The Power Input is 24V. DC. @ 3 AMPS, can be modified for 12V. operation.

Principal Components:	Ex. Cond.	
RA-10 Radio compass Receiver	\$24.95	
MR-9 Control Box & MTG. Plate.	9.95	
MN-20 Rotatable Loop Antenna	6.95	
MN-52 Azimuth Control Box	4.95	
MN-40 Azimuth Indicator	4.95	
Set Of Connectors	3.95	
Loop Transmission Cable 6 ft.	4.95	
Flexible Tuning Shaft 10 ft.	2.95	

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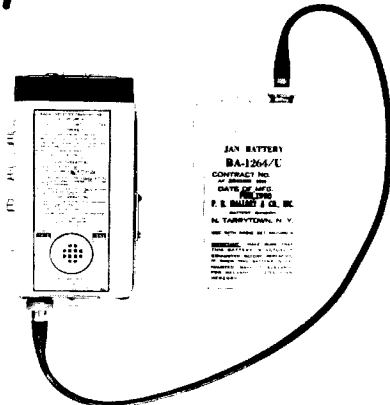
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## AN/URC-4 TRANSCEIVER



**FUNCTIONAL DESCRIPTION:** Radio Set AN/URC-4 is a lightweight handy talky for use primarily in rescue operations. Normally this equipment is carried on the person of airmen during flight or is dropped by parachute to survivors at the scene of a crash and is used for communication with aircraft to facilitate rescue operations.

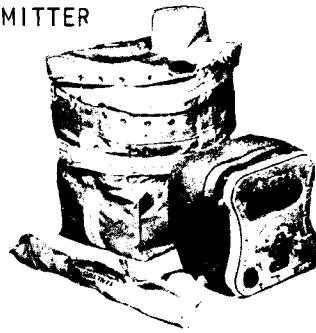
### ELECTROMECHANICAL DESCRIPTION:

Freq. Range: 120-130 mc and 240-260 mc.  
 Preset Channels: 121.5 mc UHF and 243 mc  
 Freq. Control: Crystal.  
 Type Emission: Voice and MCW  
 Power Output: 35 mw.  
 Power Requirements: 1.25 V. DC. & 125 V. DC.  
 Wt. 5 lbs.

Principal Components: Ex.Cond. Checked Out  
 RT-159/URC-4 Transceiver " \$49.95  
 Battery Cable CX-1093/U " 4.95  
 BA-1264/U Battery New 9.95

## AN/CRT-3

RESCUE  
TRANSMITTER



**FUNCTIONAL DESCRIPTION:** The AN/CRT-3 is a rugged Emergency Transmitter carried in aircraft but designed for operation from land or rubber life rafts after being dropped by parachute. This set automatically sends s-o-s signals on 500 KC or 8364 KC. All electrical power is furnished by a Hand-Power Generator inside Transmitter cabinet. This equipment requires no special skill to operate.

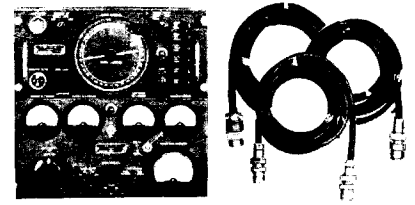
AN/CRT-3 Overhauled & FAA certified. Like New \$ 179.50

## SCR-578

The SCR-578 Emergency Reseve Transmitter is exactly the same as the AN/CRT-3 except that it only transmits on the one Freq. of 500 KC.

SCR-578 Overhauled & FAA certified. Like New \$ 149.50

## I-100-B RADIO COMPASS TEST SET



A portable self-contained Test Set designed to provide a rapid, reliable means of checking Loop-Orienting Circuits of the AN /ARN-7 and SCR-269-6 Radio Compass Sets. This equipment test the Loop Motor, Autosyn, Compensator and Indicators. It tests components by means of substitution of components and by indicating the voltage and current under actual operating conditions. Supplied with complete set of test cables.

**\$ 149.50**

I-100-B Test Set Ex.Cond. Checked Out \$149.50

## AN/ARN-6 BENCH TEST HARNESS

This is a Complete Bench Test Harness with all Cables, Plugs, Mounts, Antenna Shield Cabinet and Racks required to check out the AN/ARN-6 Aircraft Radio Compass.

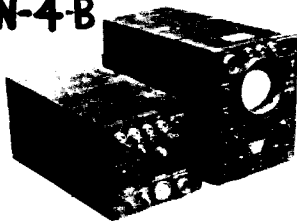
**NEW! \$99.50**

AN/ARN-6 Bench Test Harness New \$99.50

## NAVIGATION

### AN/APN-4-B

LORAN



The AN/APN-4B is a 4 Channel Long Range Navigation Receiver and Indicator which will provide for Ships and Aircraft an exact position by the reception of know Loran Transmitters. The AN/APN-4 is a Compact 2 peice Set with a separate Receiver and Indicator. The Indicator has large 5" CRT. Indicator and is very popular on Fishing Boats and Commercial vessels. This set requires a External 12 or 24V. DC. Inverter.

PRINCIPAL COMPONENTS: ALL ITEMS LISTED BELOW  
 EXCELLENT CONDITION AND CHECKED OUT.

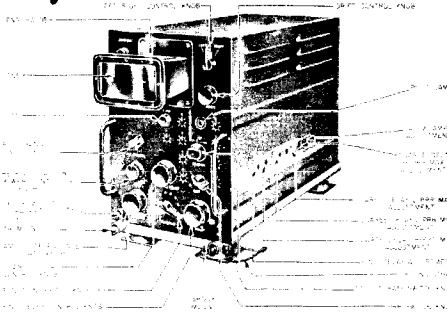
1D-6B/APN-4 Loran Indicator \$39.95  
 R-9B/APN-4 Loran Receiver 29.95  
 Set of Connectors & mounting racks 9.95  
 MG-149 24V. DC. Inverter 14.95  
 PE-109 12V. DC. Invertor 75.00

## OTHER LORAN SETS

*Available*  
 AN/APN-70 &  
 NAVY MODEL DAS 110/1/60

## LORAN

### AN/APN-9 LORAN



The AN/APN-9 is a 4 Channel Loran Receiver & Indicator was MFG by RCA & PHILCO to provide Ships & Aircraft a accurate means of determining the position by the reception of know Loran Transmitters. This system is accurate of within 1% of the distance of the Ground Loran Transmitter. The AN/APN-9 is a compact one piece unit and is ideal where space is at a premium. This unit requires a external 12 or 24V. DC. Inverter.

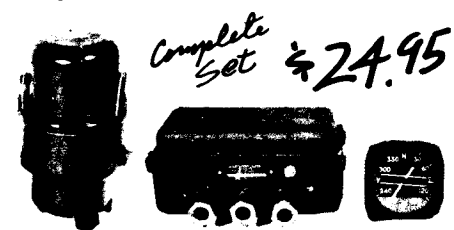
PRINCIPAL COMPONENTS: ALL ITEMS LISTED BELOW  
 EX. COND. & CHECKED OUT.

R-65/APN-9 Loran Receiver Indicator \$64.50  
 Set of Connectors & MTG Rack 4.95  
 MG-149 24V. DC. Inverter & Connector 14.95  
 PE-109 12V. DC. Inverter 75.00

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 IN ELECTRONIC EQUIPMENT!**

## MARINE

### BENDIX REMOTE READING MAGNESYN COMPASS SYSTEM

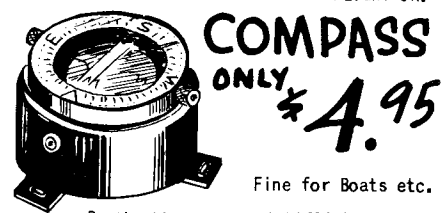


*Complete Set \$24.95*

This compass eliminates errors caused by magnetic disturbances. The Compass Transmitter can be mounted in area free from local magnetic interference. The system consist of a Compass Transmitter, Remote Indicator 12V. DC. Inverter, set of connectors & instructions. (Gov. cost \$250.00)

Complete Set With Instructions Like New \$24.95  
 Extra Indicator for dual instalation Like New \$9.95

### BENDIX-PIONEER STRAIGHT-FLIGHT JR. COMPASS



**ONLY \$4.95**

Fine for Boats etc.

Bendix-Pioneer Straightflight Jr. Compass. Ex.Cond. \$4.95



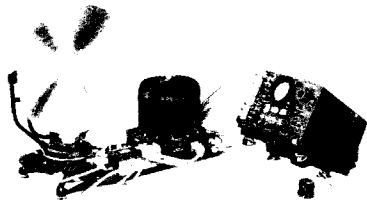
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# Radar Equipment

## AN/APS-2 AIRCRAFT RADAR SET



The AN/APS-2 is an Airborne Search Radar Set operating in the "S" Band (3300 MC). A 5 inch P.P.I. Indicator is used to display information to the operator. This equipment has a search coverage of 360 degrees with a sweep speed of 12 or 25 RPM. The antenna has a full 360 sweep plus a tilt range of 20° up and 20° down. This equipment has four ranges 5, 20, 50, & 90 nautical miles. The power requirements are: 115V. AC, 400-2400 CPS, 1-PH, 8 A and also 24V. DC @ 8 Amps.

AN/APS-2 Radar Set Complete Ex.Cond. Lab. Tested P.U.R.

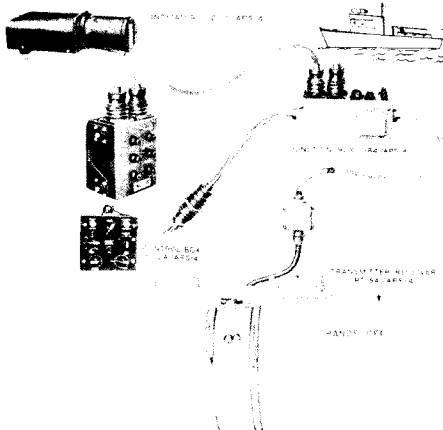
## AN/APS-15 AIRCRAFT RADAR SET

Same Photo as AN/APS-2 above

A "X" Band (9375 ± 40 mc) Set for use as a Search Radar. This set is very similar to the AN/APS-2 except that it operates in the "X" Band. The information received is displayed in a 5" P.P.I. Scope. Also a 2" "A" Presentation Scope is provided. The search ranges are 50 and 100 miles. The antenna has a full 360° sweep. The power requirements are: 115V. AC, 400-2400 CPS, 1-Ph @ 9 Amps and also 24V. DC @ 20 Amps.

AN/APS-15 Radar Set Ex.Cond. Lab Tested P.U.R.

## AN/APS-4 AIRCRAFT RADAR SET EXCELLANT FOR MARINE USE



The AN/APS-4 is a "X" Band 9375 ± 55 mc Search Type Radar Set for the detection of Surface Vessels and Aircraft. The Transmitter Receiver is housed in a pressurized bomb shaped housing. The Antenna scans 150° in Azimuth (75° each side of center). Also the Antenna can be tilted 10° up and 30° down. The AN/APS-4 has a search range of 4, 20, 50 and 100 nautical miles. The power requirements are: 115V. AC, 800-2400 CPS, 1-Ph @ 7 Amps and also 24V. DC @ 4 Amps.

AN/APS-4 Radar Set Like New Complete-\$195.00

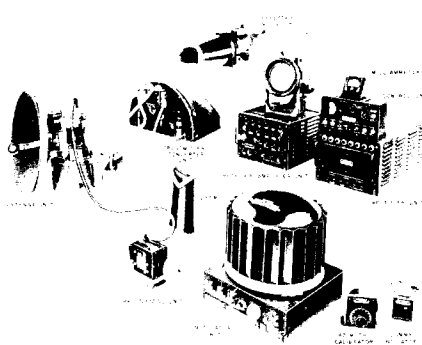
Western Radio Amateur

### A SSB Transceiver from the BC-453

Hard to believe, but a complete SSB transceiver can be built using the BC-453 Command Receiver, 190-550 KC Complete step by step instructions with lots of photos and large easy to read schematics. (8 1/2 x 11 size book)

BC-453 SSB Conversion Manual \$3.00

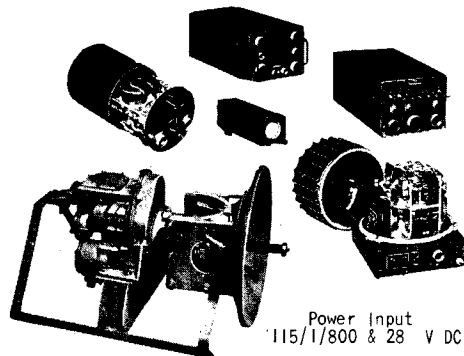
## AN/APS-3 AIRCRAFT RADAR SET



AN/APS-3 is a Airborne "X" Band (9375 ± 30 mc) Radar Set designed to display Azimuth and Range of objects in line of sight within the maximum range of 123 miles depending on the height of the aircraft. The Antenna Sweeps an arc 160° (80° each side of center) plus tilts up and down up to 8°. Search ranges are: 4, 10, 40 & 80 nautical miles. The power requirements are: 115V. AC, 800-2400 CPS, 1-PH @ 8 Amps. And also 24V. DC @ 5 Amps.

AN/APS-3 Radar Set Complete Ex.Cond. Lab Tested P.U.R.

## APS-6 X-BAND RADAR SET



Power Input  
115/1/800 & 28 V DC.

Versatile multi-purpose radar set. Can be used for gun pointing Beacon, Search up to 100 mile. Complete systems.

APS-6 Radar Brand New Complete - \$395.00

## OTHER RADAR SETS AVAILABLE at Columbia

AN/APS-6	AN/SPS-6	SC
AN/APS-19	SCR-584	SK
AN/APS-28	TPS-1	SG-6
AN/APS-31	TPS-10	
AN/APS-42	SO	

## IFF RADAR SETS AND EQUIPMENT

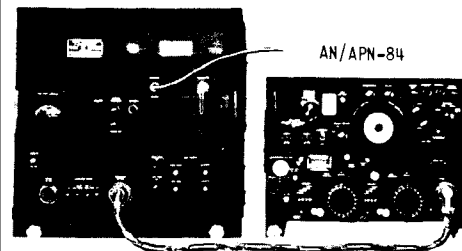
Transponders	Test Sets
AN/APX-6	AN/UPM-4
AN/APX-7	AN/UPM-6
AN/APX-25	AN/UPM-8

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We can supply Original Technical Manuals for most Military Electronic Equipment. Write us your needs.

# Shoran Equipment



AN/APN-3 Ex.Cond. Lab Tested P.U.R.  
AN/APN-84 " " " " "  
AN/CPN-2 " " " " "

Write us your requirements. We have many Shoran Components in stock.

## CONVERSION MANUALS



### SURPLUS RADIO CONVERSION MANUALS

—standard conversion data, instructions, and diagrams for putting most commonly-used surplus equipment to practical use.

#### VOLUME I

BC-221 Frequency Meter; BC-342 Receiver; BC-312 Receiver; BC-348 Receiver; BC-412 Radar Oscilloscope; BC-645 Transmitter/Receiver; BC-946 Receiver; SCR-274 (453A Series) Rcvr.; SCR-274 (457A Series) Xmitters; SCR-522 Transmitter/Receiver; TBY Transceiver; PE-103A Dynamotor; BC-1068A/1161A Receiver; Electronics Surplus Index; Cross Index of A/N Vac Tubes; Amateur Freq. Allocations; Television Channels, FM Freq. \$ 3.00

#### VOLUME II

BC-454 or ARC-5 Receivers; AN/APS-13 Transmitter/Rcvr.; BC-457 or ARC-5 Transmitters; ARC-5 V.H.F. Transmitter/Rcvr.; GO-9/TBW Transmitters; BC-357 Marker Receiver; BC-946B Receiver as Tuner; BC-375 Transmitter; Model LM Frequency Meter; TA-12B Bendix Transmitter AN/ART-13 Collins Transmitter; Simplified Coil-Winding Charts; Selenium-Rectifier Power Units; AVT-112A Light Aircraft Xmtr.; AM-26/AIC to a Hi-Fi Ampl.; Surplus Beam Rotating Mechs.; Prim. Power Requirements Chart; ARB Rcvr. Diagram Only. \$ 3.00

#### VOLUME III

701-A; AN/APN-1; AN/CRC-7; AN/URC-4; ARA; BC-442, 453-455, 456-459, 603, 696, 950, 1066, 1253; CBY-29125, 50083, 50141, 52208-11, 52232, 52302-09; FT-241A (for crystal filter); MBF (COL-43065); MD-7/ARC-5; R-9/APN-4; R23-R28/ARC-5; RAT, RAV; RM-52 (53); RT-19/ARC-4; SCR-274N; SCR-522; T-15/ARC-5 to T-23/ARC-5. \$ 3.00

## The Surplus Handbook, Volume I (Receivers and Transceivers)

Schematic Diagrams and large photographs only on APN-1; APS-13; ARB; ARC-4; ARC-5 (L.F.); ARC-5 (V.H.F.); ARN-5; ARR-2; ASB-7; BC-222, 312, 314, 342, 344, 348, 603, 611, 624, 652, 654, 659, 669, 683, 728, 745, 764, 779, 794, 923, 1000, 1004, 1066, 1206, 1306, 1335; BC-AR-231; CRC-7; DAK-3; GF-11; Mark II; MN-26; RAK-5; RAL-5; RAX-1; SCR-522; Super Pro; TBY; TCS

\$3.00

### COMMAND SETS

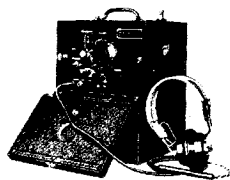
This IS a collection of reprints, containing all of the available information on the conversion of the popular "Command" transmitters and receivers into good ham transmitters and receivers. Invaluable for Novice, Technician, General, Advanced and Extra class operators. 136 fabulous, amazing terrific pages for only \$1.50 postpaid.





## TS-175/U FREQUENCY METER

85-1,000 MC

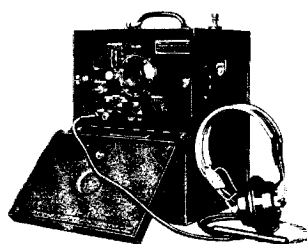


**FUNCTIONAL DESCRIPTION:** Frequency Meter TS-175/U is a portable, crystal-controlled, heterodyne-type unit used in field testing of CW or MCW rf transmitters and signal generators.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 6 v, 135 v dc - Frequency Range: 85 to 1,000 mc - Type of Reception: CW, MCW - Type of Emission: CW, MCW - Power Output Range: 100 uv (rf), 1 mw (af) - Modulation: 900 cy  $\pm$  300 cy - Temperature Range: 40°C. to 55°C. - Accuracy:  $\pm$  .04% (xtal freq).  
TS-175/U Modulated Ex.Cond. Guaranteed \$175.00

## TS-174/U FREQUENCY METER

20-250 MC

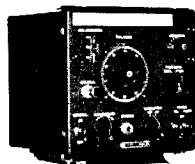


**FUNCTIONAL DESCRIPTION:** Frequency Meter TS-174/U is a portable, crystal-controlled, heterodyne-type unit used in field and depot testing of CW or MCW rf transmitters and signal generators.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 5.5 v, 121.5 v dc - Frequency Range: 20 to 250 mc - Crystal: 1 mc - Fundamental: 20 to 40 mc - Type of Reception: CW, MCW - Voltage Range: RF Signal Input: 20 mv to 2 v - RF Signal Output: .015 mv at fundamental freq; 300 uv from 40 to 250 mc - Audio Power: .5 mw (min) - Impedance: Audio Output: 250 ohms - RF Input: Antenna probe - Temperature Range: -40°C. to +55°C. - Accuracy: .02%  
TS-174/U Modulated Ex.Cond. Guaranteed \$ 175.00

## LM 125-20,000 KC

FREQUENCY METER

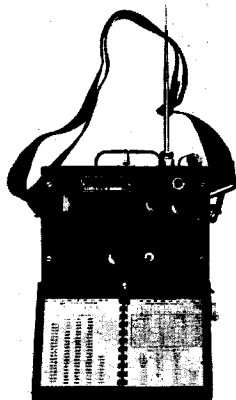


**FUNCTIONAL DESCRIPTION:** Crystal Calibrated Frequency Indicating Equipment LM-series are heterodyne-type units providing a frequency-indicating source used in setting and measuring receivers, transmitters, signal generators, and other electronic devices.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 12 to 14 v, .6 amp dc or 24 to 28 v, .3 amp dc; 200 to 260 v, 10 ma dc. - Frequency Range: 125 to 20,000 kc - Fundamental: 125 to 250 kc, 2,000 to 4,000 kc - Crystal Oscillator: 1,000 kc - Modulation: 500 cy - Accuracy:  $\pm$  .01%  
125-2000 KC, .02% 2000-20,000 KC.  
LM Freq.Meter Ex.Cond. Guaranteed \$59.50

## TS-323/UR FREQUENCY METER

20-450 MC



**FUNCTIONAL DESCRIPTION:** Frequency Meter TS-323/UR is a portable crystal-controlled, heterodyne-type instrument used in field testing of CW, MCW, or pulsed rf transmitters and signal generators.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 6 v, 145 v dc - Accuracy:  $\pm$  .002% - Frequency Range: 20 to 450 mc - Type of Reception: CW, MCW - Type of Emission - CW, MCW - Voltage Output: 50 to 1,000 uv rf - Sensitivity: 10 mw at 50,000 uv - Temperature Range: +32°F to +122°F.  
TS-323/UR Modulated Ex.Cond. Guaranteed \$249.50

## TS-173/UR FREQUENCY METER

90-450 MC



**FUNCTIONAL DESCRIPTION:** Frequency Meter TS-173/UR is a portable instrument used in measuring and calibrating the frequency of transmitters, oscillators, signal generators, receivers with beat-frequency oscillators, and other test equipment.

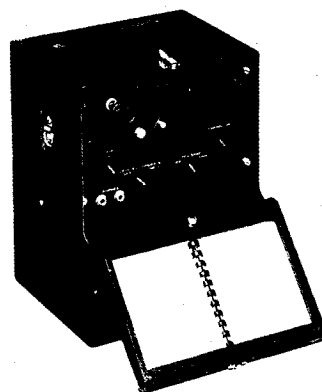
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 20 w, 105 to 125 v, 60 cy, 1 phase ac; 6 v, 135 v dc - Frequency Range: 90 to 450 mc - Crystal Frequency: 5 mc - Type of Emission: AM, CW - Output Voltage Range: 465 uv to .1 v - Impedance: Input: 50 ohms - Output: 50 ohms (rf); 600 ohms (af) - Modulation Data: 60% at 1,000 cy - Accuracy:  $\pm$  .005%.  
TS-173/UR Ex.Cond. Guaranteed \$149.50

Other FREQUENCY METERS available, write us for your requirements. We will be glad to quote you immediately.

All Test Equipment Laboratory Certified and Guaranteed.

## BC-221 FREQUENCY METER SET

125-20,000 KC

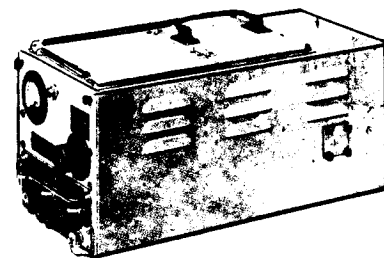


**FUNCTIONAL DESCRIPTION:** Frequency Meter Set BC-221 is a portable, heterodyne-type unit used in measuring and calibrating the frequency of transmitters, oscillators, signal generators, and receivers.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 6 v, 135 v dc - Frequency Range: 125 to 250 kc; 2,000 to 4,000 kc; 125 kc to 20 mc (extended) - Type of Reception: CW - Voltage Output: 2 mv - Temperature Range: -30°C. to +50°C. - Accuracy: .01%.  
BC-221 Unmodulated Ex.Cond. Guaranteed \$69.50  
BC-221 Modulated " " \$115.00

## TS-186/UP FREQUENCY METER

100-10,000 MC



**FUNCTIONAL DESCRIPTION:** Frequency Meter TS-186/UP is a portable, crystal-controlled, heterodyne-type unit used in measuring the frequency of transmitters, oscillators, and signal generators. Application is in field and depot testing.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 70 w, 115 v  $\pm$  10%, 50 to 1,000 cy ac - Frequency Range: 100 to 10,000 mc - Type of Reception: CW, MCW, pulse - Signal Input: 500 uv to 1 v - Signal Output: 10 uv to 20 v - Output Impedance: 250 ohms (audio) - Sensitivity: Temperature Range: 40°C. to 55°C. Accuracy:  $\pm$  .01%  
TS-186/UP Ex.Cond. Guaranteed \$249.50

## OTHER MODELS AVAILABLE

AN/URM-32	FR-4/U
AN/URM-79	FR-5/U
AN/URM-80	FR-6/U
AN/URM-81	AN/USM-29
AN/URM-82	

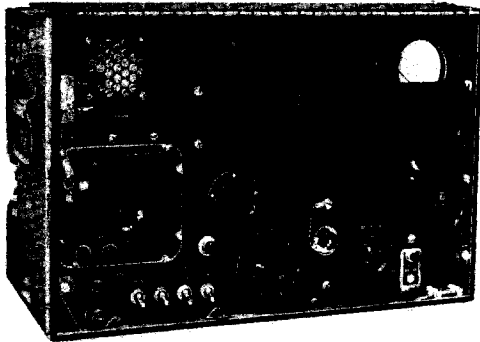
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## I-208 SIGNAL GENERATOR



**FUNCTIONAL DESCRIPTION:**  
Signal Generator I-208 is a portable frequency and voltage standard used in testing, calibrating, aligning, and determining sensitivity of FM radio equipment.

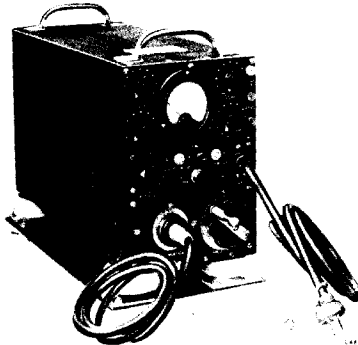
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 115 v, 60 cy, 1 phase ac; or 12V DC. - Frequency Range: 1.9 to 4.5 mc, 19 to 45 mc  
Frequency Modulation: 150 cy; 400 cy; 1,000 cy; 2,500 cy; 5,000 cy  
Frequency Division: 0 to 5 kc (1.9 to 4.5 mc range); 0 to 50 kc (19 to 45 mc range) - Type of Emission: FM - Voltage Output: 1 v across 30-ohm line; .84 v at high output term. - Power Output: .333 mw ac 30-ohm line; 7.03 mw at high output term. - Frequency Stability:  $\pm .03\%$  of dial indication.

I-208

Ex.Cond. Guaranteed \$ 49.95

## LAE

### RF SIGNAL GENERATOR EQUIPMENT



**FUNCTIONAL DESCRIPTION:**  
RF Signal Generator Equipment LAE is a portable unit used in aligning UHF receivers and in measuring work where an accurate, adjustable, and known rf voltage is required.

The unit consists of a variable-frequency cavity oscillator, a power-level monitor, an output attenuator, a pulser, and a power supply.

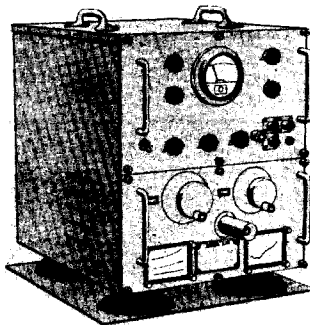
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 120 w, 105 to 125 v, 50 to 60 cy, 1 phase ac - Frequency Range: 520 to 1,300 mc  
Type of Emission AM, CW, pulse - Voltage Range: 1 uv to .1 v  
Power Range: 7 to 107 dbm - Output Impedance: 50 ohms - External Modulation: 10 to 35 v for 10% to 30% AM in plate circuit  
Internal Modulation: Pulse Delay: 3 to 300 usec Pulse Duration 2 to 30 usec Pulse Repetition Rate: 60 to 2,500 pps - Synchronization: Internal or external pulses - Temperature Range: 10 C to +50°C - Accuracy:  $\pm 1\%$  of calibration curve; 1 db  $\pm 1\%$  of attenuator reading.

LAE

Ex.Cond. Guaranteed \$ 100.00

## LAF

### RF SIGNAL GENERATOR EQUIPMENT



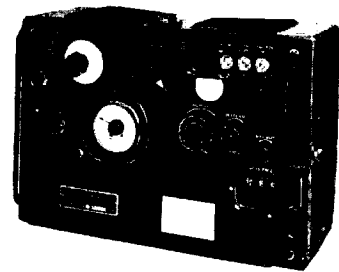
**FUNCTIONAL DESCRIPTION:**  
RF Signal Generator Equipment LAF is a portable instrument used in aligning testing, and servicing radio and radar receivers. Provision is made for external modulation.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 120 w, 105 to 125 v, 50 to 1,600 cy, 1 phase ac - Frequency Range: 90 to 600 mc  
Type of Emission: Pulse - Output Voltage: 0 to 100,000 uv - Impedance: Input: 10,000 ohms Output: 50 ohms - Internal Pulse Delay: 3 to 300 usec Pulse Duration: 2 to 300 usec Pulse Repetition Rate: 60 to 2,500 pps - Accuracy:  $\pm 1\%$

LAF

Ex.Cond. Guaranteed \$ 139.50

## TS-35/AP SIGNAL GENERATOR



**FUNCTIONAL DESCRIPTION:** Signal Generator TS-35/AP is a portable unit used in the testing and general maintenance of X-band radar equipment. It generates SFF signals of known frequency and power, measures frequency and average power of radar transmitter signals, determines receiver recovery characteristics, and observes, in conjunction with an oscilloscope, the video shapes of radar transmitter and receivers. This equipment consists of a signal generator, frequency meter, and power meter.

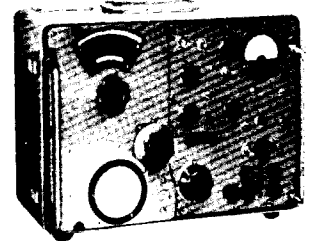
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 105 to 125 v, 1.7 amp, 50 to 1,600 cy, 1 phase ac - Frequency Range: 8,500 to 9,600 mc - Type of Emission: CW, FM, pulse - Power Range: Power Meter: .1 mw to 2 w (avg) Signal Generator: 0 to 70 db below 1 mw peak - Output Impedance: 50 ohms - Temperature Range: -40°F to +122 F - Accuracy: Frequency:  $\pm 5$  mc abs freq Power:  $\pm 1.5$  db from 1 mw to 2 w abs pwr.

TS-35/AP

Ex.Cond. Guaranteed \$ 49.50

## AN/URM-26

### RF SIGNAL GENERATOR SET



**FUNCTIONAL DESCRIPTION:**  
RF Signal Generator Set AN/URM-26 is an rf signal producing equipment used in aligning and testing the sensitivity of radio receivers, as well as in other test applications where a source of CW or MCW signals is required. It can be modulated internally (AM) by a source of sine wave, or externally (PM) by pulsed voltages.

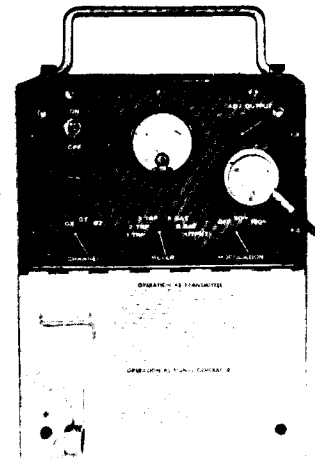
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 60 w, 115v  $\pm 10\%$ , 50 to 1,600 cy, 1 phase ac - Frequency Range: 4 to 408 mc  $\pm .5\%$  in six bands - Type of Emission: AM, CW, MCW, PM - Modulation, Sine Wave: Amplitude: 0 to 50% Internal: 400 to 1,000 cy External: 100 to 20,000 cy Spurious FM: Less than .035% at 15% modulation, or .08% at 30% modulation - Modulation Pulse External: Amplitude: 40 v (min) Pulse Rate: 50 to 5,000 pps Pulse Width: 2 to 40 usec to 100 mc; 1 to 40 usec from 100 to 408 mc  
RF Output Voltage: .1 to 100,000 uv (-127 to -7 dbm) Load Impedance: 50 ohms Accuracy:  $\pm 10\%$  to 100 mc;  $\pm 20\%$  from 100 to 408 mc (AM, attenuation)

AN/URM-26

Ex.Cond. Guaranteed P. U. R. .

## TS-170/ARN-5

### ILS TEST OSCILLATOR

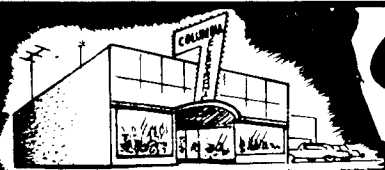


**FUNCTIONAL DESCRIPTION:** Test Oscillator TS-170/ARN-5 is a portable, battery-operated, crystal-controlled instrument used in checking receiver sensitivity and audio channels. It provides either a radiated or cable transmitted signal for preflight checking of radio receivers used in glide path equipment.

**ELECTROMECHANICAL DESCRIPTION:**  
Power Requirements: 1.5 v, 90 v dc  
Frequency: 332.6 mc, 338.8 mc, 335 mc

TS-170/ARN-5

Brand New (Less Batteries) \$19.95



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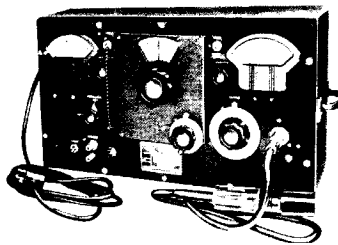
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# Signal Generating Equipment

## GR-804 · LX RF SIGNAL GENERATOR EQUIPMENT

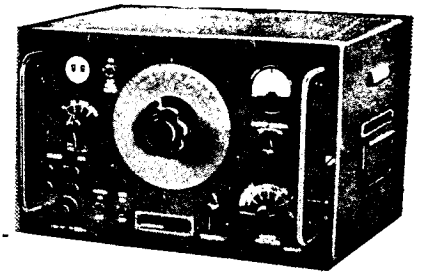
LX IS FEDERAL  
MFG. CO. VERSION  
OF GENERAL RADIO  
MODEL 804



**FUNCTIONAL DESCRIPTION:** UHF Signal Generator Equipment GR-804 and LX are portable units used in testing, aligning, and servicing radio receiving equipment. It consists of an rf oscillator, modulator, and calibrated attenuator.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 35 w, 115 or 230 v, 40 to 60 cy, 1 phase ac - Frequency Range: 7.5 to 330 mc in five bands - Type of Emission: CW, MCW - Output Voltage Range: 1 to 10,000 uv (above 100 mc); 20,000 uv (below 100 mc) - External Modulation: 0 to 75%; 100 cy to 20 kc  $\pm$  3 db; 200 cy to 10 kc  $\pm$  1 db - Internal Modulation: 0 to 60%, 1,000 cy  
GR-804-LX Ex. Cond. Guaranteed \$ 149.50

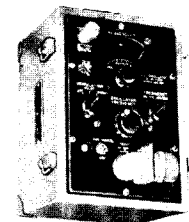
## TS-382/U AUDIO OSCILLATOR



**FUNCTIONAL DESCRIPTION:** Audio Oscillator TS-382 /U is a portable audio oscillator providing a sine wave output voltage over its frequency range. A vibrating reed frequency meter permits a check at two points. The equipment contains a thermostatically-controlled heater.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 115 to 120 v, 50 to 1,600 cy, 1 phase ac - Frequency Range: 20 to 200,000 cy  $\pm$  2% in four ranges - Frequency Meter Check Points: 60 cy, 400 cy  $\pm$  75% - Type of Emission: CW - Output Voltage: 1 uv to 10 v  $\pm$  3% in seven ranges. Temperature Range: -40°C to 55°C (operating); -40°C to 85°C (nonoperating) Humidity Range: 0 to 100% (rel) - Altitude Range: Sea level to 10,000 ft  
TS-382/U Ex. Cond. Guaranteed \$295.00

## TS-47/APR SIGNAL GENERATOR

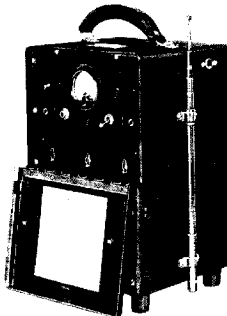


**FUNCTIONAL DESCRIPTION:** Test Oscillator TS-47/APR is a portable unit providing a calibrated, hf signal source used in checking and aligning radio receivers in the field.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 13.5 w, 80 v, 115 v, or 230 v, 50 to 2,600 cy ac; or 8.5 w, 200 v, .02 amp dc; 6.3 v, .55 amp dc - Frequency Range: 40 to 500 mc  $\pm$  1% in two bands (useful harmonics to 3,000 mc) - Type of Emission: AM, CW, pulse - Voltage Range: .387 v - Power Range: 3 mw - Impedance: 50 ohms - Modulation Data: Amplitude: 50% modulation at 1,000 cy - Pulse: 70 usec duration at repetition rate of 500 pps - Temperature Range: -14°F to +131°F  
TS-47/APR Ex. Cond. Guaranteed \$ 49.50

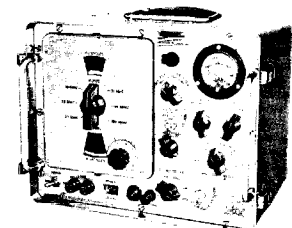
## BC-376 TEST OSCILATOR

**FUNCTIONAL DESCRIPTION:** Test Oscillator BC-376 is a portable equipment used with Test Indicator BE-67 in testing and adjusting marker beacon receivers and transmitters.



**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 1.5 v, 90 v dc - Frequency: 75 mc - Type of Reception: CW - Type of Emission: AM - Modulation Frequencies: 400 cy; 1,300 cy; 3,000 cy  $\pm$  2% - Effective Range: 10 to 20 ft - Field Strength: 900 uv/meter - Accuracy: 150 cy/deg C for carrier freq.  
BC-376 Ex. Cond. Guaranteed \$95.00

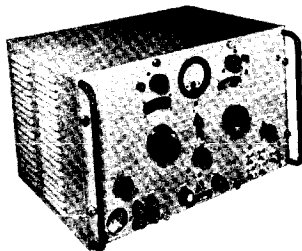
## AN/URM-25 RF SIGNAL GENERATOR SET



**FUNCTIONAL DESCRIPTION:** RF Signal Generator Set AN/URM-25 is a portable equipment used primarily in testing the sensitivity, selectivity, and audio response of receivers, in aligning their rf and if. stages, and in providing a usable signal when measuring receiver gain and power output

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 45 w, 115 v  $\pm$  10% 50 to 1,000 cy, 1 phase ac - Frequency Range: 10 to 50,000 kc in eight bands - Type of Emission: AM, CW - Modulation: Amplitude Range: 0 to 80%,  $\pm$  10% - Internal: 400 or 1,000 cy,  $\pm$  5% - External: 100 or 15,000 cy - Voltage Output: .1 uv to .1 v,  $\pm$  10%; 1 v across 500-ohm load; 2 v across high impedance - Output Impedance: 53.5, 500 ohms  
AN/URM-25 Ex. Cond. Guaranteed \$395.00

## TS-419/U SIGNAL GENERATOR



This compact portable Signal Generator is a self-contained, directly calibrated generator of continuous-wave or pulse modulated radio frequency signals. It is a reliable source of accurate signals for testing radio and radar equipment in the frequency band from 900 to 2100 MC/S (single dial control directly calibrated to  $\pm$  1%).

### SPECIFICATIONS:

Frequency Range: 900 to 2100 mc in one band.  
Power Output: Zero dbm to -120 dbm continuously adjustable to .2 UV into 50 ohms  
Output Impedance: 50 ohms with VSWR of 2:1.  
Power Requirement: 115 V - 10%, 50 to 1600 cycles, single phase, 200 watts.  
Type of Emission: CW, PM

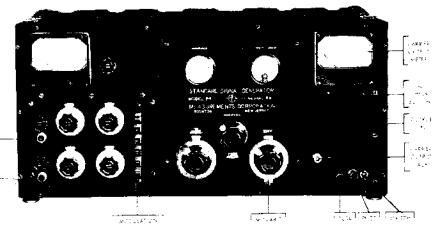
TS-419/U Ex. Cond. Guaranteed \$ 495.00

## MODEL 84 MEASUREMENTS CORPORATION

### UHF SIGNAL GENERATOR

#### FUNCTIONAL DESCRIPTION

Signal Generator model 84 is a UHF testing equipment with a pulse modulator that may be synchronized with, or used in synchronizing, an external source.



**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 230w, 115v, 60 cy, 1 phase ac  
Frequency Range: 300 to 1,000 mc  $\pm$  5%  
Voltage Range: .1 to 100,000 uv  $\pm$  10%

Impedance: 50-ohms  
Amplitude Modulation: 400 cy; 1000 cy; 2,500 cy at 0 to 30%  
Pulse Modulation: 50 to 100,000 pps; 1 to 50 usec delay

MODEL 84 Ex. Cond. Guaranteed \$ 195.00

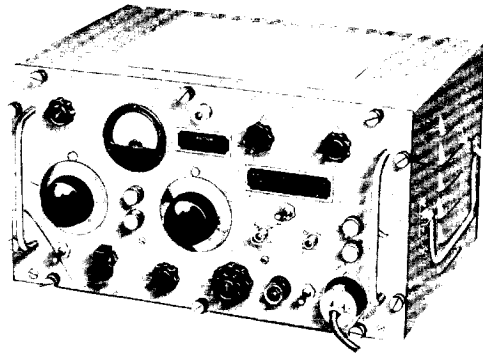
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# Signal Generating Equipment

## TS-155-C/U SIGNAL GENERATOR



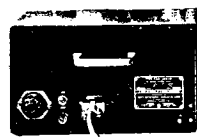
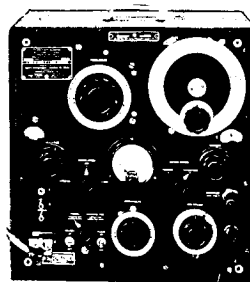
**FUNCTIONAL DESCRIPTION:** Signal Generator TS-155-C/U is a portable equipment used in field testing and in checking over-all system performance, receiver sensitivity, and power output of transmitters. It also supplies external trigger pulses to radar systems.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 100 w. 115V, 50-1600 cy, 1 phase - Frequency Range: 2700-3400 MC in 3 bands. Type Emission: pulse modulated - Power Range: 20 to 100 DBM. Output Trigger Repetition Rate: 80 to 2600 PPS - Output Trigger Amplitude: + 50 to + 100V - Pulse Width: .75 to 5.75 usec. - Pulse Delay: 5 to 1,800 usec.

TS-155-C/U

Like New Guaranteed \$ 149.50

## LP RF STANDARD SIGNAL GENERATOR EQUIPMENT

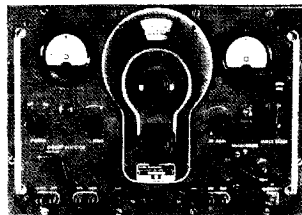


*SIMILAR TO  
GENERAL  
RADIO 605-B*

**FUNCTIONAL DESCRIPTION:** RF Standard Signal Generator Equipment LP generates modulated or unmodulated rf signals.

**ELECTROMECHANICAL DESCRIPTION:**  
Power Requirements: 42 W, 115v, 60 cy ac - Frequency Range: 9.5 to 30,000 kc  $\pm 1\%$  in seven bands; 30 to 50 mc  $\pm 3\%$  (extended range)  
Output Impedance: 10 ohms, 50 ohms(generator); 90 ohms (end of cable)  
Modulation: Amplitude: 4 v for 30% mod External: 0 to 1,000 cy (over entire range) Input Impedance: 4,000 ohms Internal: 1,000 cy, 0 to 50% - Power Output: 1 v, .5 uv to .1 v  $\pm 10\%$  (max)  
LP Ex.Cond. Guaranteed \$ 195.00

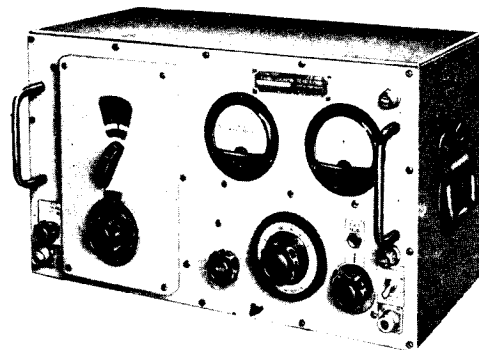
## TS-413/U SIGNAL GENERATOR



**FUNCTIONAL DESCRIPTION:** Signal Generator TS-413/U is a portable unit used in testing and aligning radio receivers, transmitters, and other apparatus that require standard output voltages and frequencies.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 115 v  $\pm 10\%$ , 50 to 1,600 cy, 1 phase ac - Frequency Range: 75 kc to 40 mc in six bands - Type of Emission: AM, CW - Voltage Range: 0 to 1 v rf; 0 to 1v audio at .400 or 1,000 cy - Impedance: 5 to 1,000 ohms (varies with freq) - Accuracy:  $\pm 10\%$   
TS-413/U Ex.Cond. Guaranteed P.U.R.

## TS-497/URR SIGNAL GENERATOR



*RUGGED  
MILITARY  
VERSION OF  
MEASUREMENTS  
CORP.  
MODEL 80*

**FUNCTIONAL DESCRIPTION:** Signal Generator TS-497/URR is a portable amplitude-modulated unit for laboratory and field use in testing radio and video equipment.

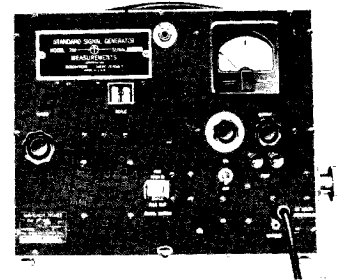
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 65 w, 110 v  $\pm 10\%$ , 50 to 1,600 cy, 1 phase ac - Frequency Range: 2 to 400 mc in six bands - Type of Emission: AM, pulse - Modulation: External Pulse: 150 v (min, output); 1,000 ohms (max, impedance) Frequency: 50 to 10,000 cy (ext); 400 to 1,000 cy (int) Percent: 0 to 30 for sine waves. - Output Impedance: 50 ohms - Attenuator Leakage: Less than .1 uv - Stray Field: Less than .2 uv Accuracy:  $\pm .5\%$  of indicated freq.

TS-497/URR Or Model-80

Ex.Cond. Guaranteed \$ 450.00

## TS-343/U SIGNAL GENERATOR

*SIMILAR TO  
MEASUREMENTS  
CORP. MODEL 78F*

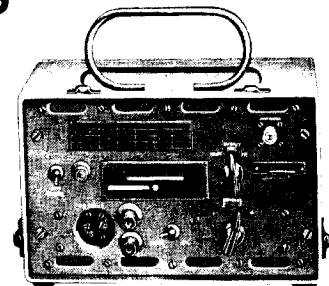


**FUNCTIONAL DESCRIPTION:** Signal Generator TS-343/U is used in aligning rf and if. stages of radio receivers, as well as in testing operations requiring CW or amplitude-modulated rf voltages.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 115 to 120 v, 25 to 60 cy ac - Frequency Range: 15 to 50 mc in two bands - Voltage Range: 0 to 100,000 uv - Impedance: 17 ohms - Modulation: 400 to 8,200 cy at 30%  
TS-343/U Ex.Cond. Guaranteed \$ 89.50

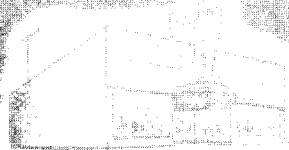
AVAILABLE IN OTHER FREQUENCIES (WRITE FOR PRICE)

## TS-251/UP TEST SET



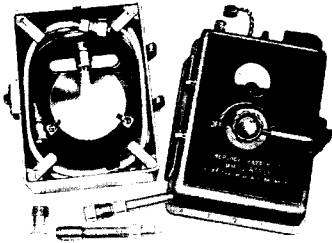
**FUNCTIONAL DESCRIPTION:** Test Set TS-251/UP is a portable signal generator used in preflight and shipboard checking of long range Loran receivers.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 22 w, 80, 115, or 230 v, 50 to 1,600 cy, 1 phase ac - Frequency Range: 1,700 to 2,010 kc - Type of Emission: Pulse.  
TS-251/UP Ex.Cond. Guaranteed \$ 69.50



COLUMBIA Electronic Sales

## TS-125/AP R.F. POWER METER

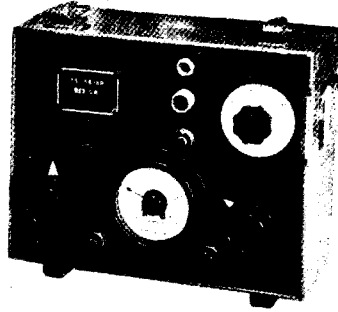


**FUNCTIONAL DESCRIPTION:** Power Meter TS-125/AP is a compact, lightweight, battery-operated, UHF wattmeter used in checking the relative power output or radar transmitters. It may also be employed in measuring antenna radiation patterns and standing wave ratios.

This equipment consists of a temperature-compensated thermistor bridge, a milliwattmeter, and a horn-type pickup antenna.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 4.5 v dc-Frequency Range: 2,400 to 3,335 mc-Type of Emission: CW, pulse-Power Range: 0 to 2 mw, 0 to 4 w (with attenuators); above 4 w (with pickup ant.) Temperature Range: -20°C to +60°C Accuracy: ±.5 db  
TS-125/AP Ex.Cond. Guaranteed \$95.00

## TS-36/AP R.F. POWER METERS

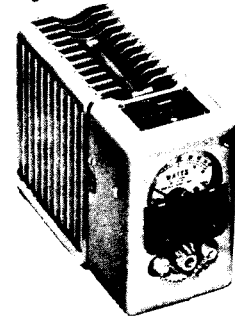


**FUNCTIONAL DESCRIPTION:** Power Meter TS-36/AP is a portable test equipment used in measuring CW or pulse modulated power output of radio or radar transmitters. The unit consists of a power measuring head, an rf attenuator, and a dc thermistor bridge circuit.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 1.5 v, 28 v, .22 amp dc Frequency Range: 8,700 to 9,500 mc-Power Range: .1 to 1,000 mw (avg)-Temperature Range: -40°C to +50°C-Accuracy: ±1 db from .1 to 1 mw; ±1.5 db from 1 to 1,000 mw

TS-36/AP Ex.Cond. Guaranteed \$25.00

## ME-11/U R.F. WATTMETER



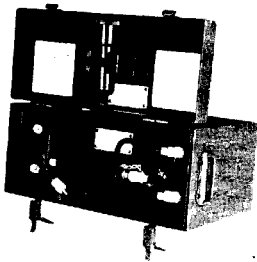
**FUNCTIONAL DESCRIPTION:** Wattmeter ME-11/U is an rf absorption-type equipment used in measuring power output and loss in transmission lines, and in-tuning transmitters. It may also be employed as a dummy load, a modulation monitor, and an rf resistance.

**ELECTROMECHANICAL DESCRIPTION:** Frequency Range: 100 to 500 mc (wattmeter); Type of Reception: AM, CW, FM, TV Power Range: 0 to 60 w in two ranges Impedance: 51.5 ohms Accuracy: ±5% of full scale, between 100 and 500 mc

ME-11/U Brand New Production... \$175.00  
ME-11/U Surplus, Ex.Cond. Guaranteed 100.00

# •• SPECIAL PURPOSE TEST SETS ••

## TS-10/APN TEST SET



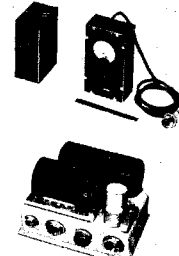
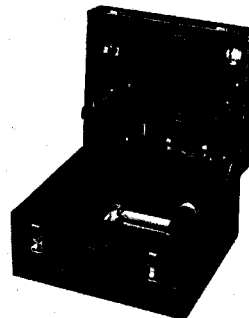
**FOR SERVICING  
RCA AVQ-9  
& SCR-718  
ELECTRONIC  
AIRBORNE  
ALTIMETERS  
\$49.50**

Ex.Cond. Guaranteed

**FUNCTIONAL DESCRIPTION:** Test Set TS-10/APN is a range calibrator used in testing altimeter equipments. -

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 1.5 v dc - Frequency Range: 410 to 470 mc - Input Impedance: 50 ohms - Attenuator Range: 30 to 100 db ±1 db - Delay Period: Corresponds to alt of 65, 297, or 350 ft.

## AN/ARM-1 RADIO TEST SET



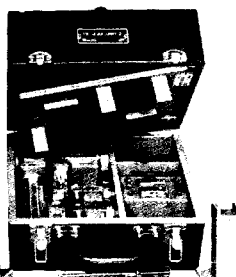
**FOR  
AN/ARC 3  
TESTING  
AND  
SERVICING  
\$149.50**

Ex.Cond. Guaranteed

**FUNCTIONAL DESCRIPTION:** Radio Test Set AN/ARM-1 is special purpose test equipment used in the alignment, testing, and maintenance of radio sets. It is not intended to be operated during flight but may be transported by air or vehicle.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements 28 v±.5 v, 5.5 to 12 amp dc - Frequency Range: 100 to 156 mc

## TS-12/AP STANDING WAVE INDICATOR



**FUNCTIONAL DESCRIPTION:** Standing Wave Indicator TS-12/AP is a portable unit used in measuring the standing wave ratio of radar plumbing, TR and RT boxes, crystal mixers, and antennas. In conjunction with a source of pulsed rf power, it may be applied in bench testing of radar sets.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 35 w, 115 v, 60 to 800 cy, 1 phase ac - Frequency Range: 9,305 to 9,445 mc Pulse Rate Frequency: 400 to 3,500 cy - Sensitivity: 15 uv (min) Temperature Range: 0°F to 120° F - Accuracy: ± 3%

TS-12/AP

Ex.Cond. Guaranteed \$ 95.00

# COLUMBIA Electronic Sales, INC.

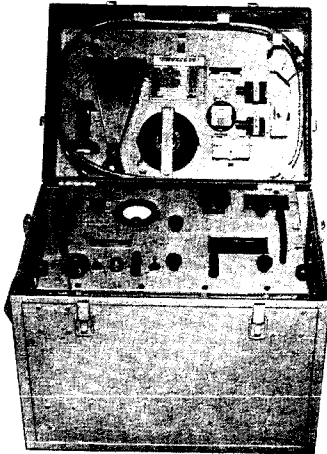
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## AN/UPM-11 RANGE CALIBRATOR



**FUNCTIONAL DESCRIPTION:** Range Calibrator Set AN/UPM-11 is a portable test equipment used in collimating the radar antenna and in accurately calibrating the radar range.

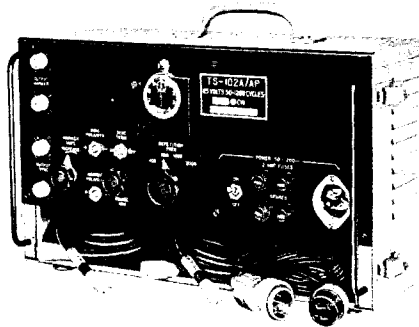
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 150 w, 115 v, 60 to 1,600 cy 1 phase ac - Frequency Range: 8,600 to 9,500 mc - Delay: 300 yd (MX-1302/UPM-11); 400 yd (MX-1300/UPM-11); 1,500 yd (MX-1301/UPM-11) - Temperature Range: -40°C to +55°C (operating); -65°C to +85°C (nonoperating) - Relative Humidity: 95% (max) - Accuracy: ± 5 yd.

AN/UPM-11 Ex.Cond. Guaranteed \$595.00

WRITE FOR QUOTATION

Calibrator ..... TS-142A/APG  
Range Calibrator ..... TS-293/CPA-5  
Range Calibrator ..... TS-573/UP  
Stroboscope ..... 60175  
Stroboscope ..... TS-805/U  
Electronic Tachometer .. TS-806/U  
Frequency Meter ..... FR-67/U

## TS-102/AP RANGE CALIBRATOR

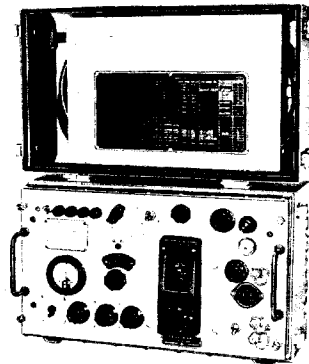


**FUNCTIONAL DESCRIPTION:** Range Calibrator TS-102/AP is a portable pulse generator that produces a marker pulse and a synchronizing pulse used in calibrating range units of radar receivers.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 65 w, 110 to 120 v, .6 amp, 50 to 1,200 cy, 1 phase ac - Marker Output Pulse: Amplitude: 0 to ±30 v - Repetition Frequency: 327,800 pps Synchronous Output Pulse: Amplitude: 30 to 50 v into 72 ohms Duration: .8 usec Temperature Range: -4°C to 120°C Repetition Frequency: 400 pps; 800 pps; 1,600 pps; or 2,000 pps.

TS-102/AP Ex.Cond. Guaranteed \$25.00

## TS-147/UP TEST SET



**FUNCTIONAL DESCRIPTION:** Test Set TS-147/UP is a portable unit used in testing and adjusting beacon equipment and radar systems. It provides FM or CW signals of known power level and frequency for radar receiver testing. The equipment measures frequency, power, spectrum width, frequency fluctuation, TR recovery time, and standing wave ratio of rf signals. The test set permits external modulation to produce a pulsed rf signal.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 125 w, 115 v ±10 v, 50 to 1,600 cy, 1 phase ac - Frequency Meter: Frequency Range: 8,470 to 9,630 mc ±2.5 mc RF Power Range: +7 to +30 dbm 1.5 db - Wattmeter: Power Range: +7 to +30 dbm (input); -7 to -45 dbm (output) Accuracy: ±1.5 - Sawtooth Sweep: Amplitude: 0 to 100 v DC Delv: 60 to -210 v Slope: 0 to +2 v/usec Trigger Amplifier Voltage Gain: 500 (approx) - Signal Generator: Frequency Range: 8,500 to 9,600 mc Phase Range: 3 to 50 usec Power Output: 7 to -85 dbm ±1.5 db Sweep Frequency: 0 to 40 mc Type of Emission: CW, FM

TS-147/UP Ex.Cond. Guaranteed \$295.00

## TS-3/AP TEST SET

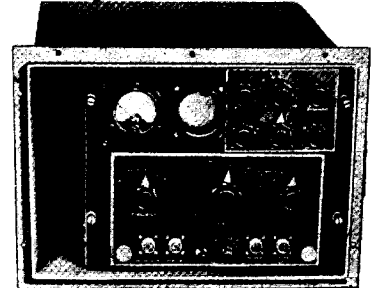


**FUNCTIONAL DESCRIPTION:** Test Set TS-3/AP is a portable instrument used in measuring converter crystal current of certain radar systems, as well as power and frequency of radar transmitters, of beat-frequency oscillators in radar receivers, and of test signal generators. With an external signal generator and a separate if. amplifier, it may be used in measuring the sensitivity of radar receivers.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 4.5 v dc - Frequency Range: 2,400 to 3,400 mc - Power Range: .5 to 12.5 mw - Impedance: 50 to 72 ohms - Current Range: 0 to 2 ma - Temperature Range: -40°C to +50°C Accuracy: ±.5 mc; ±.75 db.

TS-3/AP Ex.Cond. Guaranteed \$39.95

## TS-182/UP TEST SET



**FUNCTIONAL DESCRIPTION:** TS-182/UP is used in checking the sensitivity of receivers or the power output of transmitters that receive and transmit pulse-modulated signals. The built-in oscilloscope shows pulse shapes of short rf and video pulses. Consists of a signal generator, power meter, and synchroscope.

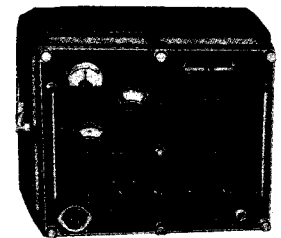
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 75 w, 115v±5%, 50 to 1,200 cy ac Signal Generator: Frequency Range: 150 to 240 mc - Power Range: 30 to 110 db below 1 v Impedance: 50 ohms - Pulse Delay: 20 usec Accuracy: ± 35% Oscilloscope: Frequency Response: 50 to 500,000 cy - Impedance: 75 ohms - Sweep Duration: 20 to 200 usec - Sweep Repetition Rate: 300 pps Synchronizing Pulse Amplitude: 7.5 v (peak) Synchronizing Pulse Delay: 0 to 20 usec Power Measurements: Power Range: 3,000 w Impedance: 50 ohms - Accuracy: 35% Sensitivity Measurements: Power Range: 30 to 110 db below 1 v - Receiver Video Output: 1 v (min) ± Accuracy: 2 db

TS-182/UP Ex.Cond. Guaranteed \$29.50

WRITE FOR QUOTATION

Range Calibrator Set .... AN/UPM-11  
Range Calibrator ..... I-223  
Range Calibrator ..... I-233  
Calibrator ..... I-240  
Test Set ..... TS-10B/APN  
Test Set ..... TS-59/APN-1  
Range Calibrator ..... TS-102A/AP  
Range Calibrator ..... TS-126/AP

## TS-146/UP TEST SET



**FUNCTIONAL DESCRIPTION:** Test Set TS-146/UP is an FM field unit used in measuring the power output and frequency of radar transmitters, as well as the sensitivity of radar receivers. In conjunction with an oscilloscope, this equipment is used in tuning receivers and TR boxes, measuring transmitter spectrum width and receiver bandwidth, determining TR box recovery time, checking magnetron pulling and afc circuits, and tuning radar local oscillators.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 60 w, 109 to 121 v, 50 to 1,200 cy ac Frequency Range: 9,285 to 9,465 mc ±2 mc - Power Range: 1 w (avg); 8 to 500 w (peak) Impedance: 50 ohms - Accuracy: ± 2 db (pwr)

TS-146/UP Ex.Cond. Guaranteed \$95.00

All Test Equipment Laboratory Certified and Guaranteed.



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# Radar Echo Boxes

## TS-62/AP TEST SET

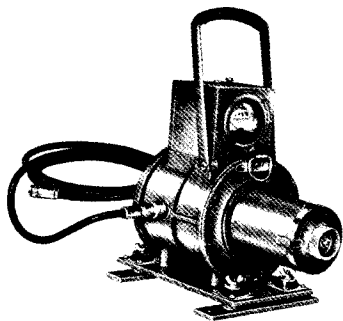


**FUNCTIONAL DESCRIPTION:** Test Set TS-62/AP is a portable, manually tuned, high-Q resonant cavity used in rapid routine analysis of the overall performance of radar systems. It determines the frequency of CW, MCW, or pulsed rf transmitters, measures relative power output, detects double moding of magnetrons, and indicates receiver signal-to-noise ratio.

**ELECTROMECHANICAL DESCRIPTION:** Frequency Range: 9,320 to 9,420 mc  $\pm$  3mc. Type of Reception: CW, MCW, pulse. Input Impedance: 50 ohms. Decay: 3 db/usec. Operating "Q": 50,000 to 80,000. Ring Time: 2.5 statute mi. temperature Range: -40°F to +120°F. Accuracy:  $\pm$  3db (relative pwr)

TS-62/AP Ex. Cond. Guaranteed \$34.50

## TS-270/UP ECHO BOX



**FUNCTIONAL DESCRIPTION:** Echo Box TS-270/UP is a portable, hand-tuned ringing cavity enabling quick, rough analyses of the overall performance of radar systems. It checks the frequency of radar transmitters and receiver local oscillators, performs spectrum analysis, makes rough relative power measurements, and checks TR recovery time.

**ELECTROMECHANICAL DESCRIPTION:** Frequency Range: 2,630 to 2,970 mc - Voltage Standing Wave Ratio: 1:10 - Impedance: 50 ohms - Q: 47,000 - Temperature Range: -40°F to +140°F.

TS-270/UP Ex. Cond. Guaranteed \$ 95.00

## OBU ECHO BOX

Same Photo As Above

### FUNCTIONAL DESCRIPTION:

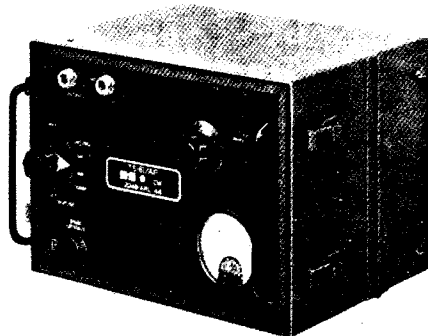
Radar Test Equipment OBU-3 is a portable echo box used in testing and adjusting radar equipment. The set is designed for frequency and relative power measurements, as well as for making rough spectrum analyses.

### ELECTROMECHANICAL DESCRIPTION:

Frequency Range: 2,900 to 3,100 mc  
Sensitivity: 90 yd/db  
Loaded Q: 47,000 (approx)  
Temperature Range: -40°C ( $\pm$ 13.7% change in ring time) to +60°C (-6.7% change in ring time)

OBU: Ex. Cond. Guaranteed \$ 49.50

## TS-61/AP TEST SET

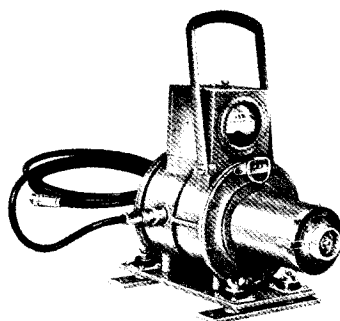


**FUNCTIONAL DESCRIPTION:** Test Set TS-61/AP is a portable, manually tuned echo box used in making rapid, rough analysis of overall performance of various radar equipment operating in the "Sa" band. It can also be employed in determining the frequency of CW, MCW, or pulsed rf transmitters, in indicating relative transmitter power output, spectrum and pulse length, in detecting double moding of magnetrons, and in checking indirectly the signal-to-noise ratio of receivers.

**ELECTROMECHANICAL DESCRIPTION:** Frequency Range: 3,140 to 3,360 mc  $\pm$  10 mc. Type of Reception: CW, MCW, pulse. Input Impedance: 50 ohms. Decay: 2.3 db/usec. Operating "Q": 35,000. System Performance:  $\pm$  2 db. Temperature Range: -40°C to +48°C. Accuracy:  $\pm$  3 db (relative pwr)

TS-61/AP Ex. Cond. Guaranteed \$34.50

## TS-545/UP ECHO BOX



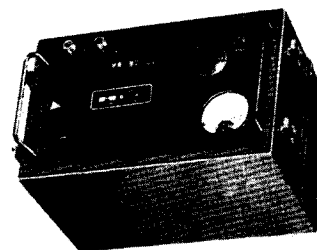
**FUNCTIONAL DESCRIPTION:** The TS-545/UP is a portable, general purpose, and self-contained hand-tuned microwave coaxial type echo box or resonant cavity. It will indicate relative power output of the radar transmitter, the frequency and general effectiveness of the radar system. Resonance is indicated by meter deflections, and a calibration chart is used to translate dial readings into frequency values. A visual indication of system performance appears on the radar screen.

### ELECTROMECHANICAL DESCRIPTION:

Power Supply: None required.  
Frequency Range: 1150 to 1350 megacycles per second.  
Type of Reception and Transmission: Pulse.  
Decay: 3.5 decibels per microsecond.  
Sensitivity: 1 decibel power loss for 50 yards ring-time.  
Temperature: Coefficient: -0.105% ring-time per degrees F. at 68°F.  
Accuracy 5 megacycles per second of indicated frequency.  
Temperature Range: -65. 2°F. to 140°F.

TS-545/UP Ex. Cond. Guaranteed \$ 49.50

## TS-110/AP TEST SET

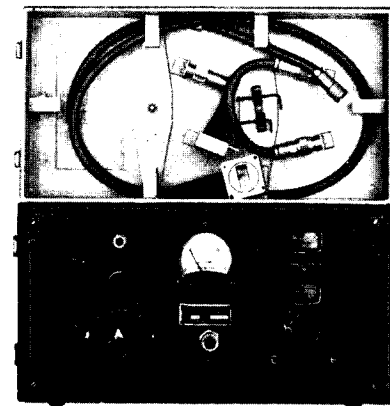


**FUNCTIONAL DESCRIPTION:** Test Set TS-110/AP is a portable, ringing-cavity resonator used in checking overall performance of airborne radar systems. Specifically it measures the power output of radar transmitters, makes rough spectrum analysis, checks the power level and frequency of radar-receiver local oscillators, determines the frequency of CW, MCW, or pulsed rf transmitters, detects multiple moding of magnetrons, checks the speed of recovery of radar TR boxes and receivers, and indicates receiver signal-to-noise ratio.

**ELECTROMECHANICAL DESCRIPTION:** Frequency Range: 2,400 to 2,700 mc  $\pm$  3 mc. Type of Reception: CW, MCW, pulse. Impedance: 50 ohms. Decay: 2.3 db/usec (approx). Operating "Q": 40,000. Ring Time: 2.5 statute mi. Temperature Range: 40°C to +48.8°C

TS-110/AP Ex. Cond. Guaranteed \$34.50

## TS-488/UP ECHO BOX



**FUNCTIONAL DESCRIPTION:** Echo Box TS-488/UP is a portable unit used in determining the overall performance of X-band radar sets. The unit also may be used in comparative measuring of the average power output of radar transmitters, detecting faults in radar systems, and determining the frequency spectrum of radar transmitters. The unit consists of a Pick-up antenna dipole, a tunable resonant cavity, a coupling loop, a crystal rectifier, and a dc microammeter.

**ELECTROMECHANICAL DESCRIPTION:** Frequency Range: 8,990 to 9,610 mc  $\pm$  5 mc - Decay Rate: 3.5 mc - Ringtime: 24.5 usec.

TS-488/UP Ex. Cond. Guaranteed \$ 49.50

All Test Equipment Laboratory Certified and Guaranteed.

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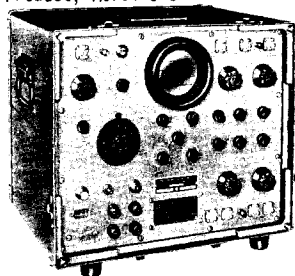
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# Wave Form Measuring Equipment

## AN/USM-24 OSCILLOSCOPE

Waterman Product, Model S-5



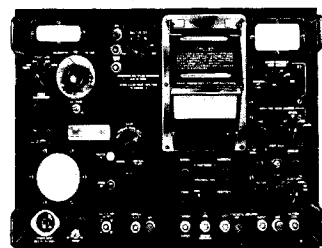
**FUNCTIONAL DESCRIPTION:** Oscilloscope AN/USM-24 is a portable, field-type synchroscope used in bench-testing of radar and communication equipment. It displays time variation of a voltage pulse or wave with self-contained means for measuring its duration, displacements, and instantaneous magnitude.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 220 w, 100 to 130 v, 50 to 1,000 cy, 1 phase ac - Frequency Range: 8 cy to 600 kc for recurrent sweep - input impedance: 5.6 meg paralleled by 25 uuf (hor); 300,000 ohms paralleled by 37 uuf (vert); 56,000 ohms paralleled by 25 uuf (beam modulation) - Deflection Sensitivity: 4 v rms/in. (hor); .035 v rms/in. (vert) - Delayed Sweep Time Expansion Scale: 10:1 - Frequency Response: .5 cy to 700 kc (hor); 4 cy to 10 mc (vert); 50 cy to 10 mc (beam modulation) - Sweep Time: .5 to 50,000 usec/in. (continuously adjustable).

AN/USM-24 Ex.Cond. Guaranteed \$ 295.00

## TS-239/UP OSCILLOSCOPE

Lavoie Lab. LA-239-A



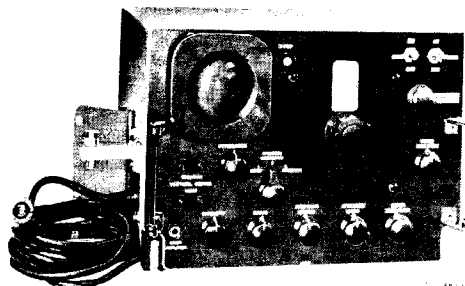
**FUNCTIONAL DESCRIPTION:** Oscilloscope TS-239/UP is a portable measuring instrument used in testing all types of electronic equipment in radar and communication fields. A luminous plot of the time-variation of a voltage pulse or wave, from 10 cycles to 5 megacycles, indicates the duration and instantaneous magnitude of the impulse.

The equipment consists essentially of a calibrating voltage generator, a timing marker generator, and a trigger generator.

**ELECTROMECHANICAL DESCRIPTION:**  
 Power Requirements: 220 w, 105 to 125 v, 50 to 1,600 cy ac  
 Frequency Range: 1 cy to 3 mc  
 Calibrating Voltage: Vertical Y: 1 to 1 v. (peak-to-peak)  
 Direct Vertical Plate Connection:  
 Input: 450 v (peak)  
 Input Impedance: 2.2 meg through .1 uf  
 Sensitivity: 110 v/in. deflection  
 Horizontal X Axis Amplifier:  
 Input: 450 v (peak)  
 Input Impedance: .5 meg  
 Response: 10 to 10,000 cy  
 Sensitivity: 8 to 200 v in. deflection  
 Intensity, Z Axis (Normally used for internal markers):  
 Input: .75 v (max)  
 Input Impedance: 1 meg through .01 uf  
 Square Wave Amplitude: 75 v (peak-to-peak)  
 Trip (Stop-start) X Axis:  
 Input Impedance: 1 meg in series w/ .05 uf  
 Output Trigger Amplifier: +150 v  
 Speed: .05 to 50,000 usec/in.  
 Synchronization:  
 External with probe: ±5 to ±400 v (peak)  
 External without probe: ±5 to ±150 v (peak)  
 Input Impedance:  
 Oscilloscope with probe: 3 meg shunted by 12 uf  
 Oscilloscope without probe: 3 meg shunted by 30 uf  
 Internal Trigger generator  
 Timing Markers (Synchronized with sweep): .2, 1, 10, 100, or 500 usec  
 Trigger Pulse Output:  
 Amplitude: ±25 v  
 Duration: 4 usec  
 Repetition Rate: 300, 800, 2,000, or 5,000 pps  
 Time Base:  
 Vertical Y Axis Amplifier:  
 Input Impedance:  
 Oscilloscope with probe: 3 meg shunted by 12 uf  
 Oscilloscope without probe: 3 meg shunted by 30 uf  
 Polarity: Pos or neg  
 Sensitivity for Standard Deflection:  
 Oscilloscope with probe: 1 to 450 v (peak)  
 Oscilloscope without probe: 1 to 100 v (peak)  
 Sine Wave Response: 10 cy to 5 mc  
 Square Pulse Duration: 2 to 5,000 usec  
 Transients, Observable Rise Time: .08 usec (max) 10% to 90% of full amplitude

TS-239/UP Ex.Cond. Guaranteed \$ 150.00

## TS-148/UP SPECTRUM ANALYZER

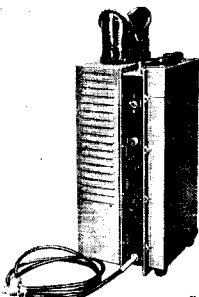


**FUNCTIONAL DESCRIPTION:** Spectrum Analyzer TS-148/UP is a portable unit used in testing the over-all system performance of radar systems. It checks the frequency of TR and RT boxes, signal generators, local oscillators, and magnetrons, and measures pulse width, rf spectrum width, and the Q of resonant cavities. Application is in depot testing.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 125 w, 105 to 125 v, 50 to 1,200 cy ac  
 Frequency Range: 8,470 to 9,630 mc ± 5 mc (input); 8,500 to 9,600 mc (nom) Intermediate Frequency: 22.5 mc (1st); 3 mc (2nd) IF Bandwidth: 50 kc Type of Reception: CW, pulse Type of Emission: CW, FM Power Range: +12 to +70 dbm (input); 1 mw (output) Attenuation: 3 to 7 db.

TS-148/UP Ex.Cond. Guaranteed \$ 450.00

## TS-34/AP OSCILLOSCOPE

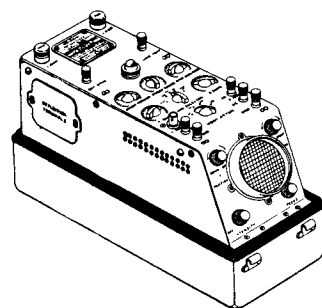


**FUNCTIONAL DESCRIPTION:** Oscilloscope TS-34/AP, having a 2-inch cathode ray tube, is a portable instrument used in observing electrical waves forms and in measuring their voltage power, and duration. Application is in testing and maintenance of radar and other electronic equipment.

**ELECTROMECHANICAL DESCRIPTION:**  
 Power Requirements: 90 w at 60 cy, 115 v - 10%, 50 to 1,200 cy ac  
 Pulses and Square Wave Observable:  
 Duration: 25 to 30,000 usec  
 Polarity: Pos or neg  
 Sine Wave Observable: 30 cy to 2.5 mc  
 Input Impedance:  
 Oscilloscope Alone, Low: 62 ohms  
 Oscilloscope Alone, High: 43 meg shunted by 30 uf  
 Oscilloscope with Probe: 4 meg shunted by 12 uf  
 Input Voltage:  
 Oscilloscope Alone, Low: 1 to 1 v  
 Oscilloscope Alone, High: 1 to 100 v  
 Oscilloscope With Probe: 1 to 450 v  
 Synchronization:  
 External, With Probe: 20 to 450 v  
 External, Without Probe: 2 to 100 v  
 Input Impedance: 4 meg shunted by 30 uf  
 Sweep Speeds:  
 Fast: 4.5 to 8 usec  
 Medium: 20 to 50 usec  
 Slow: 120 to 280 usec  
 Sautofast Duration:  
 Fast: 20 to 200 usec  
 Medium: 200 to 4,000 usec  
 Slow: 4,000 to 100,000 usec  
 Sautofast Frequency:  
 Fast: 5,000 to 50,000 cy  
 Medium: 250 to 5,000 cy  
 Slow: 10 to 250 cy  
 Attenuation Y Amplifier:  
 Input Attenuator: 0 to 20 db  
 Input Impedance Switch: 0, 20, or 40 db on high impedance position  
 Temperature Range: -40° F to +120° F  
 Relative Humidity: 95% (max)

TS-34/AP Ex.Cond. Guaranteed \$ 59.50

## OS-8/U OSCILLOSCOPE



**FUNCTIONAL DESCRIPTION:** Oscilloscope OS-8/U, having a 3-inch cathode ray tube, is a portable device used in the visual analysis of wave forms of varying electrical potential.

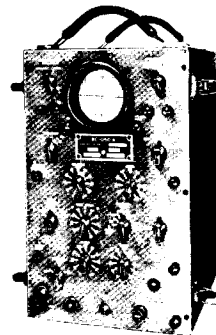
**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 60 w, 105 to 125 v, 50 to 1,000 cy, 1 phase ac.  
 Frequency Range: Horizontal Amplifiers: 0 to 500 kc Vertical Amplifiers: 0 to 2 mc. Sweep Circuit Oscillator: 3 cy to 50 kc. Input Impedance: 1.5 meg shunted by 25 uuf (ac); 2 meg (dc); 9 meg shunted by 11 uuf. Deflection Sensitivity: Horizontal: .075 rms v/in. (amp) 25 rms v/in. (direct). Vertical: .075 rms v/in. (amp); 17 rms v/in. (direct) Accuracy: ±3 db.

OS-8/U Ex.Cond. Guaranteed \$ 149.50

### OTHER WAVE FORM MEASURING EQUIPMENT.

Spectrum Analyzer Set..AN/UPM-17  
 Test Set, Radar..AN/UPM-33  
 Analyzer, Spectrum..AN/UPM-58  
 Sound Analyzer..TS-615/U

## BC-1060 OSCILLOSCOPE



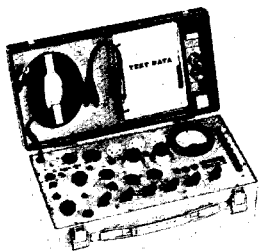
**FUNCTIONAL DESCRIPTION:** Oscilloscope BC-1060 having a 3-inch cathode ray tube, is a portable test equipment used in bench-testing of radar and communications systems.

**ELECTROMECHANICAL DESCRIPTION:**  
 Power Requirements: 150 w, 105 to 125 v, 3 amp, 50 to 1,600 cy ac  
 Frequency Range: 15 to 30,000 cy  
 Input Impedance:  
 X Axis: 2 meg and 30 uf (at terminals); 4.7 meg and 25 uf (direct to plates unbalanced);  
 Y Axis: Same as X Axis  
 Z Axis: .47 meg and 30 uf (int modulation)  
 Input Sensitivity:  
 X Axis: 9 v rms in.  
 Y Axis: 1 v rms in. deflection; 4 v rms in. (with probe)  
 Z Axis: 15 v peak brings beam from extinguished to brilliance  
 Direct to Deflection Plates: 75 v rms in. ±20%  
 Frequency Response: 10 cy to 100 kc (X Axis); 20 cy to 2 mc (Y Axis); 30 cy to 3 mc (Z Axis); uniform to 3 db  
 Input Potential: 400 v dc (max)  
 Sweep: Ext signal synchronizing sources of any polarity  
 Modulation: Provision for modulating electron beam by ext signals

BC-1060 Ex.Cond. Guaranteed \$ 59.50

**ALSO AVAILABLE :**  
**TEKTRONICS**  
**DUMONT**  
**AN/USM-25**  
**HEWLETT-PACKARD**  
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## TV-7/U TEST SET, ELECTRON TUBE

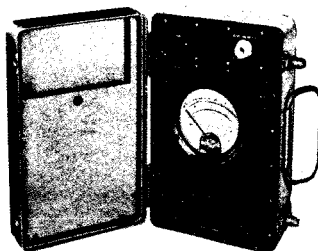


**FUNCTIONAL DESCRIPTION:** Electron Tube Test Set TV-7/U is a portable instrument used in measuring conductance, detecting and measuring internal shorts, checking emission, detecting gas and intermittent contacts of commercial and JAN type electron tubes, and testing pilot lamps having miniature bases. Application is in organizational and field testing and maintenance.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 55 w, 115 v  $\pm 10\%$ , 50 to 1,000 cy ac - Mutual-Conductance Range: 0 to 3,000; 6,000; 15,000; 30,000 umhos  $\pm 10\%$  - Filament Range: 1.1 v, 1.5 v, 2 v, 2.5 v, 3 v, 4.3 v, 5 v, 6.3 v, 7.5 v, 10 v, 12.6 v, 20 v, 25 v, 35 v, 50 v, 75 v, 117 v

TV-7/U Ex.Cond. Guaranteed \$ 150.00

## TS-352/U MULTIMETER

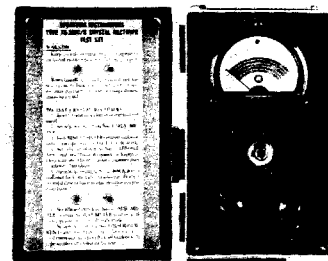


**FUNCTIONAL DESCRIPTION:** Multimeter TS-352/U is a portable multirange circuit-analysis and trouble-shooting instrument used on electrical and electronic equipment, giving accurate readings, on all ranges, under climatic extremes.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 15 v dc - Frequency Range: 25 to 5,000 cy - Voltage Range: 0 to 2.5; 10; 50; 250; 500; 1000 & 5000: ac, dc  $\pm 3\%$  - Current Range: 0 to 250 ua; 2.5; 10; 50; 100; 500 ma; 2.5, 10 amp dc - Resistance Range: 0 to 300; 30,000; 300,000 ohms; 3, 30 meg.

TS-352/U Ex.Cond. Guaranteed \$ 95.00

## TS-268/U CRYSTAL RECTIFIER TEST SET

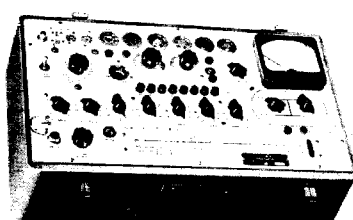


**FUNCTIONAL DESCRIPTION:** Crystal Rectifier Test Set TS-268/U is a portable equipment used in testing high-frequency rectifiers.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 1.5 v dc - Meter Range: 0 to 10,000 ohms; 0 to 1 ma dc - Type of Crystals Checked: IN21, IN21A, IN21B, IN23, IN23A, IN23B, IN25 - Temperature Range:  $-4^{\circ}\text{F}$  to  $+120^{\circ}\text{F}$  - Accuracy:  $\pm 10\%$  (approx)

TS-268/U Ex.Cond. Guaranteed \$ 29.50

## TV-3/U TUBE TESTER

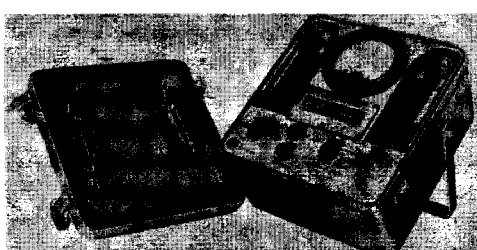


**FUNCTIONAL DESCRIPTION:** Tube Tester TV-3/U is a transconductance equipment used in testing receiving and lowpower transmitting tubes, in measuring capacity, resistance, current, and voltage.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 45 w, 115 v  $\pm 10\%$ , 50 to 1,000 cy, 1 phase ac - Voltage Range: 0 to 5; 10; 50; 100; 500; 1,000 v ac, dc  $\pm 5\%$  - Trans-conductance Range: 0 to 3,000; 6,000; 15,000; 30,000 umhos  $\pm 10\%$  - Current Range: 0 to 1, 5, 10, 50, 100, 500 ma - Capacitance Range: 0 to .02, .2, 2, 20 uf - Resistance Range: 0 to 1,000; 10,000; 100,000 ohms; 1, 10, 100 meg  $\pm 3\%$  - Sensitivity: 1,000 ohms/v ac; 20,000 ohms/v dc.

TV-3/U Ex.Cond. Guaranteed \$ 79.50

## TS-505/U ELECTRONIC MULTIMETER

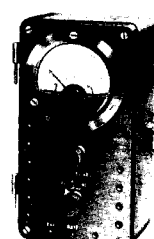


**FUNCTIONAL DESCRIPTION:** Electronic Multimeter TS-505/U is a portable, vacuum-tube voltmeter and dc ohmmeter used in measuring ac and dc voltage and resistance over wide ranges. The peak-indicating ac meter scale registers rms voltage, and a zero center scale measures dc voltage of unknown polarity. The set contains an ac rectifier probe and a dc probe.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 115 v  $\pm 15\%$ , 20 va, 50 to 1,600 cy ac; 3 v dc - Frequency Range: 30 cy to 500 mc - Voltage Range: 0 to 200 v rms in seven ranges (ac); 0 to 1,000 v in nine ranges (dc) - Resistance Range: 0 to 1,000 meg in seven ranges  $\pm 4\%$  - Input Impedance: 6 meg (min) shunted by 2 uuf at af; 50 meg on 1,000-v dc and  $\pm 500$ -v dc ranges; 20 meg on all other dc ranges - Indicating Meter: 1 ma dc (full-scale deflection) Accuracy:  $\pm 4\%$  (full scale dc v);  $\pm 6\%$  (full scale for ac sinusoidal input from 30 cy to 500 mc)

TS-505/U Ex.Cond. Guaranteed P.U.R.

## TS-297/U MULTIMETER



**FUNCTIONAL DESCRIPTION:** Multimeter TS-297/U is a portable test instrument used in the maintenance and repair of electronic equipment. It checks voltage, current, or resistance.

**ELECTROMECHANICAL DESCRIPTION:**

Power Requirements: 1.5 v dc Voltage Range: 0 to 4, 10, 40, 100, ma dc Current Range: 0 to 4, 40, 100, 400 ma dc Resistance Range: 0 to 1,000; 10,000 100,000 ohms Sensitivity: 1,000 ohms/v

TS-297/U Ex.Cond. Guaranteed \$ 24.50

## I-177 TUBE TESTER



**FUNCTIONAL DESCRIPTION:** Tube Tester I-177 is a portable instrument used in measuring conductance, in detecting gas, internal shorts, and intermittent contacts of tubes, in checking emission, and in testing pilot lamps having a miniature base.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 115 v,  $\pm 10\%$ , 5 amp, 60 cy, 1 phase ac - Mutual Conductance Range: 0 to 3,000; 6,000; 15,000 umhos - Filament Range: 1.1 to 117 v - Accuracy:  $\pm 7\%$  of scale reading.

I-177 Ex.Cond. Guaranteed \$ 29.95

## MX-949/U TUBE SOCKET ADAPTER KIT

**FUNCTIONAL DESCRIPTION:** Tube Socket Adapter Kit MX-949/U is a portable unit used with tube testing sets to accommodate latest type tubes. Used with Tube Tester I-177.

MX-949/U Ex.Cond. Guaranteed \$ 15.00

## TS-375/U VOLTMETER

**FUNCTIONAL DESCRIPTION:** Voltmeter TS-375/U is a high-impedance ac-dc instrument used in servicing and testing radio and radar equipment. It is intended particularly for voltage measurements where the sensitivity or frequency range of standard voltmeters is not adequate.

**ELECTROMECHANICAL DESCRIPTION:** Power Requirements: 28 w, 115v  $\pm 10\%$ , 50 to 1,600 cy ac. Frequency Range: 40 cy to 300 mc. Impedance: 5 meg. Voltage Range: 0 to 1.2, 3, 12, 30, 120 v ac, dc; 0 to 300 v dc. Temperature Range:  $40^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ . Accuracy:  $\pm 3\%$  to  $\pm 8\%$  (ac);  $\pm 3\%$  (dc).

TS-375/U Ex.Cond. Guaranteed \$ 75.00



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0A2	\$ .65	2J48	100.00	4-250-A	24.95	815	2.50	5663	1.00
0A3/VR-75	.80	2J49	60.00	4-400-A	24.95	816	2.00	5670	1.00
0A4-G	1.20	2J50	60.00	4-1000-A	75.00	826	4.50	5672	1.10
0B2	1.20	2J51	40.00	4E27	12.50	829-B	5.00	5678	1.00
0B3/VR-90	.75	2J54	75.00	4J21	135.00	830-B	5.50	5691	5.00
0C3/VR-105	.75	2J55	50.00	4J25	135.00	832-A	4.95	5692	3
0D3/VR-150	.75	2J56	60.00	4J52	100.00	833-A	37.50	5704	?
1B22	4.00	2J61	175.00	4X150-A	10.00	834	7.00	5718	1
1B24	7.50	2J62	50.00	4X250-B	22.50	835	15.00	5725	1.40
1B27	20.00	2K22	25.00	4CX250-B	27.50	836	2.50	5726	1.00
1B35	3.00	2K23	25.00	4CX300-A	27.50	837	1.50	5751	1.50
1B41	30.00	2K25	10.00	5C21	12.50	841	5.00	5763	1.50
1B58	50.00	2K26	27.50	5C22	16.50	843	1.25	5787	2.50
1B62	13.50	2K27	25.00	5C24	30.00	845	7.50	5814	1.25
2A4-G	2.50	2K28	25.00	5R4-GY	1.00	849	50.00	5840	2.50
2B22	14.00	2K29	30.00	10	.65	851	60.00	5879	1.20
2B23	23.50	2K30	115.00	28D7	1.00	852	7.50	5962	4.00
2B24	1.00	2K33-A	190.00	35T6	3.00	866-A	2.00	5963	1.00
2C26	1.00	2K34	90.00	75-TH	25.00	872-A	5.00	6005	1.50
2C39	5.00	2K39	125.00	100-TH	10.00	873	14.50	6050	1.75
2C39-A	5.95	2K41	95.00	203-A	4.50	874	1.50	6073	1.50
2C39-B	15.00	2K42	125.00	211	.75	876	1.50	6080	3.00
2C39-WA	12.50	2K43	125.00	250-R	9.50	921	2.00	6082	3.00
2C40	10.00	2K44	115.00	250-TH	20.00	931-A	4.00	6094	12.00
2C40-A	15.00	2K45	30.00	304-TH	27.50	954	.75	6116	35.00
2C41	26.00	2K46	195.00	304-TL	27.50	955	.75	6146	4.50
2C42	7.50	2K47	195.00	316-A	3.50	956	.75	6147	3.00
2C43	7.50	2K48	50.00	371-B	4.00	957	.75	6159	4.50
2C46	7.50	2K50	125.00	417-A	10.00	958-A	1.00	6201	1.40
2C51	2.50	2X2	.70	446-B	3.00	CK-1005	1.00	6211	1.00
2C52	2.50	3A4	.75	450-TL	40.00	CK-1006	5.00	6336	9.00
2C53	8.50	3A5	.75	576-A	15.00	CK-1007	1.00	6883	6.00
2D21	1.00	3B4	1.50	583	10.00	1612	1.50	7193	.50
2E24	3.00	3B22	4.00	701-A	10.00	1616	.10	8000	10.00
2E26	3.50	3B23	4.25	702-A	5.00	1624	2.00	8008	8.00
2E35	1.45	3B24	1.50	715-B	10.00	1625	.25	8012	4.00
2G21	3.00	3B24-W	5.00	717-A	1.50	1626	.75	8014-A	25
2J21	50.00	3E25	3.00	721-A	3.00	1629	.75	8025	
2J22	50.00	3B26	4.00	801-A	2.00	1630	1.50	9001	
2J27	50.00	3D28	3.00	802	4.50	1631	1.50	9002	1.00
2L28	75.00	3B29	5.00	803	5.00	1633	1.00	9003	1.75
2J30	75.00	3C22	40.00	805	5.00	2050	1.25	9004	1.75
2J31	75.00	3C23	5.00	807	1.00	2050-W	2.50	9005	2.00
2J32	75.00	3C24/24-G	5.00	808	1.00	2051	1.25	9006	1.00
2J34	75.00	3C27	6.00	810	15.00	5557/FG-17	7.00		
2J36	75.00	3C30	2.50	811	3.00	5642	1.30		
2J37	90.00	3C37	7.50	811-A	4.00	5643	4.00		
2J39	75.00	3D21	4.00	812-A	5.00	5647	4.50		
2J40	75.00	3E29	8.50	813	10.00	5651	1.00		
2J42	70.00	4-65-A	9.95	814	4.50	5654	1.25		
		4-125-A	19.95						

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1A3	12BA6	3Q4	6D6	
1A7-GT	12BH7	354	6ER5	
1C5-GT	12CA5	5Y3-GT	6F8-G	
1G4-GT	12C8	6AC7	6H6	
1LC5	12H6	6AG5	6F8-G	
1LD5	12Q7	6AJ5	6J4	
1LE3	12SC7	6AK5	6J6	
1P5-GT	12SH7	6AK6	6K7-GT	
1T4	12SJ7	6AL5	6SL7	
12AU6	12SL7	6AQ5	6SS7	

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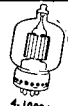
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3DP1	4.00
3DP7	5.00
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4X250-B	.....		22.50
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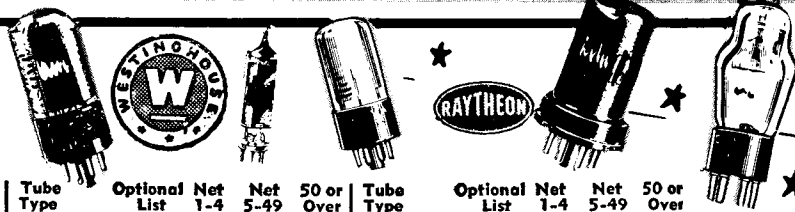
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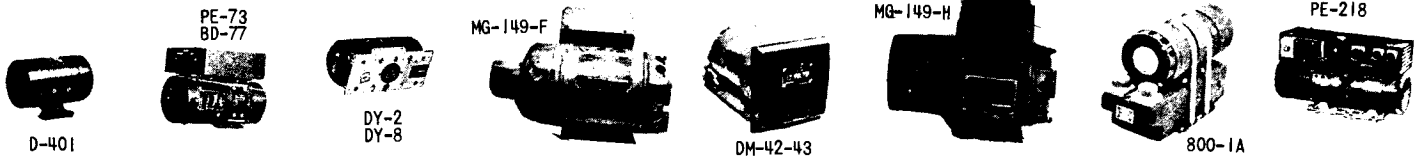
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Tube Type	Optional List	Net 1-4	Net 5-49	50 or Over	Tube Type	Optional List	Net 1-4	Net 5-49	50 or Over	Tube Type	Optional List	Net 1-4	Net 5-49	50 or Over	Tube Type	Optional List	Net 1-4	Net 5-49	50 or Over
OA2	\$2.05	\$1.46	\$1.24	\$1.24	6A57G	6.95	4.93	4.93	4.44	6EM5	3.05	1.70	1.49	1.35	12BH7A	3.05	1.70	1.49	1.35
OA3/VR75	2.20	1.54	1.30	1.30	6A58	3.35	1.87	1.64	1.48	6ER5	3.00	1.68	1.47	1.32	12BK5	3.80	2.12	1.86	1.68
OA4G	2.65	1.86	1.58	1.58	6AT6	1.90	1.06	0.93	0.84	6ES8	4.65	2.60	2.28	2.05	12BL6	2.30	1.28	1.13	1.01
OB2	2.05	1.44	1.22	1.22	6AT7A	3.20	1.79	1.57	1.48	6EW6	2.30	1.28	1.13	1.01	12BQ6GTB	4.45	2.49	2.18	1.96
OB3/VR90	2.45	1.65	1.40	1.40	6AU4GTA	3.35	1.87	1.64	1.48	6F5	3.40	1.90	1.67	1.50	12BR7	2.75	1.54	1.35	1.21
OC3/VR105	2.10	1.50	1.28	1.28	6AU5GT	4.30	2.40	2.11	1.90	6F6	4.00	2.23	1.96	1.76	12BV7	3.05	1.70	1.49	1.35
OD3/VR150	2.05	1.44	1.22	1.22	6AU6	2.10	1.17	1.03	.93	6F6G	2.60	1.40	1.23	1.10	12BY7A	3.05	1.70	1.49	1.35
OZ4	2.15	1.20	1.05	.95	6AU8	3.50	1.96	1.72	1.54	6FH5	2.80	1.56	1.37	1.23	12BZ7	3.05	1.70	1.49	1.35
OZ4G	2.35	1.31	1.15	1.04	6AV6	1.65	.92	.81	.73	6FV6	3.15	1.76	1.54	1.39	12CA5	2.35	1.31	1.15	1.04
1A7GT	3.70	2.07	1.81	1.63	6AW8A	3.55	1.98	1.74	1.57	6FV8	3.50	1.96	1.72	1.54	12CN5	2.45	1.37	1.20	1.08
1AX2	3.05	1.70	1.49	1.35	6AX4GT	2.65	1.48	1.30	1.17	6H6	3.10	1.73	1.52	1.37	12CR6	2.40	1.34	1.18	1.06
1B3GT/1G3GT	2.90	1.62	1.42	1.28	6AX5GT	2.95	1.65	1.45	1.30	6J5	2.70	1.51	1.32	1.19	12CU5	2.35	1.31	1.15	1.04
1DN5	2.20	1.23	1.08	.97	6AZ8	4.20	2.35	2.06	1.85	6J5GT	2.80	1.56	1.37	1.23	12CU6	4.45	2.49	2.18	1.96
1K3/1J3	2.90	1.62	1.42	1.28	6BA6	2.00	1.12	.98	.88	6K7	4.55	2.54	2.23	2.01	12CX6	2.50	1.40	1.23	1.10
1L6	3.50	1.96	1.72	1.54	6BA7	3.70	2.07	1.81	1.63	6K7GT	2.35	1.31	1.15	1.04	12D4	2.75	1.54	1.35	1.21
1N5GT	3.65	2.04	1.79	1.61	6BA8A	3.55	1.98	1.74	1.57	6K7	4.35	2.43	2.13	1.92	12DB5	2.75	1.54	1.35	1.21
1R5	2.55	1.42	1.25	1.12	6BC4	4.90	2.74	2.40	2.16	6L6	6.35	3.55	3.11	2.80	12DO6A	4.20	2.35	2.06	1.85
1S5	2.55	1.42	1.25	1.12	6BC5	2.30	1.28	1.13	1.01	6L6GC	3.80	2.12	1.86	1.68	12D57	3.40	1.90	1.67	1.50
1T4	2.40	1.34	1.18	1.06	6BC7	3.80	2.12	1.86	1.68	6L7	5.00	2.79	2.45	2.21	12DT7	3.70	2.09	1.84	1.65
1U4	2.35	1.31	1.15	1.04	6BC8	4.00	2.23	1.96	1.76	6N7	4.55	2.54	2.23	2.01	12DU7	3.35	1.87	1.64	1.48
1U5	2.05	1.15	1.00	.90	6BD6	2.30	1.28	1.13	1.01	6Q7	3.70	2.07	1.81	1.63	12DV8	3.55	1.98	1.74	1.57
1V2	2.00	1.12	.98	.88	6BE6	2.20	1.23	1.08	.97	6S4A	2.05	1.15	1.00	.90	12DZ6	2.50	1.40	1.23	1.10
1X2B	3.05	1.70	1.49	1.35	6BF5	3.55	1.98	1.74	1.57	6S8GT	2.75	1.54	1.35	1.21	12ED5	2.50	1.40	1.23	1.10
2A3	6.95	3.88	3.41	3.06	6BF6	1.80	1.01	.88	.79	6SA7	3.90	2.18	1.91	1.72	12EG6	2.30	1.28	1.13	1.01
2AF4A	4.05	2.26	1.98	1.79															

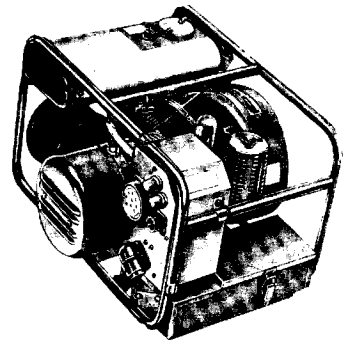
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# Sure Buys! TRY COLUMBIA · DYNAMOTORS & INVERTORS AND SAVE!



12 VOLT DYNAMOTORS	24 VOLT DYNAMOTORS	INVERTORS
<b>BD-77 DYNAMOTOR</b> Input: 14V. DC. @ 39 Amps Output: 1000V. DC. @ 350 MA Ex. Cond. <b>≈ 12.95</b> Ex. Cond.	<b>PE-73 DYNAMOTOR</b> Input: 28V. DC. @ 19 Amps Output: 1000V. DC. @ 350 MA Ex. Cond. <b>≈ 4.95</b>	<b>MG-149-F INVERTORS</b> Input: 28V. DC. @ 36 Amps Output: 115V. AC., 1 Phase, 400 CPS @ 500 VA., 26V. AC., 1 Phase, 400 CPS. @ 250 VA. Ex. Cond. <b>≈ 14.95</b>
<b>DM-42 DYNAMOTOR</b> Input: 12V. DC. @ 39 Amps Output: 515V. DC. @ 215 MA 1030V. DC. @ 260 MA Ex. Cond. <b>≈ 9.95</b>	<b>DM-43 DYNAMOTOR DY-96/VRC</b> Input: 24V. DC. @ 19 Amps Output: 515V. DC. @ 215 MA 1030V. DC. @ 260 MA Ex. Cond. <b>≈ 4.95</b>	<b>MG 149-H INVERTOR</b> Input: 28V. DC. @ 44 Amps Output: 115V. AC., 1 Phase, 400 CPS @ 500VA., 26V. AC., 1 Phase, 400 CPS @ 250VA. Ex. Cond. <b>≈ 24.95</b>
<b>DM-65 DYNAMOTOR</b> Input: 12.5V. DC. @ 28 Amps Output: 440V. DC. @ 400 MA Ex. Cond. Used <b>≈ 9.95</b>	<b>DM-37 DYNAMOTOR</b> Input: 25.5V. DC. @ 9.2 Amps Output: 625V. DC. @ 225 MA Ex. Cond. <b>≈ 4.95</b>	<b>PE-218 INVERTOR</b> Input: 28V. DC. @ 92A Output: 115V. AC., 1 Phase, 400 CPS @ 1500A Ex. Cond. <b>≈ 19.95</b>
<b>DM-35 DYNAMOTOR</b> Input: 12.5V. DC. @ 18.7 Amps Output: 625V. DC. @ 225 MA Brand New \$14.95 <b>≈ 7.95</b> Ex. Cond. Used	<b>DY-8/ARC-5 DYNAMOTOR-DM-33</b> Input: 28V. DC. @ 5 Amps Output: 575V. DC. @ 160 MA Ex. Cond. <b>≈ 3.95</b>	<b>800-1-A INVERTOR</b> Input: 24V. DC. @ 75 Amps Output: 115V. AC., 1 Phase, 800 CPS @ 10 Amps Ex. Cond. <b>≈ 9.95</b>
<b>TCS XMTR. DYNAMOTOR D-401</b> <b>NEW!</b> Input: 12V. DC. @ 9.9 Amps Output: 400V. DC. @ 200 MA New <b>≈ 4.95</b>	<b>DY-2/ARR2 DYNAMOTOR-DM-32</b> Input: 28V. DC. @ 1.1 Amps Output: 250V. DC @ 60 MA Ex. Cond. <b>≈ 1.95</b>	<h2>PE-95 10KW 120/240V. AC. POWER PLANT</h2>
<b>TCS RECEIVER DYNAMOTOR</b> Input: 12V. DC. @ 3.8A Output: 225V. DC. @ 100 MA NEW <b>≈ 3.95</b> NEW	<b>DM-36 DYNAMOTOR</b> Input: 28V. DC. @ 1.4 Amps Output: 220V. DC @ 80 MA Ex. Cond. <b>≈ 2.95</b>	
<b>DM-34 DYNAMOTOR</b> Input: 14V. DC. @ 2.8 Amps Output: 220V. DC. @ 80 MA New <b>≈ 3.95</b> NEW	<h2>POWER PLANTS</h2> <h3>PE-75 2500W AC POWER PLANT</h3>	
<b>DM-40 DYNAMOTOR</b> Input: 14V. DC. @ 3.4 Amps Output: 172V. DC. @ 138 MA NEW! <b>≈ 2.95</b>		

## PE-162 DC POWER PLANT



A compact, lightweight portable D.C. Electric Generating Set powered by a Jacorsen Model J-100, 1-cylinder, air-coiled, 2 cycle manual rope starting gasoline engine which is directly coupled to a DC shunt wound, self excited four-pole generator having a output of 550V. DC. @ 250 MA & 6.3V. DC. @ 3.5 Amps. The power unit was originally designed to power the AN/GRC-9, SCR-294 (BC-1306), SCR-284-A (BC-654) and the AN/TRC-2 radio sets. This set is ideal for powering amateur portable equipment PE-162 Power Unit.  
 With runing spares & tool set Brand New \$49.95

The PE-75 is a self contained compact portable, gasoline engine- driven Power Plant. The AC. Generator is belt coupled. The engine used is a Briggs and Stratton single cylinder, 4 cycle air cooled model ZZ. For which parts are available world wide through Briggs and Stratton dist. This unit has many uses and is thoroughly reliable

**TECHNICAL CHARACTERISTICS:**  
 Operating speed: 1800 RPM  
 H.P.: 6.5 @ 2400 RPM  
 Start: Rope  
 Type Generator: self-excited  
 Ger. Output: 2500W., 120V. AC. 22AMP 1PH. 60 CPS  
 Power Factor: 100%  
 Net WT: 350LB. Dimensions: 36" Lx20"Wx26"H  
 PE-75 Excellent Condition Tested and Operating: \$299.50

The PE-95 are complete, self-contained, trans- portable, Electric Generating Sets consisting of a 4-cylinder, 4-cycle, L-head, water cooled, electric-starting-35hp Willys Overland model JP-441 or MB-441. Gasoline Engine directly connected to a 10 KW AC Generator of the revolving- field, self excited type. The PE-95 has a control panel mounted at one end of the unit on which all necessary meters, terminals and controls are mounted. An ideal unit.

Number of cylinders	4
Piston displacement	134.2 cu. in.
Compression ratio	6.5 to 1
Engine speed	1,800 rpm.
Type of cooling	water
Horsepower	35 at 1,800 rpm.
Lubrication system	force feed
Air cleaner	oil-bath type
Cooling system capacity	15.5 qts
Spark plug, 14 mm.	0.025 gap
Fuel tank capacity	10 1/2 gals
Crankcase oil capacity	5 qts.
Governor	King-Seely No. 7433
Main bearings	steel-backed, replaceable
Battery voltage	12 (two 6-volt, in series)
Generator	D. W. Guan OS-19
Rating	10 kw., 120-240 volt, 104-52 amps
Power factor	80%
Generator speed	1,800 rpm.
Exciter	built-in
Exciter bearings	none
Fuel consumption	1.1 gals. per hour
Type ignition	battery and distributor

Dimensions: 28"Wx68"Lx38"H Wt. 1500 Lbs.  
 PE-95 Exc. running cond. tested & operating \$695.00



\* For Campers  
\* Trailers

**terado**  
DC-AC

# Converters, Chargers, Relays

\* Mobile  
\* T.V. Radio  
\* Tape Recorders

CHANGES BATTERY CURRENT TO 110 VOLT AC, 60 CYCLE



SUPREME AND CONTINENTAL

### CONVERTERS

**SUPREME**  
Converts 12 v. DC to AC; power output, 175-200 watts. Complete with wire for installation and remote control. Remote control has variable AC output switch and signal light indicating proper AC output voltage. Filtered for use with tape recorders. Steel case. Size: 10 1/2" w. x 6" d. x 6" h. Shpg. Wt., 25 lbs. **Terado No. 50153—Net Each. \$7334**

**CONTINENTAL**  
Same as Supreme, but transistorized and has capacity of 300-350 watts. Shpg. Wt., 30 lbs. **Terado No. 50191—Net Each. \$9867**

**RECORDER**  
Same case as "Supreme" less remote control. Input, 12 v. DC; output, 150-175 w. Plugs into cigarette lighter. Hi-low voltage selector switch to maintain proper output voltage. Filtered for use with tape recorders and portable TV. Size: 10 1/2" w. x 6" d. x 6" h. Shpg. Wt., 21 lbs. **Terado No. 50175—Net Each. \$6637**

**CHIEF**  
Operates tape recorders, power tools, dictation machines, mixers, blenders, etc. Two models available. Direct connection to battery. Front AC receptacle. Toggle switch output control. Ventilated steel case. Easy to mount. Size: 3 1/2" w. x 6 1/2" d. x 4" h. Shipping Weight, 3 lbs. **Terado No. 50137—Voltage input, 6 v. AC Power Output, 75-100 watts. Net. \$4666**  
**Terado No. 50138—Voltage input, 12 v. AC Power Output, 100-125 watts. Net. \$4666**

**AUTOMATIC**  
Operates automatically from 6 or 12 v. DC without vibrator change or switching (6 v., 55-75 watts; 12 v., 85-110 watts). Easy installation into cigarette lighter. For dictation machines, radios, tape recorders, phonographs, heating pads, etc. Steel case. Seal brown baked enamel. Size: 3 1/2" w. x 6 1/2" d. x 4" h. Shpg. Wt., 8 lbs. **Terado No. 50134—Net Each. \$3865**

**SUPER**  
Operates dictation machine, radios, phonograph, tape recorders, massaging equipment, etc. Two compact, lightweight models available. Simple installation into cigarette lighter. Steel case. Seal brown baked enamel. Size: 3 1/2" w. x 6 1/2" d. x 4" h. Shipping Weight, 8 lbs. **Terado No. 50126—Voltage input, 6 v. AC Power Output, 60-75 watts. Net. \$3332**  
**Terado No. 50127—Voltage input, 12 v. AC Power Output, 75-100 watts. Net. \$3332**



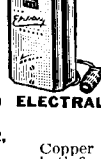
RECORDER



CHIEF



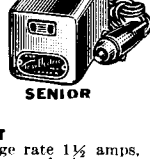
AUTOMATIC SUPER AND MASTER



ELECTRAL



TINY GIANT



SENIOR



QUIK SHAVE

### BATTERY CHARGERS



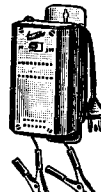
DYN-A-MITE



CHAMPION



LEADER



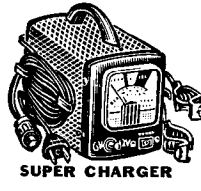
TINY GIANT



HI-POWER



CHALLENGER



SUPER CHARGER

**MASTER**  
Operates some dictation machines and tape recorders, radios and phonographs, emergency lighting, etc. Easy to install into cigarette lighter. Steel case. Seal brown baked enamel. Size: 3 1/2" w. x 6 1/2" d. x 4" h. Shipping Weight, 6 lbs. **Terado No. 50121—Voltage input, 6 v. AC Power Output, 50-60 watts. Net. \$2768**  
**Terado No. 50122—Voltage input, 12 v. AC Power Output, 60-75 watts. Net. \$2768**

**ELECTRAL**  
Glove compartment size converters, available in 6 v. or 12 v. input. Easy installation into cigarette lighter. Operates De Jur Stenorette, Geloso, G.B.C., Stenocard, Norelco dictation machines, radios, etc. Vinyl coated steel case with leatherette appearance. Size: 2 1/2" w. x 5 1/2" d. x 5 1/2" h. Shipping Weight, 3 lbs. **Terado No. 50174—Voltage input, 6 v. AC Power Output, 32-42 watts. Net. \$1798**  
**Terado No. 50167—Voltage input, 12 v. AC Power Output, 42-52 watts. Net. \$1798**

**SENIOR**  
Operates radios, lights, phonographs and small tape recorders. Available in 6 v. or 12 v. input. Simple to install into cigarette lighter. Aluminum case. Seal brown baked enamel. Size: 2 1/2" w. x 4 1/2" d. x 2 1/2" h. Shipping Weight, 3 lbs. **Terado No. 50115—Voltage input, 6 v. AC Power Output, 35-40 watts. Net. \$1598**  
**Terado No. 50116—Voltage input, 12 v. AC Power Output, 40-50 watts. Net. \$1598**

**AUTO SHAVER**  
Operates all electric shavers by plugging into AC receptacle provided. Available in 6 v. or 12 v. input. Easy installation into cigarette lighter. Polyethylene non-breakable case. Size: 3 1/2" w. x 2 1/2" d. x 4 1/2" h. Shipping Weight, 2 lbs. **Terado No. 50123—Voltage input, 6 v. AC Power Output, 10-15 watts. Net. \$931**  
**Terado No. 50103—Voltage input, 12 v. AC Power Output, 15-20 watts. Net. \$931**

**QUIK SHAVE**  
Speeds up electric shaver; cuts shaving time in half. Changes AC to DC. **Terado No. 50184—Net Each. \$393**

**BATTERY CHARGERS**  
Electronically engineered full wave silicon rectifier chargers. Miniaturization with full power charge rate.

**DYN-A-MITE**  
Baked seal brown paint over aluminum case. Charge rate 1 amp, both 6 and 12 volts. Size: 1 3/4" x 1 3/4" x 3 1/4". Wt., 1 lb. **Terado No. 50186—Net Each. \$590**

Copper clad steel case. Charge rate 1 1/2 amps, both 6 and 12 volts. Warning buzzer for improper connection. Size: 2 1/4" x 3" x 5 1/2". Weight, 1 1/2 lbs. **Terado No. 50185—Net Each. \$721**

**LEADER**  
Copper clad steel case. Charge rate 3 amps, 12 volts only. Warning buzzer for improper connection. Size: 2 1/4" x 3" x 5 1/2". Weight, 2 lbs. **Terado No. 50187—Net Each. \$1047**

**CHAMPION**  
Copper clad steel case. Charge rate 4 amps, both 6 and 12 volts. Automatic circuit breaker protection. Size: 2 1/4" x 3" x 5 1/2". Weight, 2 lbs. **Terado No. 50188—Net Each. \$1327**

**HI-POWER**  
Copper clad steel case. Charge rate 5 amps, 12 volts only. Cigarette lighter plug-in. Charge indicator light shows condition of battery. Size: 2 1/4" x 3" x 5 1/2". Weight, 3 lbs. **Terado No. 50180—Net Each. \$1397**

**CHALLENGER**  
Brown baked enamel ventilated steel case. Charge rate 6 amps, both 6 and 12 volts. Charge rate meter. Brackets for coiling wire provided. Size: 4" x 5" x 6". Weight, 5 lbs. **Terado No. 50189—Net Each. \$2027**

**SUPER CHARGER**  
Brown baked enamel, ventilated steel case. Charge rate 10 amps, both 6 and 12 volts. Color coded meter shows condition of battery and charge rate. Size: 4" x 5" x 6". Weight, 7 1/2 lbs. **Terado No. 50181—Net Each. \$2487**

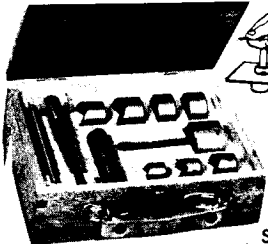
**SERIES 6000 MICRO-RELAYS**  
60 MILLIWATT OPERATING POWER  
Hermetically sealed, single pole double throw (Form C) silver contacts, rated at 1 amp at 24 v. non-inductive load. Operating temperature range -55°C to +85°C. Insulation: 500 v. at any terminal to ground. Excellent vibration characteristics due to short armature. Base fits 7-pin miniature tube socket. Size: 3/4" x 1 1/4" long.

Terado No.	Coil Resistance	Operating Volts DC	Net Each*
B1330	24 ohms	1.5	\$8.42
B1331	300 ohms	6	8.55
B1332	2,000 ohms	12	8.94
B1333	5,000 ohms	24	9.71
B1249†	8,000 ohms	20	10.55
B1334	8,000 ohms	24-28	10.55
B1335	10,000 ohms	32	10.91

\*Write for quantity prices. †Used in most TV cameras.

## HANDY ACCESSORIES AT REAL LOW PRICES FEATURED BY COLUMBIA. ORDER NOW!

### CALRAD CP-11 CHASSIS PUNCH SET



**\$7.95**

Complete with Punch Tool and the following Punches:

- 5/8", 23/32", 13/16"
- 1", 1-3/16"

Sturdy Wood Carrying Case. PUNCHES PLUS BURRING REAMER

CP-11 \$7.95

### CALRAD LIGHT SENSITIVE PHOTO EYE SWITCH

Just plug lamp or other light into standard outlet on rear of Photo-eye switch. Light sensitive photo cell closes the rest. Automatically turns light on when it gets dark, off when it gets light again. Wonderful for house protection, store displays, etc. Handles up to 300 watts, or will handle heavier loads with external power relay. Neat black bakelite case, size only 3 7/8" L. x 1 3/8" W x 2 3/8" H. Rubber suction feet holds to any surface. Complete with 6 ft. cord for 117V. cy. AC.



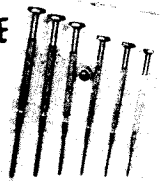
**\$6.95**

PE-5 Calrad \$6.95

### CALRAD MS-6 JEWELERS MINIATURE SCREW DRIVERS

Set of Six Fine Jewelers Screw Drivers in Plastic Holder.

**99c**

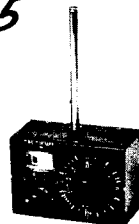


### BANDSWITCHING FIELD STRENGTH METER

**\$8.85**

Four Band- 1.6 to 150 mc. In four bands. Accuracy: ±10%. Can be used as sensitive field strength meter or as frequency checker. Compact, sturdy case with a magnet to hold to car fender, etc.

F51-2 New \$8.85



### CALRAD 5X ILLUMINATED MAGNIFIER

Calibrated measuring field. Powered by 2 C cells. ML-102

Batteries separate 15¢ ea. MF5-Mag Light New \$1.49



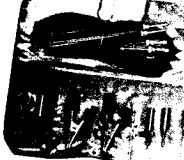
**\$1.49**

### CALRAD TL-50 ALL PURPOSE TEST LEAD KIT

**\$7.29**

Red and Black 4 1/2" plastic handle pin prods, with heavy duty 5,000 V insulation, 35" kinkless rubber leads terminating in red and black 2" plastic grip banana plugs. Choice of interchangeable terminals for various uses — all slip directly onto banana plugs. Spade lug terminals, color-coded alligator clips, or phone tips give positive solderless connection for universal use. All items packed in handy compartmented flexible plastic case with snap fastener.

TL-50 \$1.29



### PRECISION VERNIER DIALS

FROM \$1.19 UP

8:1 RATIO precision vernier dials with a black bakelite base and nickelsilver dial plates with deeply etched legible scales. Knob with fluted grip. Internal parts of phosphor bronze and brass for long-life dependability. Calibrated 0 to 100 in 180 rotation. For front panel mounting.

1 1/2" diameter	VD-36	New	\$1.19
2" "	VD-50	"	1.39
2 7/8" "	VD-70	"	1.89



CALRAD

## HS-33 HEADSET

**\$5.95**  
NEW



\$20.00 VALUE

HS-33 is a 600 OHM low impedance, flat response 200 to 4000 cps. Headset with a leather covered fully adjustable PB-7 Headband and MC-162-A Rubber Ear Cushions for comfort. Complete with 18" side mounted cord with PL-354 plug and two ANB-H-1 Receiver Units.  
HS-33 Headset NEW \$5.95

HS-33A Headset, same as HS-33 but has large Chamoise lined NAF-Pads for extra comfort.  
HS-33A NEW \$7.95

## HS-23 HEADSET (see photo above)

HS-23 is a 4000 Ohm HI Impedance Headset. This Headset is exactly the same as the HS-33 except that two R-14 HI Impedance Receivers are used.  
HS-23 Headset NEW \$4.95

## HS-30 LIGHTWEIGHT HEADSET

HS-30 is a 250 Ohm ultra light weight hearing aid Headset with soft rubber ear-pads.

HS-30 Headset NEW 95¢



CD-605 Five foot extension cord with PL-55 plug and transformer 250 to 4000 Ohm.

CD-605 New 95¢

## OTHER HEADSETS FROM OUR LARGE STOCK!

H-16/U 8000 OHMS	Ex. Cond.	\$3.95
HS-38 600 "	NEW Cond.	3.49
CW-49507 600 OHMS	Ex. Cond.	4.95

## HEADSET ACCESSORIES & PARTS

CD-307 5ft. extension cord for HS-33 & HS-23 Headsets has JK-25 Jack & PL-55 Standard Phone Plug

NEW 95¢

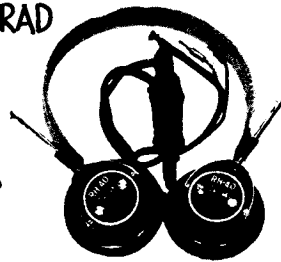
HB-7 Leather covered Headbands with  
 PL-354 Plug NEW Ea. \$2.49  
 ANB-H-1 Receiver Units-300 ~ " " 1.50  
 R-14 Rec. Units-4000 Ohms " " 1.00  
 MC-162-A Soft rubber cushions for HS-33 & HS-23 Headsets " " 49¢  
 NAF-48490-1 Chamoise lined ear cushions, for extra comfort these pads cover your whole ear and eliminate outside noise. " " 1.50  
 MC-385 HI to low Impedance Adapter " " 95¢

## RH-40 CALRAD

Radio Type

Headphones

**\$1.95**  
NEW



Radio type head phones. High impedance 4,000 ohms.

RH-40 Calrad NEW \$1.95

## CH-85 DOUBLE CRYSTAL HEADPHONES

Deluxe, high-impedance, headset for private high fidelity listening. Gleaming black plastic phones on sturdy metal head bands which are padded with thick rubber like plastic and are adjustable for comfort. Low distortion sound over a frequency range from 65 to 13,000 cps. Voice coil impedance 75,000 Ohms. Complete with long covered cord and plugs.

**\$7.95**

CH-85 Calrad NEW \$7.95

## PERMOFLUX Hi-Fi HEADSET 600~

worth \$35.00

**\$14.95**  
NEW



This fabulous headset is used for professional monitoring. Amazing frequency response and lack of distortion make these a real buy. Permoflux Hi Fi NEW \$14.95  
 5 ft. extension cord NEW 95¢

## Calrad STEREO HEADPHONES

- Super Comfortable-Deluxe Cushioned
- Response 30 to 15,000 CPS.



Enjoy listening your favorite stereo programs with these fine headphones. Headband is leather padded; phones are rubber cushioned with velvet covering. Cushioning covers entire ear to keep external noise out and provides complete channel separation. Impedance; 8 ohms. With 5 1/2 foot cord terminating in 1/4" phone plug. May be used with any amplifier, stereo or monophonic, equipped with 8 ohm output.

HP-2 Calrad NEW \$14.95

## RH-20 CALRAD Radio Type Headphones



Hi-impedance-2,000 ohms-general use headset. Black and Ivory plastic cased electro-magnetic units with adjustable head-band for comfortable fit. Individual listening for all types of applications. Flexible cord attached.

RH-20 Calrad NEW \$1.49

## HEADSET MICROPHONES

OTHER HEADSET MICROPHONES ALSO AVAILABLE.

WRITE FOR QUOTATIONS.	H-81/U	H-108/U
	H-91/U	H-114/U
	H-92/U	H-144/U

## H-78/AIC HEADSET MICROPHONE



H-78/AIC one of the latest type Aircraft headset microphones incorporating dynamic micro. This set is also used with the AN/AIC-10 Aircraft interphone system.

H-78/AIC Headset Microphone checked out Ex. Cond. P.U.R.

## H-63/U HEADSET MICROPHONE

**\$4.95**



H-63/U A fully adjustable Headset with a Boom Microphone fastened to Headset with snaps. Can be snapped off Headband when desired. Headset is 600 OHM low impedance Magnetic type. Microphone is 100 OHM carbon type.

H-63/U Ex. Cond. Checked Out \$4.95

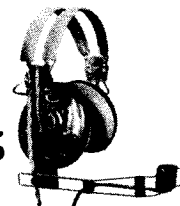
AN/GSA-6 is used with H-63/U above. Press to talk switch assembly and extension cord with U-77/U plug that fits all GRC & PRC Radio Sets.

AN/GSA-6 Ex. Cond. \$4.95

## H-46A/UR HEADSET MICROPHONE

Worth \$54.00

NEW !! **\$19.95**



H-46A-UR A complete HS-33, 600 OHM Headset with a M-3/U Boom 100 OHM Carbon Microphone attached, with a Swivel Bracket. Excellent for commercial, and private aircraft.

H-46A/UR Orig. Cost \$54.00 Brand New \$19.95

For above item: CD-307 5ft. Ext. Cord with PL-55 plug. New \$ .95

CD-318 Pressto talk switch & 6 ft. cord with PL-68 Plug. NEW 95¢

## 52 AW HEADSET HANDSET



A Telephone Switch Board combination set that can be also hand held by removing the Headband.

52 AW	Ex. Cond.	\$14.95
52 AW	NEW	22.50

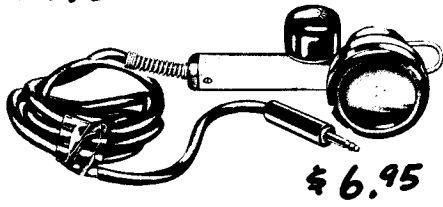
## 53 AW HEADSET \$27.95 NEW



This high quality telephone operator's headset. Light weight and compact design make it comfortable to wear and easy to use. Multi-adjustment joints assure a perfect fit for any operator.

53 W Headset New \$27.95

### T-17D MICROPHONE

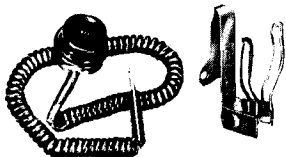


**\$ 6.95**

The T-17D is a very sensitive press to talk 100 Ohm Carbon Single Button Microphone for use with practically all Military Radio Sets. Complete with 5 ft. Cord and PL-68 Plug.

T-17-D Brand New \$6.95

### RS-38 MICROPHONE



The RS-38 is a compact press to talk 100 Ohm Carbon Hand Microphone. This Mike can be used in place of the T-17-D Mike. Complete with 5 ft. Cord and PL-68 Plug.

RS-38 with Coil Cord NEW \$6.95  
RS-38 with Straight Cord Ex. Cond. Tested 3.95  
RS-38 Mike Hanger Ex. Cond. 1.95

### M-29-U MICROPHONE

**\$9.95**



Microphone M-29/U is a 100 Ohm Single Button Carbon-Microphone with a press to talk switch. This Microphone is used with all GRC & PRC Equipment With 5 ft. Cord & U-77/U Plug.

M-29/U Ex. Cond Checked Out \$9.95

### CM-76 Push-to-Talk Mike with retractable coiled cord Ideal for Citizen Band Sets

**\$ 5.49**

Push-to-talk carbon microphone with retractable coiled cord, shaped to fit your hand, convenient push-to-talk switch. Outstanding performance at a low price. A hand-held microphone ideal for mobile communications. Designed to fit your hand comfortably with easy to reach, easy to use push-to-talk switch. Furnished with hanging bracket for convenient mouthing. Sturdy plastic case. Frequency response: 200-4,000 cps. Low impedance.

CM-76 With coil cord New \$ 5.49

### T30 NECK MIKE

**95¢ ea.**



T-30 a double button 100 ohm Carbon Microphone designed to be strapped to the neck, complete with one foot long cord and PL-291 two pin plug

T-30 Microphone NEW 95¢

### T-45

LIP MICROPHONE

**\$ 1.95**

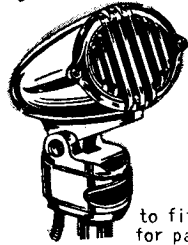


T-45 a single button 100 Ohm Carbon Contact Microphone designed to hang from the ears and mount in front of mouth. Comes with 1 ft. long cord & PL-291 two pin plug. Use CD-318 Extension Cord for press to talk operation.

T-45 Microphone NEW \$1.95

CD-318 6 ft. Extension Cord for T-45, T-30 & other Microphones which have the PL-291 Plug. Comes with press to talk Switch and Cord with PL-68 Plug. CD-318 NEW 95¢

### 400-C CRYSTAL MIKE



**\$ 4.95**

Full size, top performing mike with standard thread to fit most any mike stand. Fine for paging, hams, home recording, etc. High impedance type with wide range response for voice or music. High output -52 db. Case of tough die-cast metal with smooth green enamel finish and bright trim.

Calrad 400-C New Ea. \$4.95

### CM-58 HANDTYPE CRYSTAL MIKE

**\$ 2.49**

High impedance with exceptional clear cut response and high output. Beautiful grey plastic case 3x2x1 1/4", for threaded desk stand or hand held use. 5 ft. shielded cable.

Calrad CM-58 New \$2.49

### M-28 CRYSTAL LAPEL MIKE

EASY TO CONCEAL IN HAND OR CLIP TO CLOTHING! **\$ 2.39**

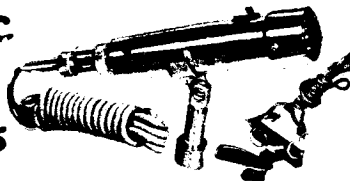


A natural for hidden hearing devices, etc. Non-directional and gives crisp, clear speech reproduction. Hi impedance. Hi output type with spring clip for attaching. Weighs only 2 oz. Bright metal case 1" dia., 3/8" thick with 55" long cable.

Calrad M-28 New Ea. \$2.39

### 100-C CRYSTAL MIKE

**\$ 3.95**



Slim type hand held high Impedance. Excellent for tape recorders & general purpose use. With off-on switch and detachable 6 ft. cord. Excellent for voice or music. Satin chrome finish case. Supplied with mike stand adapter and javilier. Sens.: -52 db. Freq. Resp.: 100-9000 cps

100-C Microphone with two holders NEW \$3.95

### 500-C BROADCAST TYPE CRYSTAL MIKE

Two separate phased crystal units mounted vertically for true 360 omni-directional pickup. For group use, speaking, singing, or instrumental. Brass construction, beautifully finished in chrome and black. 3" Wx7"H. With shielded plastic covered cable. Fits standard mike stand. Freq. Resp. 80-8000 CPS Sens. 50 DB.

Calrad 500-C NEW \$6.95



**\$ 6.95**

### C-3 CRYSTAL CARTRIDGE

For replacement use, or concealed operation. Approximately 2" in diameter; 70-7,000 cps response; sensitivity, -52 db. May also find use as crystal earphone unit.

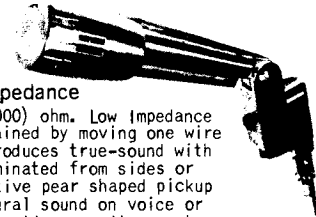
Calrad C-3



NEW \$1.49

### DM-17 DYNAMIC MICROPHONE

**\$ 19.95**



Dual Impedance

High Impedance (50,000 ohm. Low Impedance (50) ohm can be obtained by moving one wire This microphone reproduces true-sound with unwanted pickup eliminated from sides or rear due to a sensitive pear shaped pickup pattern. Smooth natural sound on voice or music. Rugged construction permits rough handling.

Specifications: Freq. response: 40-15000 cps Imped.: High 50K ohm - Low 50 ohm Sensitivity: 52db, 1000 cps Finish: Satin chrome. Supplied with on and switch and cable (6')

Calrad DM-17 New \$19.95

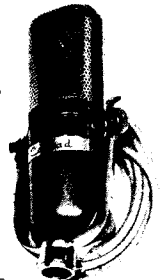
### DM-15 DYNAMIC MICROPHONE

**\$ 12.95**

Studio Type Dynamic Microphone. Omni-directional for general purpose. Excellent for wide range pickup. Silver-grey finish. Shielded cable.

Freq. Response: 60-10,000 cps Impedance: 50K ohm Sensitivity: -71 db Dimensions: 5 1/2" L x 2" Rnd. Fits standard Mike Stand

Calrad DM-15 NEW \$12.95



### DM-12 DYNAMIC MICROPHONE

COPY OF WIDLY USED STUDIO MICROPHONE!!

High-style streamline design dynamic mike with excellent characteristics; for nightclub, PA, and other uses. With satin chrome finish. Complete with cable and mike connector on-off switch.

Freq. Resp.: 60-12,000 ohms CPS Imp.: 50K ohms Sens.: 52 db

**\$ 14.95**

Calrad DM-12 NEW \$14.95

### DM-7 MINIATURE DYNAMIC MICROPHONE

**\$ 7.95**



Freq. Resp. 60-12,000 OHMS CPS Sens: 52 DB IMP.

Perfect for recorders, paging, ham stations, lecturers, sales demonstrators, etc. Small size, light weight; hangs conveniently from neck cord or fits hand where close talking is desired. Pickup is non-directional. Dynamic high impedance unit. Gives crisp, smooth wide-range reproduction. Not affected by temperature and humidity. Finished in chrome and black. Dia. 1 1/8x2 7/8 long. With Detachable 5 ft. shielded cable.

Calrad DM-7 NEW \$ 7.95

### MILITARY MIKES

M-3A/A	M-51/UR	WRITE US YOUR REQUIREMENTS.
M-6A/UR	M-52/U	
M-15/UR	M-53/U	
M-35/U	M-54/U	



# HAM and INDUSTRIAL TOWERS

## EMPIRE SERIES SEMI CRANK-UP TOWER

Many new improvements include re-designed method of fastening tower bases, double bolting on sections of 8 through 10 for greater strength, reinforcing at critical points, and complete redesign of all accessories. You can install these towers on the ground using our hinged concrete base mount, or our new "AF" Series flat steel base plate. For installation on sloping roofs, the "F" Series bases are interchangeable with both "D" and "AF" Series. All tubing on tower uprights is of 16 gauge material or heavier.



### 10 FT. AND 20 FT. SECTION, TOWER COMBINATION

Model	Height	No. of Sections	Weight	Net Price
J-3	28'	1-10', 1-20'	85 lbs.	\$ 53.90
J-4	36'	2-10', 1-20'	120 lbs.	74.47
J-5	46'	1-10', 2-20'	150 lbs.	89.42

### 10 FT. SECTION, TOWER COMBINATIONS

K	Height	No. of Sections	Weight	Net Price
K-2	18'	2-10'	60 lbs.	\$ 38.93
K-3	26'	3-10'	90 lbs.	59.91
K-4	34'	4-10'	130 lbs.	82.51
K-5	42'	5-10'	175 lbs.	107.13
K-6	50'	6-10'	225 lbs.	137.00
K-7	58'	7-10'	280 lbs.	202.25
K-8	66'	8-10'	335 lbs.	261.54

### 20 FT. SECTION, TOWER COMBINATIONS

L	Height	No. of Sections	Weight	Net Price
L-2	38'	2-20'	110 lbs.	\$ 69.45
L-3	56'	3-20'	170 lbs.	105.07
L-4	74'	4-20'	255 lbs.	148.61
L-5	92'	5-20'	345 lbs.	196.68
L-6	110'	6-20'	440 lbs.	268.25
L-7	128'	7-20'	535 lbs.	383.13
L-8	146'	8-20'	650 lbs.	499.95

## T SERIES

### CRANK UP TOWER

Die formed guides are used to insure minimum friction. Designed and constructed to prevent binding in raising or lowering of tower. Safety stops constructed of 1-1/2" x 3/16" steel relieves tension on cable. Ball bearing aircraft control type pulleys. Removable crank insures safety. Heavy gauge steel base plate, hinged to facilitate mounting on slanting or straight surface.



### MODELS WITH 20 FT. SECTIONS

Model	No. of Sections	Height	Weight	Net Price
T-588	5	88'	280 lbs.	\$204.52
T-471	4	71'	210 lbs.	151.16
T-354	3	54'	155 lbs.	124.48
T-237	2	37'	100 lbs.	82.44
T-120	1	20'	40 lbs.	35.44

### MODELS WITH 10 FT. SECTIONS

T	No. of Sections	Height	Weight	Net Price
T-761	7	61'	280 lbs.	\$265.59
T-652	6	52'	215 lbs.	211.72
T-545	5	45'	165 lbs.	141.46
T-436	4	36'	125 lbs.	106.69
T-327	3	27'	90 lbs.	84.86
T-218	2	18'	60 lbs.	58.18

### HEAVY DUTY MODELS WITH 20 FT. SECTIONS

T	No. of Sections	Height	Weight	Net Price
T-7122HD	7	122'	515 lbs.	\$518.90
T-6105HD	6	105'	460 lbs.	418.81
T-588HD	5	88'	360 lbs.	326.06
T-471HD	4	71'	265 lbs.	240.09
T-354HD	3	54'	210 lbs.	168.95
T-237HD	2	37'	135 lbs.	124.48

All Tri-Ex Towers and accessories feature a triple coated finish for maximum weather protection; (1) iron phosphate rustproof undercoating, (2) newly designed durable epoxy resin prime coat and (3) baked auto-type enamel finish coat.

Tower Problems are our Specialty. Many more to pick from. Write us your Specifications. All Tri-Ex Towers F.O.B. Tulare Calif.

# MILITARY ANTENNAS AND ACCESSORIES

## MAST BASES AB-15 & MP-65 FROM \$2.95 UP



COAX JACK FOR PL-259

AB-15 Insulated Mast Base for vichical or fixed station mount. A rubber covered spring with a large insulator and a COAX jack for PL-259 plug. Mounts in a 2" hole. Designed to accept MS-116 or MS-117 antenna sections.

AB-15 Mast Base	New	\$4.95
AB-15 " "	Ex. Cond.	2.95
MP-65 Mast Base	Same as AB-15 but Heavier duty.	
MP-65 Mast Base	Ex. Cond.	\$12.95

## MP-22-A MAST BASE



Side mount swivel mast base will tip to 90 either right or left has a spring snap lock in the vertical position, size mounting plate 5" x 6" x 10". Will accept MS-51 mast section.

MP-22-A mast base	NEW	\$2.49
9 ft. tapered antenna for (above MP-22-A) MS-49-50-51		\$1.49

## MP-48 MAST BASE

\$2.95

A very rugged Mast Base with insulator above the spring. Will accept MS-53 or MS-54 Mast sections.

MP-48	Ex. Cond.	\$2.95
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## VHF LOW PASS FILTER

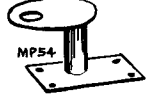


Excellent for reducing TVI cut off Freq. 170MC Imp. 52 ohms. MFG. by R.C.A.

LPF	New each	\$1.95
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\$1.95 NEW!

## MAST BASE MOUNTING BRACKET



Steel mounting brackets with exact size 2" hole for Antenna Bases such as AB-15, MP-65, MP-33, MP-37, MP-48 and MP-57.

MP-50 Side Mounting Bracket	Ex. Cond.	95¢
MP-54 Flat surface Mounting Bracket	" "	\$1.49

95¢ & \$1.40

## AN-21 AERIAL WIRE 100 FT. ROLL

Phosphorous bronze #16 stranded 200 lb test, weatherproof 100 ft.

AN-21	NEW	\$1.29
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\$1.29 NEW!

## MS-116 TO MS-117

### ANTENNA MAST SECTIONS

Light weight 3 ft. long tapering tubular steel copper coated and painted antenna sections MS-117 top, MS-118 middle, MS-116 bottom. Designed for use with AB-15 and MP-65 Mast Bases.

MS-116 Bottom section	Ex. Cond.	95¢
MS-117 Middle section	" "	95¢
MS-118 Top section	" "	95¢

95¢

## MS-49 TO MS-54

### ANTENNA MAST SECTIONS

3 ft. Tubular steel, copper coated and painted sections. These screw together to make any desired length. MS-49 being the top & smallest section increasing in size through MS-50-51-52-53 to MS-54 being the larger one. Either the MS-53 or MS-54 will fit together to form any additional height desired. Example a 33 ft. vertical may consist of one each MS-49, 50, 51, 52, and 7 each of MS-53 or it may be finished out on the bottom with 6 MS-54 sections. Self support to about 18 ft. Average Wt. app. 1/2 lbs.

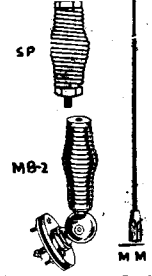
ALL EX. COND.	MS-49-50-51-52-53	.50¢ ea.
	MS-54	.75 ea.

## Tenna Mobile Communication Line

### Make Your Own Combinations



MB-1 Swivel Base	\$2.95
MB-2 Standard swivel base and spring.	3.95
MB-2H Heavy duty swivel base and spring	4.95
* Threaded fitting on end of spring to receive stud of mast 1/8".	
MBS-1 Standard base spring	1.49
MBS-2 Heavy duty base spring	1.95
MB-4 Chrome plated ball and base	3.95
MB-5 Cadmium plated resistant painted ball and base	3.49
MB-6 Cadmium plated ball and base	2.95
SP-1 Stainless Steel Spring	3.95



SP-2 Cadmium plated black resistant painted spring	2.49
SP-3 Cadmium plated spring	1.95
BM-1 Single chain bumper mount	4.95
BM-2 Double chain bumper mount	5.95
MM-60 Stainless Steel Whip 60"	3.29
MM-72 " " " 72"	3.29
MM-84 " " " 84"	3.49
MM-96 " " " 96"	3.95
MM-102 " " " 102"	3.95
MM-108 " " " 108"	4.39

Model SP-1 is constructed of Stainless Steel. Models SP-2 and SP-3 are constructed of oil-tempered, tightly coiled heavy spring steel, designed to withstand heaviest shocks, vibrations, and extreme temperatures.

DELUXE CHROME PLATED SINGLE BUMPER MOUNT. This mount can be fastened quickly and easily with no special tools.

DELUXE CHROME PLATED DOUBLE BUMPER MOUNT. This mount is the same as Model No. BM-1, except that it has a DOUBLE CHAIN for heavy duty usage.

Stainless Steel construction — WHIP SERIES. exceptional high tensile strength.

Tenna's bases have adjustable split-ball with positive locking feature, maintains angular adjustment at all times.

## SAVE! LOW A COAX CABLES

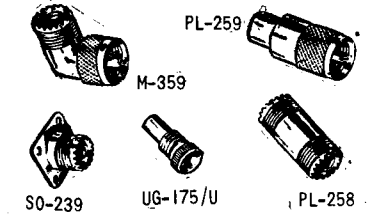


### Finest Quality

ALL FRESH NEW STOCK NOT SURPLUS (Minimum order 25 ft. per type)

	Per Ft.	Per 100 Ft.
RG-8/U 52 Ohm	.12	or \$9.95
RG-11/U 75 " "	.12	or 9.95
RG-58/U 53.5 Ohm	.05	or 3.95
RG-59/U 73 " "	.05	or 3.95

## COAX CABLE CONNECTORS



HIGHEST QUALITY - SILVER PLATED (New shiny stock not surplus)

PL-259 Coax Plug	49¢ ea.	10 for \$4.50
M-359 Right Angle	39¢ ea.	10 for \$3.50
PL-258 Coupler	59¢ ea.	10 for \$5.50
UG-175/U Reducing Adaptor for PL-259	15¢ ea.	10 for \$1.29
S0-239 Panel Connector	49¢ ea.	10 for \$4.50

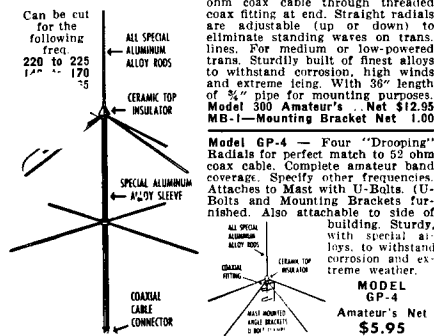
**FOR PRICE  
QUALITY &  
SELECTION**

# ANTENNAS Master Mobile MOUNTS

**COLUMBIA  
HAS THE BEST  
BUYS!**

## 2 METER ANTENNAS - FIXED • MOBILE

**GROUND PLANE ANTENNA**  
Model 300—Master Deluxe . . . NEW! . . . brings in that DX. Outperforms any type of vertical dipole. "Drooping" Type Ground Plane plus four straight radials to give a low angle of radiation for general coverage, an almost perfect circle radiation pattern. Ideal for CD and defense nets. Covers complete Amateur and with Broad Band char. Matches 52 ohm coax cable through threaded coax fitting at end. Straight radials are adjustable (up or down) to eliminate standing waves on transmission lines. For medium or low-powered trans. Sturdily built of finest alloys to withstand corrosion, high winds and extreme icing. With 36" length of 3/4" pipe for mounting purposes. Model 300 Amateur's . . . Net \$12.95 MB-1—Mounting Bracket Net 1.00

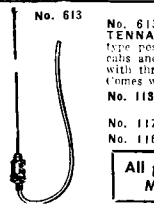


### TWO METER COAX ANTENNAS

No. 214—MASTER DELUXE . . . ruggedly constructed, vertically polarized. Frequency range 110 to 170 MC. Completely waterproofed. Highly polished chrome enhances appearance of any vehicle. Furnished with 10 ft. of 2 Ohm Coax Cable. Type 1—On side with 2 brackets furnished. \$15.95 Type 2—Master Mount No. 232X or 340X. Mounts sold separately. Complete \$17.45 Adjustable mtg.—adjusts to 17"

### 2 METER STANDARD MODEL

No. 114 COAX VHF ANTENNA—At a popular price! For OPEN TYPE VEHICLES using 140 MC to 165 MC. Mounts any convenient place with standard Master Mounts. Baked enamel finish. With 10 ft. Coax Cable and 18" Adjustable Section. Net. Only \$9.95



All products are for Universal Use—Mobile, Home, Marine, C.A.P., Civil Defense, Emergency, etc.

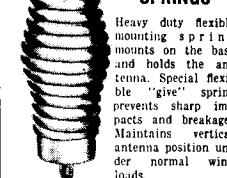
### BASE MOUNT

Engineered for Greater Performance!  
MMW-3 APS



Latest and greatest is this new design in universal swivel bases, incorporating the last word in modern design for strength and service. Easy one man installation, no special tools needed. Mounts watertight on curved or flat surface. Mounting Template provided. #24 thread mounting hole for whips and antennas. Model MMW-3AE . . . \$6.95 High Gloss Ebony Finish Model MMW-3AP . . . \$7.95 High Gloss Polished Finish Model MMW-3AES . . . \$8.95 Ebony Finish with Stainless Steel Hardware Model MMW-3APS . . . \$9.25 Polish Finish with Stainless Steel Hardware

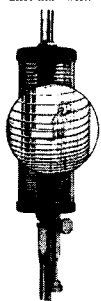
### HEAVY DUTY UNIVERSAL SPRINGS



Heavy duty flexible mounting spring mounts on the base and holds the antenna. Special flexible "give" spring prevents sharp impacts and breakage. Maintains vertical antenna position under normal wind loads. #24 tapped hole for antenna mast. #24 stud for antenna base. 5/8" b. Tightening wrenches supplied. Model MMW-7 . . . \$4.50 Cadmium plated with black painted ends. Lockwasher included. Model MMW-7HC . . . \$5.50 Heavy Cadmium plated for extra protection. Lockwasher included. Model MMW-7SS . . . \$8.95 Deluxe—Stainless Steel spring high quality appearance. Lockwasher included.

## THE GREAT NEW ADVANCEMENT IN VARIABLE ANTENNA COILS!

HY "Q" construction with wider spacing of turns for high frequency bands. Use as center or base loaded antenna with 60" whip.



**New! . . .**  
**Silver-Plated Roller with Positive Action, Stay-Put Contact**  
No. 333  
**MASTER MIGHTY MIDGET**  
For 40-20-15-11-10 Meters  
Net \$9.95

**No. 750 MASTER DELUXE ALL-BANDER**  
Covers 10 thru 7.5 and all intermediate frequencies. Silverplated single turn contact, positive spring. Eccentric cam contact, easy selection of turn. Automatic lock prevents damage to coil.  
Net \$14.95



**Ultra-Hi "Q" COILS**  
FOR 80-40-20 & 15, METERS  
After many years of experimentation, here is the coil with the "highest Q" ever obtained. It is tested and found to have a "Q" of well over 515. Use with 36" base section, 60" whip.  
• Ruggedized construction • Greater efficiency • Precision made • 2 1/4" Diameter  
ANY BAND . . . AMATEUR  
NET EA. \$5.25

### MOUNTS

<b>SERIES 232</b>	<b>SERIES 232C (COAXIAL TYPE)</b>	<b>SERIES 232C</b>	<b>MODEL 321C</b>	<b>MODEL 140X</b>
232C Base Mount—Heavy Duty—Double Tapered Spring—Swivel Base . . . \$9.85	232XC Base Mount—Heavy Duty—Double Tapered Spring—Coax. Conn. . . . 9.85	232XSS Base Mount—Heavy Duty—Double Tapered Spring—Spec. Stainless—Coax. Conn. . . . 14.95	321 or 321C Base Mount—Where no spring desired—with spec. rigid type ball joint . . . 7.95	140X . . . \$7.95

### MASTER MAGIC WAND TUNABLE

Combination Coil & Whip New Magic-Wand Top-Loaded Antenna Mounts On Any Standard Base Mount. A newly designed single band coil and whip antenna in 1 compact and attractive unit. Top loaded to provide top performance and efficiency at the most useful radiation angle for communications. Built and tested in the Master Mobile Laboratories, the Master Magic-Wand provides a minimum wind resistance which minimizes detuning effects at high speeds. Antenna wound over tapered fiberglass whip for maximum strength.  
Available in 5 ft. & 6 ft. Lengths  
No. MM810—10 Meters—5 Ft. L. \$8.95  
No. MM811—11 Meters—5 Ft. L. 8.95  
No. MM811-35—15 Meters—35" 8.95  
No. MM811-45—11 Meters—45" 8.95  
No. MM820—20 Meters—5 Ft. L. 8.95  
No. MM840—40 Meters—6 Ft. L. 9.95  
No. MM880—80 Meters—6 Ft. L. 9.95

### BASE STATION MONOPOLE ANTENNA

Designed around a folded radiating element, intended for service in installations requiring a ground plane configuration and a wider useful frequency range for a single antenna than is possible in the standard ground plane design using a coaxial stub tuner. Antenna is fed by an end seal type termination, through a Type SO-239 female connector mating with a PL-259 plug. Radiating elements and all ground plane elements are permanently grounded, therefore, damage by lightning is reduced to a minimum.  
• VSWR (using 50 ohm cable)  
• Bandwidth (under 2:1 VSWR) . . . 4%  
• Max. power input . . . 750 watts  
• Internal feed line . . . RG-8A/U  
• Nominal input impedance . . . 50 ohms  
• Termination SO-239  
SR-600-2 2 Meters Net \$14.95  
SR-600-6 6 Meters Net \$16.95  
SR-600-10 10 Meters Net \$24.50  
SR-600-11 11 Meters Net \$24.50

### MASTER FIBRE-GLAS WHIPS FLEXIBLE, INDESTRUCTIBLE UNIVERSAL ANTENNA

• Completely weatherproof—permanent and rust resistant, corrosion proof.  
• Break-Proof—specially designed flexibility prevents failure due to fatigue or breakage.  
• Safe—permanent insulation featured in Master Whips make it absolutely safe, prevents burns.  
• Base Fitting—3/4" x 24 thread with male brass—chrome plated fittings.  
FG-60 60" Amateur Net \$4.95  
FG-72 72" Amateur Net \$4.95  
FG-84 84" Amateur Net \$5.15  
FG-96 96" Amateur Net \$5.25  
FG-103 103" Amateur Net \$6.95  
Add \$5.00 for cutting Antenna to specific Frequency in Commercial or Aircraft band.

### CITIZENS BAND ANTENNA

26.960 to 27.225 MC  
Citizens Band Home Station Ground Plane—Designed to give maximum performance in the 27.0 MC range with minimum space requirements, easy installation. Constructed of heavy wall special alloy aluminum tube for the whip and support pipe. Swivel type antenna base mount permits installation on flat or peaked roof.  
Ground plane radials made of heavy flexible tinned copper braid.  
VSWR under 1.5:1 at resonance. Furnished complete with all mounting hardware, insulators, guy hooks, screws and 50 ft. of RG 58/U cable terminated with Motorola type auto radio connector.  
GP27-11 . . . \$34.50

### CITIZEN BAND 2 METER

No. 460 with 10' Coax (RG 58/U) \$7.95  
No. B-20 \$1.95  
No. CB-19 \$7.50  
New improved Master antennas for high performance. Stainless steel and chrome plated brass. Self-tapping threads. Easy to install with one 7/16" hole.

### 3 ELEMENT Beam Antenna

Designed for maximum power up to 1 KW input  
Don't waste power—Beam your signal where you want it. Sturdy and lightweight 3 element beam provides a power gain of approximately 2 1/2 (8 DB) in the forward direction and reduces interference from the sides and rear by approximately 10 to 1 (Front to back ratio 20 DB).  
A coaxial gamma match is pre-attached at the factory to give an excellent VSWR of 1.1 to 1 at hand center when fed with a 52 OHM coax.  
SR-500-2 2 Meters \$10.95  
SR-500-6 6 Meters \$12.95  
SR-500-10 10 Meters \$24.95  
SR-500-11 11 Meters \$24.95

### 11 METER CITIZENS BAND ANTENNA

A base-loaded stainless-steel whip antenna with an overall height of 40 inches. The bottom of the whip has been wound into a coil which is potted in a pliable plastic to add rigidity to the coil.  
The base of the whip is fitted with a 3/4" diameter brass slug, for use with a standard-broadcast 8-ball type roof mount; also roof-top or trunk-tilt type mounting.  
The antenna is cut to offer very low standing-wave ratio over most of the band when fed with a 52-ohm coax.  
**YOUR CHOICE EACH \$12.95**  
ANTENNA WITH PL-259 PLUG  
Model No. C-259 . . . \$6.95

### MASTER MARINE MARVEL MARINE ANTENNA

Designed, built and tested in Master Mobile's own floating laboratory, the new center-loaded Master Marine Antenna is the latest result of many years of experience in producing the finest in Antennas used throughout the world! The Marine Marvel assures and powerful, provides maximum power radiation on all marine frequencies from 2 to 22 megacycles. Here is the Antenna that was made for your boat! . . . engineered to withstand the most severe type of marine service. Long life assurance by being of the highest quality material available.  
• 4 Ft. Overall Length  
• Capacity 4 Ft. Stainless Steel Plastic-Coated Whip  
• 18" Center-Loaded Impregnated Coil.  
• 5 Ft. Anodized Base Section.  
• Absolutely Waterproof - Weatherproof.  
• No Electrolysis.  
• Rugged Insulators.  
• Adjustable Antenna Lead.  
COLOR AVAILABLE  
WHIP—Yellow, Blue or Black  
COIL—Yellow, Blue or Black  
BASE—Gold (Spec. Anodized)  
No. MMM-2710 Antenna & Solid Mounts—5 Ft. \$29.95  
No. MMM-2715 Antenna & Solid Mounts—10 Ft. Base \$35.95  
No. MMM-2700 Antenna—5 Ft. Base (less Mts.) . . . \$27.95  
No. MMM-2705 Antenna—10 Ft. Base (less Mts.) . . . \$33.95  
MMM-10 SOLID MOUNTS per set \$5.00

### MARINE LAYDOWN MOUNTS

New deluxe laydown mounts that can be mounted on either the side of cabin or upright on the deck. Mounts swivel and are adjustable to any position or mount. Made of chrome-plated brass with high impact waterproof-weatherproof phenolic insulator.  
MMM-25 \$19.95  
MMM-30 \$19.95  
MMM-32 \$19.95  
MMM-10L \$16.95  
Additional Brackets Available  
**MASTER SUPER MARINE ANTENNA No. MMM-2750**  
The Master Super-Deluxe Marine Antenna in 12 ft. anodized 1 1/2" tubing. Coil section is 35" long. Impregnated coil covered with phenolic tubing, 8" obregias whip. Here is the ultimate in Marine Antennas!  
MMM-2750 Antenna & Solid Mounts . . . \$49.95  
Without Mounts . . . \$47.95  
103" WHIP CITIZEN BAND ANTENNA SPECIAL  
Complete set consists of Mount with Spring and Stainless Steel 103" whip.  
No. 102-132 \$9.95

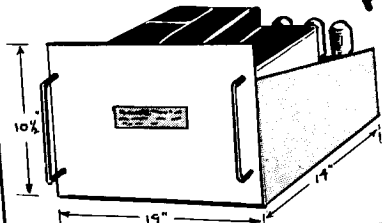
### EXTENSIONS — with 3/4"-24 thread, fits all mounts and coils

Model	Length	Net
72	88" 36"	Lower Section for all Band Antennas . . . \$4.95
90	92" 18 1/2"	In Chrome Plate . . . 5.25
88	90" 26"	Extension for 100 Series Whips . . . 3.95
115	92" 30 3/4"	Extension for 106 Series Whips . . . 3.50
115	92" 30 3/4"	Extension for 106 Series Whips . . . 4.50
120	120" 12"	Extension for AB Antenna (baked enamel) . . . 2.95
120	120" 12"	Chrome Base Section for AB Antenna . . . 3.50
180	180" 18"	Base Section for AB Antenna (baked enamel) . . . 3.25
180	180" 18"	Chrome Base Section for AB Antenna . . . 3.75
240	240" 24"	Base Section for AB Antenna (baked enamel) . . . 3.95
240	240" 24"	Chrome Base Section for AB Antenna . . . 4.50
85	85" 36"	Base Section for AB Antenna (baked enamel) . . . 4.95
85	85" 36"	Chrome Base Section for AB Antenna . . . 5.25

\*NOTE: Base Sections for use with ALL-BANDER Antenna Coils.

# COLUMBIA THE GEM OF THE ELECTRONIC INDUSTRY

## PN-12-B POWER SUPPLY LOWEST PRICE EVER! \$12.95



Power Supply p/o BC-640 Transmitter  
Input: 220/1/60 Output: 800V. DC. @ 350 MA  
& 395V. DC. @ 313 MA.  
Contains 4 each 5U4-G tubes, 1025 V.C.T. Plate  
Transformer, 2 each 9HY @ 270 MA Chokes,  
Fillament Transformer, also 1 each 10 MFD @  
600V. DC. & 1 each 10 MFD @ 1500V. DC.  
Oil Condensers.

PN-12-R Brand New \$12.95

## BARGAIN ASSORTMENT CORNER

Rottery Switch Assortment NEW	10 for	\$1.00
IF and RF Coils Assortment	10 for	1.49
Plastic Knobs Assortment	12 for	1.00
Tube Sockets Assortment NEW	12 for	1.00
Terminal Boards Assortment NEW	12 for	1.00
Toggle Switches Assortment Ex.Cond.	10 for	1.00
Micro Switches Assortment Ex.Cond.	10 for	1.00
Volume Controls Assortment	12 for	1.00
Waffer Switch Assortment	10 for	1.49
Tube Sheilds Assort. (minature)	12 for	1.00
R. F. Coils Assortment	12 for	1.00
Condencer Clamps	12 for	1.49
Selenium Rectifiers	10 for	2.95
Potentiometers	10 for	1.49
Wire wound resistors 5/25W.	10 for	1.49
Precision Resistor 1/2W to 1W	10 for	1.49
A. C. Cords- 6 ft.	7 for	1.00
Paper Capacitors	10 for	1.49
Mica	12 for	1.00
Relays-Mixed voltages	10 for	4.95
Electrolytic Capacitors	10 for	1.95
Ceramic Capacitors	12 for	1.00

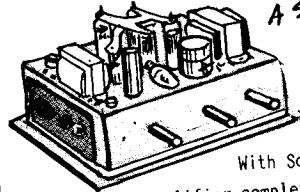
## BC-306 ANTENNA TUNER



Excellent for Ham or  
S.W.L. Loaded with  
parts, Viermer Dial,  
Hi-Powered Tap Switch  
Variometer.

\$1.95 ea.  
10 FOR \$17.50

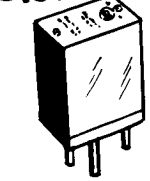
## REVERE 16MM SOUND PROJECTOR AUDIO AMPLIFIER



With Schematic  
10 W Audio Amplifier complete with  
1 - 12AU6, 1 - 12AX7 and 4 - 50B5.  
Has Volume control, Tone control,  
Phono and Microphone Input Jacks.  
Ex. Cond. \$9.95

A STEAL  
at  
9.95

## 100 KC CALIBRATOR CRYSTAL



100 KC Calibrator  
Crystal Model VC-5KS  
Ex. Cond. TESTED \$3.95 Ea.

TESTED

## BA-270/U DRY BATTERY

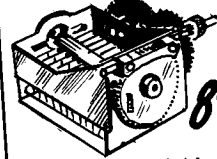


As is 75¢ 16 for \$8.00

Fits AN/PRC-6  
75c

Fine for  
Experiments!  
Puts out 90V,  
45V, 4 1/2 V & 1 1/2 V.  
Out of date,  
but has many  
uses.

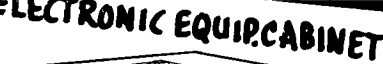
## ARC-5 XMTR VARIABLE CONDENSER



ARC-5 XMTR Variable  
Condenser with gear  
drive. 12-150 MMF  
ARC #7321  
NEW 89¢ 10/\$7.50

89c

## ULTRA VIOLET LAMP



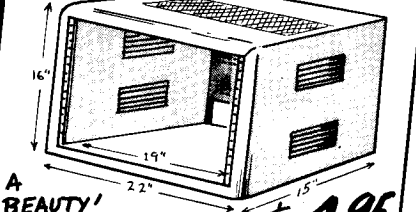
C-1 Ultra Violet Light Assembly on  
goose neck and mount. Perfect for  
rock hounds and naturelists. 110V  
Instructions for home use.  
New \$2.95

## Aircraft Light, 3 1/4" lens flush mounts in 4" hole.



Autp lamp 6/12/24 V. not  
included. Red, Amber or  
green lenses. Good for boats  
trailers etc. NEW 49¢  
Specify color 10/\$4.50

## ELECTRONIC EQUIP. CABINET

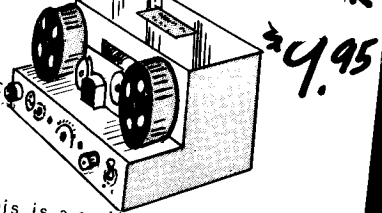


Made of Heavy Gage Steel. Blue  
enamel finish with Ultra Modern Design,  
rounded corners and air vents. Hold  
19"Wx14"H STD Panel (not supplied)  
Orig. cost \$28 Ex. Cond. Slight Scratches  
\$4.95

A BEAUTY!

\$4.95

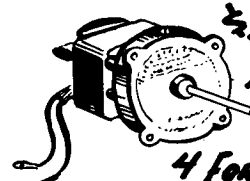
## IC/VRW-7 WIRE RECORDER



This is a small compact unit origi-  
nally used to record pilots voice  
during flight. Excellent for use  
around Ham Shack. Works on 28V. DC.  
@ 4 Amps. Has Carbon Mike Input.  
IC/VRW-7 Wire Recorder Ex. Cond. \$9.95  
Spare Reel Wire NEW \$1.49

\$4.95

## 12 RPM MOTOR BY MERKLE-KORFF

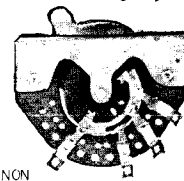


12 RPM MOTOR, Input 115/1/60  
MFG. by Merkle-Korff Gear Co.  
Model SG-15. Has loads of uses!  
Ex. Cond. \$2.95 4 for \$10.00

\$2.95

4 For \$10.00

## LEVER SWITCH

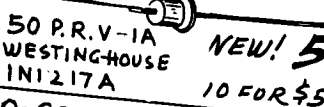


WAFER! 3 LOCK-  
ING POSITIONS-  
SINGLE POLE-  
3 THROWS- ONE NON  
SHORTING CONTACT-  
PHENOLIC BODY- OVER-  
ALL LENGHT 1 7/8" x 7/16" WIDE BY  
1 3/8" DIA. EXCLUDING LEVER-RECT  
TYPE LEVER 7/16" x 3/16" x 3/64"  
THICK- 4 SOLDER LUG TERMINALS-  
2 MTG. HOLES 10-32 SPACED 1-5/8"  
CENTER TO CENTER

25¢ ea.

10/\$1.50 100/\$10.00

## SILICON RECTIFIER



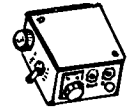
50 P.R.V-1A  
WESTINGHOUSE  
1N1217A  
0-999  
3-DIDGET  
VEEDER  
ROOT  
COUNTER

NEW! 59c ea.  
10 FOR \$5.00



SIZE  
1 1/2" x 1" x 1"  
89c ea.  
10/\$7.50

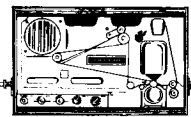
## BC-606 INTERPHONE CONTROL BOX



A Wealth of Parts  
Includes:  
Phone Jack and Mike Jack  
50 ~ Pot and Knob  
Terminal strip  
SPST H.O. Toggle SW.  
Steel Case

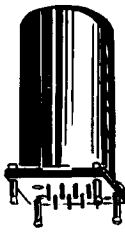
NEW! 29c ea.  
4/\$1.00

## TG-34 CODE PRACTICE SET



Learn to copy  
code- with  
speed. For Hams  
& schools. Com-  
plete, portable  
automatic unit  
for reproducing  
audibly code signals recorded in  
ink on paper tape. 15 pre-recorded  
tapes avail. For practicing  
"sending" by means of internal  
oscillator keyed by external hand  
key. Operates from 90-120V. or 190  
to 240V., 60 cy. AC. Units are  
used. Very good condition. \$29.95  
Shpg. Wt. 54 lbs. Also Available  
TG-10 Practice Set Code Tapes

## W.E. POLAR RELAY

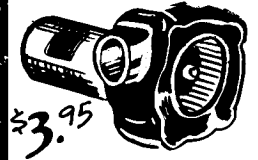


\$2.95

Western Electric  
Polar Relay used  
for RTTY  
W.E. #D163119-A

W.E. Polar Relay Ex. Cond. 89¢ Ea.  
4 for \$10.00

## 2" SQUIRREL CAGE BLOWER & MOTOR ASSEMBLY



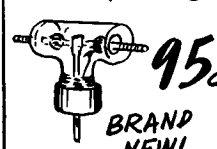
2500 RPM Ball Bearing  
motor 110/1/60AC. Has many  
uses, Ex. Cond. \$3.95

## BB-54 Willard Lead Acid Storage Battery.



2 V DC.  
Output- 20  
Amper Hour  
Capacity. Size  
4" x 3 1/2" x 5 1/2"  
Willard Cat.  
# ER-20-2  
Reg. Price  
\$8.50  
NEW!!! \$3.95  
Shipped Dry

## SPERTI VACUUM SPDT ANT-RELAY P/O AN/ART 13



95c  
BRAND  
NEW!

# TRANSFORMERS & FILTER REACTORS

POWER TRANSFORMERS	AUDIO TRANSFORMERS	FILAMENT TRANSFORMERS
<b>STANCOR # XAYT-2</b> Primary 115V, 60 CPS, 1 Ph Secondary #1 550 VCT @ 120 MA Secondary #2 6.3V @ 11 A Secondary #3 17V @ 1.2 A Secondary #4 5V @ 3 A Size 4"x4½"x6" Fully cased & potted std. Mtg. STANCOR # XAYT-2 NEW \$3.95	<b>20 WATT TCS MODULATION TRANSFORMER</b> MFG for Collins by Chicago & Stancor 6000 CT to 6000 Ohms 200-5000 CPS 3000V Test Will handle 30 watt of audio Size 3½"x2½"x4" Fully encased & potted Std. Mtg. 20 WATT TCS MODULATION TRANSFORMER 95¢ 10/\$7.50	<b>OSBORNE #5425B</b> Primary 115/230V 60 CPS, 1 Ph Secondary 6.3V @ 10 A Size 2½"x3"x5" Cased & potted OSBORNE # 5425B NEW \$2.95 10/\$25.00
<b>THORDARSON # T-49690</b> Primary 115V, 60 CPS, 1 Ph Secondary #1 1050V CT @ 100 MA Secondary #2 6.3V @ 3 A Secondary #3 6.3V @ 3 A Secondary #4 6.3V @ 2 A Secondary #5 5V @ 4 A Fully encased & potted Std. Mtg. # T-49690 \$ 3.95 10/\$35.00	<b>MINIATURE MATCHING TRANSFORMER</b> F.T. & R # 2396 150 & 150 to 600 Ohm 300 to 3500 CPS Size 1"x1"x2" MINIATURE MATCHING TRANSFORMER 59¢ ea. 10/\$5.00	<b>STERLING # ST-3215</b> Primary 115V, 60 CPS, 1 Ph Secondary 6.3 @ 6 A Size 3"x3"x3½" Open frame, Std. Mtg. STERLING # ST-3215 NEW \$2.49 10/\$20.00
<b>HALLICRAFTERS SX-28</b> Primary 115/230V, 50/60 CPS, 1 PH. Secondary #1 700 V CT @ 200 MA Secondary #2 6.3V @ 5A Secondary #3 5V @ 3A Size 4"x4½"x5½" Cased for Horiz. Mtg. HALLICRAFTERS SX-28 NEW \$4.95	<b>MINIATURE MATCHING TRANSFORMER</b> F.T. & R # 2397 150 & 150 to 320K Ohm 300-3500 CPS Size 1"x1"x2" MINIATURE MATCHING TRANSFORMER 59¢ ea. 10/\$5.00	<b>AMERTRAN # 28369</b> Primary 115V, 60 CPS, 1 Ph Secondary #1, 2.2 VCT @ 10 A Secondary #2 38 VCT @ 5 A Ins. 4000V Cased & shielded Std. Mtg. AMERTRAN # 28369 NEW \$5.95 10/\$45.00
<b>F.T. &amp; R. # 28999</b> Primary 115V, 60 CPS, 1 PH Secondary #1 130V @ 15 MA Secondary #2 130V @ 15 MA Secondary #3 6.3V @ ½A Size 2½"x3"x2½" Fully cased & potted std. Mtg. F.T. & R. # 28999 \$2.95	<b>TCS AUDIO OUTPUT</b> MFG by Stancor & Chicago for Collins 7500 to 600 Ohms 200-5000 CPS 1500V Test Size 2½"x3"x3" TCS AUDIO OUTPUT 89¢ ea. 10/\$7.50	<b>STANCOR # 302990</b> Primary 115V, 60 CPS, 1 Ph Secondary 34V & 22V @ 3 A Size 2½"x2½"x3½" Cased & potted STANCOR # 302990 \$3.95
<b>CALRAD C.I.T.</b> Primary 115V 60 CPS Secondary #1 130V @ 10 MA Secondary #2 6.3V @ 300 MA Size 2½"x1½"x2½" Fully encased std. Mtg. CALRAD C.I.T. \$1.95 10/\$17.50	<b>MAIL YOUR ORDER IN NOW!</b>	<b>SOLA CONSTANT VOLTAGE # 302007</b> Primary 95-125 or 190-250V, 50/60 CPS-1 Ph Secondary 6.3V @ 6V A Built in condenser Size 3½"x2½"x6" Fully cased & potted SOLA CONSTANT VOLTAGE # 302007 NEW \$4.95
<b>PLATE TRANSFORMERS</b>	<b>MINIATURE OUTPUT</b> RCA # B-462135 600 to 70 K.C.T. Ohms 150-5000 CPS Size 1" Dia. x 1½" H. MINIATURE OUTPUT 59¢ 10/\$5.00	<b>G.E. # 7467863</b> Primary 115V, 60 CPS, 1 Ph Secondary 7.5V @ 48 A Size 9"x7"x9" Open frame Std. Mtg. G.E. # 7467863 NEW \$14.95
<b>JUSTICA # K-301004</b> Primary 115V., 60 CPS, 1 PH. Secondary 4600 VCT. @ 250 MA Size 6½"x7¾"x6¾" Open frame Std. Mtg. ACUSTICA # K-301004 NEW \$9.95 2/\$19.00	<b>MINIATURE INPUT</b> R.C.A. # B-454830 100 to 125 K Ohms 250-4000 CPS Size 1" Dia. x 1½" H. MINIATURE INPUT 59¢ ea. 10/\$5.00	<b>CALRAD FT-6</b> Primary 115V, 60 CPS, 1 Ph Secondary 6.3V @ 1.5 A Size 1½"x2½"x1½" Horiz. Mtg. CALRAD FT-6 \$1.69 10/\$15.00
<b>CHICAGO # TR-1040</b> Primary 115V, 60 CPS, 1 PH Secondary 4700V. VCT @ 400 MA Size 9½"x9"x9" Fully cased std. Mtg. CHICAGO # TR-1040 NEW \$29.95	<b>AUDIO OUTPUT</b> A.R.C. # 16154 8 K to 600 Ohms Size 1½" Dia. x 2" H. AUDIO OUTPUT 69¢ 10/\$6.00	<b>MISC. TRANSFORMERS</b>
<b>AKUSTICIA # K-300003</b> Primary 220/440V., 60 CPS, 1 PH Secondary 8500 VCT @ 750 MA Size 12"x11"x11" Open frame std. Mtg. AKUSTICIA # K-300003 Ex. Cond. \$49.95	<b>HADLEY # 10461</b> Primary 2500 Ohm Secondary 10 K Ohm Size ¾"x¾"x1½" Fully encased & potted HADLEY # 10461 95¢ 10/\$8.00	<b>ISOLATION TRANSFORMER</b> TRIAD # N-55M 115 to 115V 60 CPS, 1 Ph 250V A Size 4½"x4½"x4½" Fully encased Std. Mtg. ISOLATION TRANSFORMER Ex. Cond. \$4.95
<b>IF TRANSFORMERS</b>	<b>MINIATURE TRANSISTOR AUDIO TRANSFORMERS</b> Highest quality import at fantastic savings. Miniature size: ¾"x¾"x1½". Color code wire leads. Circuit diagram included. Output Trans 600-0-600 ohms to 3.2 ohms CR-40 Input " 200 K ohms to 1 K ohms CR-50 Input " 20 K ohms to 1 K ohms CR-60 Driver " 10 K ohms to 1 K-0-1K ohms CR-70 Output " 250-0-250 ohms to 3.2 ohms CR-80 89¢ 10/\$7.50	<b>POWER &amp; VIBRATOR TRANSFORMER</b> EICO # 10826 Primary #1 110/220V 60 CPS, or 12V Vibrator Secondary #1 160V @ 10 MA Secondary #2 6.3V @ 750 MA Secondary #3 9.2V @ 500 MA Secondary #4 110V @ 10 MA Size 3"x3½"x3½" Fully encased & potted Std. Mtg. POWER & VIBRATOR TRANSFORMER \$2.95
<b>85 KC p/o BC-453 - \$1.95 3 for \$5.00</b> <b>92 KC p/o BC-344 - 1.49 3 for 4.00</b> <b>385 KC p/o BC-669 - .95 3 for 2.50</b> <b>1415 KC p/o BC-454 - .95 3 for 2.50</b> <b>2830 KC p/o BC-455 - .95 3 for 2.50</b> <b>4.3 mc p/o RT-66/GRC - .59 10 for 5.00</b> <b>15 mc p/o A.R.C.R-15&amp;19 .95 3 for 2.50</b>	<b>BRIGHT LAB # PK-1 \$1.29</b> 32 H @ 40 MA 540 Ohm Res 1500V. Ins. Size 2½"x2½"x3½" Fully encased & potted Std. Mtg.	<b>BC-1335 VIBRATOR POWER TRANSFORMER</b> Primary #1 7V AC Primary #2 7V AC Secondary # 227 VCT @ 75 MA Size 3½"x3"x3½" BC-1335 VIBRATOR POWER TRANSFORMER \$2.95
<b>CHICAGO # 678 MI32A</b> 6 H. @ 150 MA 100 Ohm Res 2500V Test Size 3½"x4"x4" Fully encased & potted-top term. 95¢ 10/\$7.50	<b>THORDARSEN # T-75C51 \$2.95 ea.</b> 13 H @ 250 MA 10 for \$25.00	<b>F.T. &amp; R. # 2497 DISCRIMINATOR</b> Primary #1 1.6 H @ 8 MA Primary #2 1.6 H @ 8 MA Secondary #1 1.6 H @ 8 MA Secondary #2 1.6 H @ 8 MA Size 1½" Dia. x 3½" Fully encased & potted F.T. & R. # 2497 DISCRIMINATOR 95¢ 10/\$7.50
<b>WHEELER W-4739</b> 20 H @ 45 MA 308 Ohm Res 800V Test Size 2½"x2R3" Fully encased & potted Std. Mtg. EACH \$1.19	<b>GRAMER # 113X19 \$1.49 10/\$12.50</b> 10 H @ 150 MA 150 Ohm Res. 1500V test Size 3½"x3"x4½" Fully encased & potted	<b>BFO OSCILLATOR TRANS.</b>
<b>TRIAID # C-31-A \$2.95 10/\$25.00</b> 5-25 H @ 200-20 MA 150 Ohm Res. 2500V test Size 3½"x3"x3½" Fully encased std. mtg.	<b>KENYON # T-152 \$1.49 10/\$12.50</b> 5H @ 200 MA 100 Ohm Res. 2500V test Size 3"x2½"x4" Fully encased, & potted	<b>85 KC p/o BC-453 - .95 3 for \$2.50</b> <b>455 KC p/o Super Pro- 1.49 3 for 4.00</b> <b>1415 KC p/o BC-454 - .95 3 for 2.50</b> <b>2830 KC p/o BC-455 - .95 3 for 2.50</b>

## FILTER REACTORS

CHICAGO # 678 MI32A  
6 H. @ 150 MA  
100 Ohm Res 2500V Test  
Size 3½"x4"x4"  
Fully encased & potted-top term.  
95¢ 10/\$7.50

WHEELER W-4739  
20 H @ 45 MA  
308 Ohm Res 800V Test  
Size 2½"x2R3"  
Fully encased & potted Std. Mtg.  
EACH \$1.19

BRIGHT LAB # PK-1 \$1.29  
32 H @ 40 MA  
540 Ohm Res 1500V. Ins.  
Size 2½"x2½"x3½"  
Fully encased & potted Std. Mtg.

6 H @ 350 MA  
200 Ohms 2500V Ins.  
Small Motors # 13510  
Size 4½"x3½"x5"  
Fully encased & potted Std. Mtg.  
\$3.95

TRIAID # C-31-A \$2.95 10/\$25.00  
5-25 H @ 200-20 MA  
150 Ohm Res. 2500V test  
Size 3½"x3"x3½"  
Fully encased std. mtg.

THORDARSEN # T-75C51 \$2.95 ea.  
13 H @ 250 MA  
10 for \$25.00

GRAMER # 113X19 \$1.49 10/\$12.50  
10 H @ 150 MA  
150 Ohm Res. 1500V test  
Size 3½"x3"x4½"  
Fully encased & potted

KENYON # T-152 \$1.49 10/\$12.50  
5H @ 200 MA  
100 Ohm Res. 2500V test  
Size 3"x2½"x4"  
Fully encased, & potted

BC-1335 VIBRATOR POWER TRANSFORMER \$2.95  
Primary #1 7V AC  
Primary #2 7V AC  
Secondary # 227 VCT @ 75 MA  
Size 3½"x3"x3½"

F.T. & R. # 2497 DISCRIMINATOR 95¢ 10/\$7.50  
Primary #1 1.6 H @ 8 MA  
Primary #2 1.6 H @ 8 MA  
Secondary #1 1.6 H @ 8 MA  
Secondary #2 1.6 H @ 8 MA  
Size 1½" Dia. x 3½"  
Fully encased & potted

BFO OSCILLATOR TRANS.

85 KC p/o BC-453 - .95 3 for \$2.50  
455 KC p/o Super Pro- 1.49 3 for 4.00  
1415 KC p/o BC-454 - .95 3 for 2.50  
2830 KC p/o BC-455 - .95 3 for 2.50

**THESE BUYS WILL GO FAST. ORDER NOW!**

# AUDIO CONNECTORS

## MINIATURE PLUGS & JACKS



Miniature plug & Jack two circuit precision cord connectors. For use with T-30, T-45 & H-46/UR Microphones.

JK-48 Jack	Net 49¢
PL-292	Net 95¢
PL-291	Net 95¢

## STANDARD PHONE PLUGS AUDIO PLUGS



Standard Phone Plugs two circuit Audio Plug

BP-31 Black plastic shell	NEW 29¢
BP-31 Red plastic shell	" 29¢
BP-31 Chrome metal shell	" 49¢
PL-55 Military Black plastic shell"	59¢

## STANDARD AUDIO PHONE JACKS



CC-35 closed circuit Jack	Net 29¢
JC-34 open circuit Jack	Net 19¢

## JK-26 CABLE CONNECTOR



JK-26 Female 2 circuit Cable Connector for PL-54, PL-354 Plugs.

JK-26	EACH	Net 39¢
-------	------	---------

## PL-68 MIKE PLUG



PL-68 3 circuit microphone plugs. Used on all single button carbon mikes to fit 3/16" jacks, as JK-33 etc. PL-68 Plug

Net. 79¢

## JK-33 JACK



JK-33 3 circuit panel Jack for PL-68 plug

JK-33 Jack	Net	49¢
------------	-----	-----

## PL-54 PLUG



This short plug is designed to fit the JK-26 Cable Jack.

PL-54	Net	49¢
-------	-----	-----

## SCREW ON MIKE PLUG and JACK



PL-10 screw on standard mike plug.

PL-10	NEW	39¢
SK-10 Panel Jack	"	29¢

## PHONO PLUGS



Single Hole Mtd. Jack	39¢
Shielded Phono Cable Plug	29¢
Shielded Phono Cable Jack	29¢

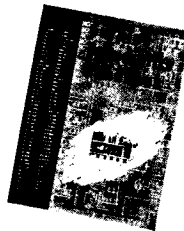
## R C A TYPE PHONO CONNECTORS



10¢ PLUG ea.	
10¢ JACK ea.	
	10 for 75¢

# CQ Surplus SCHEMATICS HANDBOOK

This is a book literally loaded with schematics for all the currently popular pieces of surplus gear. Most amateurs are well aware of the problems encountered in purchasing seemingly inexpensive surplus units, only to find that no schematic diagram is available. Trying to figure out the circuitry cold turkey can be many times more difficult than the most involved puzzle, and purchasing a single instruction book can run as high as \$3.50. Why knock yourself out when you can have a book with complete coverage on hand in your library?



## LIST OF CONTENTS:

APA-38	BC-610	G0-9	SCR-300
APN-1	BC-611	GRR-5	SCR-506
APR-1	BC-620	I-122	SCR-522
APR-2	BC-640	I-177	SCR-578
APS-13	BC-645	I-208	SCR-585
ARB	BC-652	JT 350-A	SCR-593
ARC-1	BC-653	LM	SCR-608
ARC-3	BC-659	MARK 11	SCR-610
ARC-4	BC-683	MD-7	SCR-624
ARC-5	BC-684	MN-26	SCR-628
ARC-5 VHF	BC-728	PRC-6	SPR-1
ARJ-ARK-ATJ	BC-733	PRS-3	SPR-2
ARN-7	BC-745	R-174	TBS
ARR-2	BC-779	RAK	TBW
ART-13	BC-794	RAL	TBX
ASB	BC-906	RAO-7	TBY
AS-81-GR	BC-969	RAS	TCK
ATK	BC-1000	RAX	TCS
BC-AR-231	BC-1004	RBH	TG-34
BC-189	BC-1023	RBL	TS-34/AP
BC-191	BC-1206	RBM	TS-251/UP
BC-221	BC-1335	RBS	VRC
BC-312	BN	RC-56	VVX-1
BC-314	BP	RC-57	
BC-342	C3	RDC	
BC-344	CRC-7	RDR	
BC-348	CRO-208	RDZ	
BC-375	CRT-3	RU-16	
BC-438	DAE	SCR-274	
BC-474A	F3	SCR-284	
BC-603	GF-11	SCR-288	

Published by Cowan Publishing Corp.

**ONLY \$2.50 POST PAID**

## MINIATURIZED CAPACITOR KITS

CALRAD Miniature Electric Capacitor kit Upright M<sup>q</sup>.

10 ea. 10MFD @ 15WV.
5 ea. 6MFD @ 15 WV.
5 ea. 50MFD - 15WV.
5 ea. 30MFD - 15WV.

**KIT OF 30 PIECES only \$3.95**



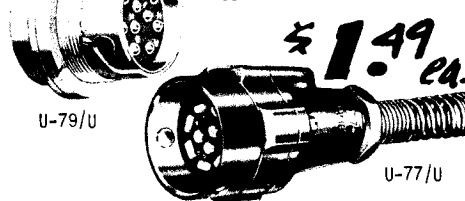
CALRAD M.C.K. By-Pass

5 ea. .1 MFD 100WV
5 ea. .04 " "
10 ea. .01 " "
10 ea. .005" 100 V
5 ea. .02 " 100 V
5 ea. .001 " 100 V

**KIT OF 50 PIECES only \$3.95**



## LATE MODEL PRC & GRC AUDIO CONNECTORS



U-79/U

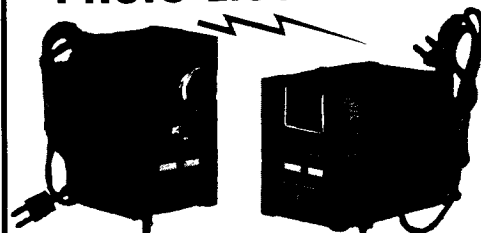
U-77/U

U-77/U. 10 contact male plug Ex. Cond.

U-79/U 10 contact female receptacle EX. Cond.

**\$1.49 ea.**

# TRAN-SO-CEL Photo Electric Cell



**NEW (MODEL IR-25) No Tubes No Transisto.**

- MISSILE TYPE RELAY
- SPECIAL OPTICAL FILTER
- HEAVY DUTY TRANSFORMER

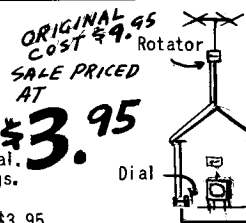
One light source, one photo cell receiver, two brackets, instructions and guarantee card. Wt. 7 lbs. per set.

Guaranteed one full year from date of installation (except light bulb)

TRAN-SO-CEL model IR-25- with light source

Loud-Chime Set - Net NEW \$34.95 2.95

## HAND POWERED ANTENNA ROTATOR for TV, & UHF ANTENNAS



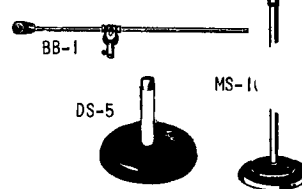
**ORIGINAL 45 COST \$9.95 SALE PRICED AT \$3.95**

Calibrated Turner Dial. Rotator Box and fittings.

Tele-Turner \$3.95

## MICROPHONE ACCESSORIES

### ATLAS MIKE STANDS



### DESK STAND

Atlas-DS-5 microphone stand for tape recording or communications. Base is of cast aluminum, 4 1/4" diam.; fitted with chromed 5/8" upright with standard thread. Overall height 24 inches.

DS-5 Atlas NEW \$1.89

### BB-1 MIKE BOOM

BB-1 "Baby Boom" Attachment-Easily attached to any mike stand and locked in any position. Boom length 32" chrome plated. Castings in gun metal shrivel. 5/8"-27 threads.

BB-1 NET EACH \$4.49

### MS-10 FLOOR STAND

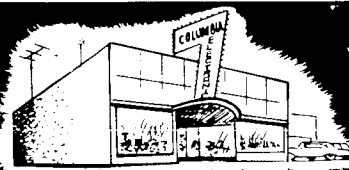
Atlas MS-10 a 35 to 64" adjustable height floor stand with a sturdy 10" diameter base features a full grip clutch for radio adjustments. Wt.: 9 lbs.

Atlas MS-10 Stand NET \$5.85

### AUDIO & MICROPHONE CABLE 100 FT. COIL \$2

Plastic covered light weight single conductor shielded Audio Cable.

100 ft. Coil NET \$2.95 per 100 ft.



# COLUMBIA Electronic Sales, INC.

4365 WEST PICO BOULEVARD • LOS ANGELES 19, CALIFORNIA • WEBSTER 8-3731

CABLE ADDRESS "COLECTRON" - OPEN MONDAY AND FRIDAY NIGHTS "TIL 9:00 P.M."

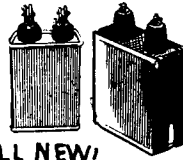


# OIL FILLED CAPACITOR

All American MFG  
G.E.-Sprague, CD, ect.

ALL NEW!

Cap	Working Voltage	Unit Price	10-25 Price ea.
.05 MFD	1200 V	.89	.79
.05 "	2000 V	.99	.85
.5 "	2000 V	.99	.85
1 "	3000 V	1.49	1.25
2 "	1000 V	1.00	.85
2 "	2000 V	1.49	1.25
4 "	600 V	.75	.65
4 "	1000 V	.95	.85
4 "	2000 V	1.89	1.70
4 "	2500 V	2.95	2.49
4 "	3000 V	3.95	3.49
6 "	600 V	.89	.79
8 "	600 V	.95	.85
10 "	600 V	1.25	1.15
12 "	1000 V	1.95	1.89



# BRAND NEW! U.S. MFG.

G.E. - TUNGSOE - HUDSON - WESTINGHOUSE

## MINIATURE LAMPS

### (A) Tubular—Min. Screw Base

No.	Volts	Amps	YOUR COST for 10
41	2.5	0.50	\$0.92
40	6.3	0.15	.92
46	6.3	0.25	.92
48	2.	0.06	.92



### (B) Tubular—Min. Bayonet Base

No.	Volts	Amps	YOUR COST for 10
43	2.5	0.50	.92
44	6.3	0.25	.92
49	2.	0.06	.92
47	6.3	0.15	.92
1815	12	0.20	1.22
1829	28	.07	2.14
1847	12	0.5	1.22
1891	12		1.04
1490	3.2	0.16	1.04



### (C) Round—Min. Screw Base

50	6.8	0.20	.92
----	-----	------	-----



### (D) Round—Min. Bayonet Base

53	12	1CP	.92
51	6.8	0.20	.92
55	6.8	0.40	.92
57	14	2CP	.92



### (E) Sub-Min Flange Base

328	6.	.2	.70
327	28.	.08	.92



### Flashlight Bulbs

No.	Volts	Amps	Your Cost Each for 10
222	2.2	0.25	1.04
14	2.5	0.30	1.04
PR2	2.4	0.50	1.22
PR3	3.57	0.50	1.22



## NEON LAMPS

### Candelabra Screw Base

NE45 1/4 .79 ea.

### Double Contact Candelabra Bay. Base Resistorless Type

NE32 1 1.11 ea.

NE48 1/4 .85 ea.

### Miniature Bayonet Base Type

Requires 200 M ohms for NE51 and 56 M ohms for NE51H high-brightness type to use on 110 volts.

NE51 1/25 .20 ea.

NE51H .23 ea.

### NE2 1/25 Watt Neon

Unbused, with 2 wire leads. Bulb is 1/4" dia. 1 1/2" long. Requires 200,000 ohm series resistor for 105-125 V. operation.

10 For 88c

### 6S6 Candelabra Base

110-120 V. Bulb 6 watts, clear glass, candelabra base. For indicator and other needs.

Net Each 21c 10 Lots 19c

100 Lots, Each 17c

Note: Deduct 10% from above 10 Lot prices by buying 100 or more of a type either Pilot or Flashlight bulbs.

Minimum order box of 10 lamps per type.

SPACE DOES NOT PERMIT LISTING ALL THE MANY DIFFERENT TYPES OF MINIATURE LAMPS. PLEASE WRITE FOR INFORMATION AND PRICES ON ANY UNLISTED LAMPS YOU MAY NEED.

## CALRAD TS-10 SPST SWITCH



Bakelite case, bat handle, with chrome On-Off plate. Solder lug terminals. 125V-3A. 1 1/4" x 5/8" x 1" deep to top of 3/8" bushing. Calrad TS-10 New 29¢ 10/\$2.50

## CALRAD DPDT SWITCH



Bat handle switch with chrome On-Off plate. Bakelite case, six solder terminals. 125V, 3A. 1 1/4" x 3/4" x 1 1/4" deep. 3/8" bushing. TS-12 NEW 49¢ 10/\$4.50

## CALRAD TS-16 DPDT SWITCH



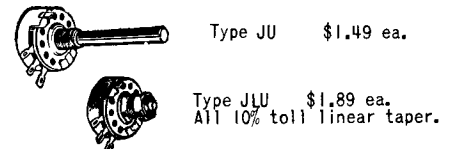
Bat handle center-off toggle switch with bakelite case. Red and black On-Off plate. Six screw terminals. 1-3/8" x 3/4" x 1-3/8" deep. 125V-6 amp, 250V-3 amp rating. 3/8" bushing. TS-16 NEW 69¢ 10/\$5.00

## TV-300 MINIATURE CONTROLS WITH DPST. SWITCH

Cat. No.	Value	Specify
TV-300	5K	Resistance
TV-300	10K	
TV-300	100K	
TV-300	500K	
TV-300	1 Meg.	

Designed to provide extremely smooth, quiet operation. Have semi-Log (audio) taper. Fits 5/16" hole in panels up to 1/2" thick, 1/4" shaft, 3/8" long, diameter 3/8" x 7/16" deep. Calrad TV-300 NEW 89¢ 10/\$7.50

## ALLEN-BRADLEY TWO WATT COMPOSITION POTENTIOMETERS



Type	Value	Price
Type JU		\$1.49 ea.
Type JLU		\$1.89 ea.

All 10% toll linear taper.

### STOCK VALUES

OHMS	5 K	10 K	2.5 Meg.
50			
100			
250			
500			
1000			
2500			

CS-1 Switch for above 59¢ WRITE FOR QUANTITY QUOTE

## Allen Bradley Resistors

10% TOLERANCE RESISTORS			
Ohms	Ohms	Ohms	Mega
10	220	4700	0.1
12	270	5600	0.12
15	330	6800	0.15
18	390	8200	0.18
22	470	10,000	0.22
27	560	12,000	0.27
33	680	15,000	0.33
39	820	18,000	0.39
47	1000	22,000	0.47
56	1200	27,000	0.56
68	1500	33,000	0.68
82	1800	39,000	0.82
100	2200	47,000	1.0
120	2700	56,000	1.2
150	3300	68,000	1.5
180	4700	82,000	1.8

Price: 1/2 watt 10¢ each  
1 watt 15¢ each  
2 watt 20¢ each  
SPECIFY VALUES REQUIRED!  
WRITE FOR QUANTITY QUOTE!

## VACUUM CAPACITOR

Jennings, Eimac & others - All New

12 MMF	20 KV	\$5.95
50 "	5 KV	2.95
50 "	7.5 KV	3.95
50 "	32 KV	6.95

## ELECTROLYTIC CAPACITOR

STANDARD BRANDS  
All Round Can Type.

1000 MFD @ 15V.W. DC.	round can sprague	29¢ 10/\$2.00
2000 " @ 15V.W. DC.	octal plug in sprague	39¢ 10/\$3.00
30-30 MFD @ 150V.W. DC.	twist prong	39¢ 10/\$3.00
40-40-40 MFD @ 150 V.W. DC.	octal. plugin	49¢ 10/\$4.00

GLASSMIKE CAPACITOR (for R.F. applications)  
.04 MFD @ 15 K.V.C.W. Glassmike # ASG403-15  
\$2.49 10/\$20.00

## PILOT LAMP HOLDER 49¢ ea.

For use with T-3 3/4 bulb, miniature bayonet base incandescent lamp, for 2-55 volt circuits. Replaceable from front of panel. Choice of lens, red, green or clear plastic. PL-814 NEW 49¢ ea. 10/\$4.50

## LAMP BASES

#1 BAKELITE BASE  
Double contact candelabra bayonet. Fits neon lamps NE36, NE32, NE48. 39¢ ea. 10/\$2.95

#2 SOCKET  
Double contact candelabra for type 991 VR tube or neon lamps. Also fits standard auto lamps. 39¢ ea. 10/\$2.95

# ALPHA MAGNET WIRE



"ALMAG" MAGNET WIRE. (MIL-W-583A). For frequency coils, transformers, chokes, speaker field coils, tuners, armatures, short wave coils, etc. Single conductor copper with continuous insulating film of enamel.

PLAIN ENAMEL (PE)				HEAVY FORMVAR (HF) Baked varnish on vinyl resin			
No.	Size	1/2lb	1/2lb 1 lb	No.	Size	1/4lb	1/2lb 1 lb
PE-44	44	3.09	5.96 11.70	PE-26	26	.45	.84 1.64
PE-42	42	2.22	4.22 8.21	PE-24	24	.44	.83 1.55
PE-40	40	.96	1.91 3.74	PE-22	22	.44	.81 1.52
PE-38	38	.72	1.41 2.76	PE-20	20	.39	.75 1.46
PE-36	36	.60	1.19 2.28	PE-18	18	.39	.74 1.38
PE-34	34	.56	1.07 2.04	PE-16	16	.42	.74 1.38
PE-32	32	.51	1.01 1.88	PE-14	14	.42	.74 1.38
PE-30	30	.48	.93 1.76	PE-12	12	.42	.72 1.38
PE-28	28	.47	.90 1.71	PE-10	10	.42	.74 1.38
HF-44	44	3.74	7.23 13.83	HF-26	26	.60	1.19 2.25
HF-42	42	2.22	4.25 8.01	HF-24	24	.59	1.10 2.09
HF-40	40	1.70	3.21 6.20	HF-22	22	.56	1.05 1.98
HF-38	38	1.28	2.48 4.68	HF-20	20	.54	1.02 1.82
HF-36	36	1.07	2.10 4.11	HF-18	18	.51	.98 1.74
HF-34	34	.92	1.82 3.53	HF-16	16	.51	.87 1.58
HF-32	32	.84	1.62 3.14	HF-14	14	.51	.87 1.58
HF-30	30	.71	1.37 2.63	HF-12	12	.51	.87 1.58
HF-28	28	.68	1.32 2.49	HF-10	10	.51	.87 1.58

# NEW SURPLUS CRYSTALS

All Crystals New and Surplus are checked for Frequency and Activity with Berkeley Frequency Meter and are Fully Guaranteed.

## BC-604

XMTR CRYSTALS

## FT-241

FUNDAMENTAL FREQUENCIES

Fit same spacing as socket FT-243.

PIN SPACING

69¢ ea.

1/4"

Chan- nel	Crystal Fre- quency (KC)	Output Fre- quency (MC)	Chan- nel	Crystal Fre- quency (KC)	Output Fre- quency (MC)	Chan- nel	Crystal Fre- quency (KC)	Output Fre- quency (MC)	Chan- nel	Crystal Fre- quency (KC)	Output Fre- quency (MC)	Chan- nel	Crystal Fre- quency (KC)	Output Fre- quency (MC)	Chan- nel	Crystal Fre- quency (KC)	Output Fre- quency (MC)
0	370.370	20.0	14	396.296	21.4	28	422.222	22.8	42	448.148	24.2	56	474.074	25.6	72	503.704	27.2
1	372.222	20.1	15	398.148	21.5	29	424.074	22.9	43	450.000	24.3	57	475.926	25.7	73	505.556	27.3
2	374.074	20.2	16	400.000	21.6	30	425.926	23.0	44	451.852	24.4	58	477.778	25.8	74	507.407	27.4
3	375.926	20.3	17	401.852	21.7	31	427.778	23.1	45	453.704	24.5	59	479.630	25.9	75	509.259	27.5
4	377.778	20.4	18	403.704	21.8	32	429.630	23.2	46	455.556	24.6	60	481.481	26.0	76	511.111	27.6
5	379.630	20.5	19	405.556	21.9	33	431.481	23.3	47	457.407	24.7	61	483.333	26.1	77	512.963	27.7
6	381.481	20.6	20	407.407	22.0	34	433.333	23.4	48	459.259	24.8	62	485.185	26.2	78	514.815	27.8
7	383.333	20.7	21	409.259	22.1	35	435.185	23.5	49	461.111	24.9	63	487.037	26.3	79	516.667	27.9
8	385.185	20.8	22	411.111	22.2	36	437.037	23.6	50	462.963	25.0	64	488.889	26.4			
9	387.037	20.9	23	412.963	22.3	37	438.889	23.7	51	464.815	25.1	65	490.741	26.5			
10	388.889	21.0	24	414.815	22.4	38	440.741	23.8	52	466.667	25.2	66	492.593	26.6			
11	390.741	21.1	25	416.667	22.5	39	442.593	23.9	53	468.519	25.3	67	494.444	26.7			
12	392.593	21.2	26	418.519	22.6	40	444.444	24.0	54	470.370	25.4	68	496.296	26.8			
13	394.444	21.3	27	420.370	22.7	41	446.296	24.1	55	472.222	25.5	71	501.852	27.1			

NOTE  
These two ranges may be  
interchanged for closer  
side bands.

## LOW FREQUENCIES CRYSTALS

370KC to 540KC in FT241 Holders

SINGLE SIDE BAND  
LOW FREQUENCY OSCILLATORS  
FOR LATTICE NETWORKS  
MARKERS — ETC.

All crystals listed are fu-  
ntal frequencies in Kilocycles.  
Channels 0 to 79 and channels 270  
to 289 comprise sets of 80 and  
120 crystals.

49¢ ea.

ORDER BY CHANNEL NUMBER AND  
FREQUENCY YOUR CHOISE 49¢ EACH

2 CRYSTALS FIT STD. OCTAL SOCKET  
PIN SPACING .486 PIN DIA. .093

## NOTE ON ALL SURPLUS CRYSTALS

INDICATE 2ND CH  
SUBSTITUTIONS M.  
BE NECESSARY.

## BC-684 XMTR

Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.
270	375.000	27.0	294	408.333	29.4	318	441.666	31.8	345	479.166	34.5	371	515.277	37.1
271	376.388	27.1	295	409.722	29.5	319	443.055	31.9	346	480.555	34.6	372	516.666	37.2
272	377.777	27.2	296	411.111	29.6	320	444.444	32.0	347	481.944	34.7	373	518.055	37.3
273	379.166	27.3	297	412.500	29.7	321	445.833	32.1	348	483.333	34.8	374	519.444	37.4
274	380.555	27.4	298	413.888	29.8	322	447.222	32.2	349	484.722	34.9	375	520.833	37.5
275	381.944	27.5	299	415.277	29.9	323	448.611	32.3	350	486.111	35.0	376	522.222	37.6
276	383.333	27.6	300	416.666	30.0	324	450.000	32.4	351	487.500	35.1	377	523.611	37.7
277	384.722	27.7	301	418.055	30.1	325	451.388	32.5	352	488.888	35.2	378	525.000	37.8
278	386.111	27.8	302	419.444	30.2	326	452.777	32.6	353	490.277	35.3	379	526.388	37.9
279	387.500	27.9	303	420.833	30.3	330	458.333	33.0	354	491.666	35.4	380	527.777	38.0
280	388.888	28.0	304	422.222	30.4	331	459.722	33.1	355	493.055	35.5	381	529.166	38.1
281	390.277	28.1	305	423.611	30.5	332	461.111	33.2	356	494.444	35.6	382	530.555	38.2
282	391.666	28.2	306	425.000	30.6	333	462.500	33.3	357	495.833	35.7	383	531.944	38.3
283	393.055	28.3	307	426.388	30.7	334	463.888	33.4	358	497.222	35.8	384	533.333	38.4
284	394.444	28.4	308	427.777	30.8	335	465.277	33.5	359	498.611	35.9	385	534.722	38.5
285	395.833	28.5	309	429.166	30.9	336	466.666	33.6	361	501.388	36.1	386	536.111	38.6
286	397.222	28.6	310	430.555	31.0	337	468.055	33.7	362	502.777	36.2	387	537.500	38.7
287	398.611	28.7	311	431.944	31.1	338	469.444	33.8	363	504.166	36.3	388	538.888	38.8
288	400.000	28.8	312	433.333	31.2	339	470.833	33.9	365	506.944	36.5	389	540.277	38.9
289	401.388	28.9	313	434.722	31.3	340	472.222	34.0	366	508.333	36.6			
290	402.777	29.0	314	436.111	31.4	341	473.611	34.1	367	509.722	36.7			
291	404.166	29.1	315	437.500	31.5	342	475.000	34.2	368	511.111	36.8			
292	405.555	29.2	316	438.888	31.6	343	476.388	34.3	369	512.500	36.9			
293	406.944	29.3	317	440.277	31.7	344	477.777	34.4	370	513.888	37.0			

All FT-241 listed  
are "CT" or "DT" cut  
tolerance .02%

## BRAND NEW CRYSTALS MFG. BY U.S. CRYSTALS

### NEW CITIZEN BAND CLASS D CRYSTALS \$2.50 ea.

3rd Mode Overtones --- .005 Tol. HC-6/U .050 and .093 Pins

Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.
1	26.965MC	5	27.015MC	9	27.065MC	13	27.115MC	17
2	26.975MC	6	27.025MC	10	27.075MC	14	27.125MC	18
3	26.985MC	7	27.035MC	11	27.085MC	15	27.135MC	19
4	27.005MC	8	27.055MC	12	27.105MC	16	27.155MC	20

### 2ND HARMONIC --- .005 Tol. \*HC6U --- .050 and .093 Pins \$2.50 ea.

Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.
1	13.4825MC	6	13.5125MC	11	13.5425MC	16	13.5725MC	21
2	13.4875MC	7	13.5175MC	12	13.5525MC	17	13.5825MC	22
3	13.4925MC	8	13.5225MC	13	13.5575MC	18	13.5875MC	
4	13.5025MC	9	13.5325MC	14	13.5625MC	19	13.5925MC	
5	13.5075MC	10	13.5375MC	15	13.5675MC	20	13.6025MC	

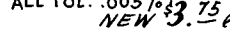
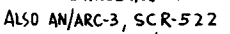
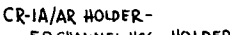
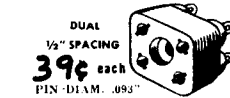
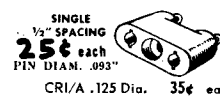
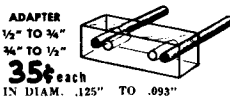
ALL NEW!

### FT-243 \$2.00 ea. 4TH HARMONIC --- .005 Tol. HC-6/U \$2.50 ea.

Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.	Chan- nel	Crystal Freq. KC.	Out- put MC.
1	6741.25KC	6	6756.25KC	11	6771.25KC	16	6786.25KC	21
2	6743.75KC	7	6758.75KC	12	6773.75KC	17	6788.75KC	22
3	6746.25KC	8	6761.25KC	13	6776.25KC	18	6791.25KC	
4	6751.25KC	9	6766.25KC	14	6781.25KC	19	6796.25KC	
5	6753.75KC	10	6768.75KC	15	6783.75KC	20	6801.25KC	

ALL NEW!

### NEW CRYSTAL SOCKETS AND ADAPTERS



Write for Special Frequencies  
and Holders not listed.

## AMATEUR CRYSTALS

(.05% Tolerance in FT243 Holders)

- 80 Meters 3500 to 4000 KC
- 40 Meters 7000 to 7300 KC
- 20 Meters 14,000 to 14,350 KC
- 15 Meters 21,000 to 21,450 KC
- 11 Meters 26,960 to 27,230 KC
- 10 Meters 28,000 to 29,700 KC
- 6 Meters 50 to 54 MC
- 2 Meters 144 to 148 MC

\$1.50 ea. New ea. \$1.50

All amateur Band Crystals are Lapped  
and Etched to Frequencies. Supplied in  
FT-243 holders. Can be supplied in MC7,  
FT-171 or DC-34 holders at extra cost  
of 25 cents per crystal.

## MARKER CRYSTALS

Frequency	Tol.	Holder	Pr.
100 KC	.01%	FT-249	\$4.95
200 KC	.1%	FT-241	1.95
455 KC	.1%	FT-241	1.95
1000 KC	.005%	HC-6/U	4.95
5000 KC	.005%	FT-243	2.95
8000 KC	.005%	FT-243	2.95
10.7 MC	.005%	FT-243	2.95

## MARINE BAND CRYSTALS

FT-243-DC-34-HC-6/U All .005% Tol  
Any Frequency \$3.50

### HC-6/U OVERTONES - AVAILABLE NOW! - OVERTONES

Modernize your equipment with our new type of  
Hermetically Sealed plated crystals. The latest  
thing in holders. Available in HC6/U in all Novices  
and Ham Bands. Also available in Special Fre-  
quencies, Shipboard and Aircraft.  
This crystal is standard with the Military case  
but may be supplied with .093 Dia. Pins (similar  
to FT-243) or in the .050 Pins. (SPACING 1/2")

Amateur & Novice FUND. --- .01% tol. ea. \$2.50  
Marine & Aircraft FUND. --- .005% tol. ea. \$3.75

OVERTONES:  
14 to 30 Meg. tol. .005% ea. \$2.50

ALL NEW!

### \$2.00 ea. MARINE FREQUENCIES NEW! \$2.00 ea.

Available in FT-243 1/2" spacing.	2009	2126	2134	2182	2198	2206	2406	2638	2738
pin diameter .093" and in DC-34 3/5	3021	2977	2985	2637	3037	3053	2961	3093	3193

Available in Hermetically Sealed HC-6/U holders. \$3.50 ea.

### FT-243 & DC-34 HOLDERS SPECIAL - MARINE OTHER FREQUENCIES \$2.39

NOT LISTED ABOVE REGROUND TO ORDER .005 Tol.

# SPEAKER SPECIALTIES

## DH-10 CALRAD REFLEX SPEAKER



**\$12.95**

Swivel Mtg. Bracket  
28 inch Speaker Lead

Compact Reflex Speaker with full power driver unit. Excellent for use in paging or PA systems. Indoor or outdoor use.

### SPECIFICATION

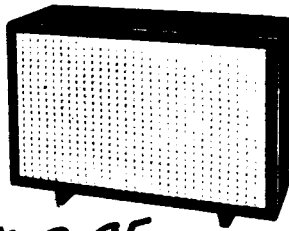
Frequency Response: 300 to 13,500 cps.  
Impedance: 8 ohm • Power Cap: 8 watt  
Bell Opening: 6 inches • Dispersion: 120°  
Depth: 6 inches • Weight: 2 3/4 lbs  
Color: Blue Hammertone

Calrad DH-10

New \$12.95

## PMB-8

Calrad  
Heavy Duty  
PM Speaker  
in Cabinet



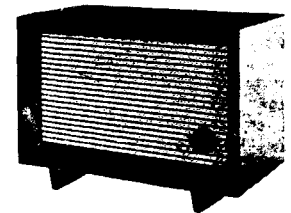
**\$8.95** 2/\$15.95

This beautifully finished wood cabinet with elegant plastic grille cloth comes complete with heavy PM speaker and fader control. Big sound in the smallest possible enclosure. Unbelievable quality is achieved through the use of an extremely efficient speaker. Mahogany finish. Size: 12" W x 8 3/4" H x 5" D.

Calrad PMB-8 New ea. \$8.95 2/15.95

## CALRAD PMB-5

4-inch PM  
in Wood  
Cabinet  
with Control



Four-inch P.M. Speaker in wood cabinet with volume control.

This beautifully finished wood cabinet with elegant plastic grille cloth houses a full 4-inch speaker, connected to built-in fader type volume control which allows any varied volume without affecting other speakers connected to sound source. Extremely well suited for intercom and similar applications.

Size: 8" x 5 3/4" x 4 1/2".  
Voice Coil: 3.2 ohms.

**\$4.89**

Calrad PMB-5

New ea. \$4.89 2/8.90

## REPLACEMENT SPEAKERS

### MINIATURE PM SPEAKERS



A complete line of miniature PM Speakers for Transistor Radios. All are one inch deep. Supplied with mounting clamps (round style) 3.2~voice coils.

1 1/2" Diameter Round, Calrad	PM-1 1/2"	\$1.59
2" " " " " " "	PM-2"	1.69
2 1/4" " " " " " "	PM-2 1/4"	1.79
2 1/2" " " " " " "	PM-2 1/2"	1.89
2 3/4" " " " " " "	PM-2 3/4"	1.99



## PMB-4 CALRAD 4" PM SPEAKER AND CABINET

TWO TONE  
WOOD BAFFLE

**\$2.95**  
2/\$5.50

Ideal small unit for intercom or other extension uses. Finished two-tone wood cabinet. Enclosed back, sloping front and a flat base, make it practical for desk use or wall mounting. Baffle houses a fine 4" speaker with heavy triconal magnet. Voice coil impedance is 8 Ohms.

PMB-4

\$2.95 2/\$5.50

## PS-10 "Whisper Pillow Speaker



**\$2.39**

Inaudible except to the user. Low impedance type employing Bone Conduction principle; gives amazing tone fidelity in by-passing the ear, transmitting the sound to the "inner ear" by direct contact. Is not tiring to the user. Connects to voice coil side of output transformer. Supplied with complete instructions

Calrad PS-10

New \$2.39 ea. 2/3.90

## AUTO RADIO GRILL

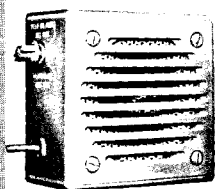


**99c**

Sparkling anodized aluminum grilles for the 6" x 9" speakers shown at left. Available in a wide range of smart colors to harmonize with your auto interior. Choice of gold, burgandy red, sky blue, pastel green, black and aluminum.

NEW 99¢

## MILITARY TYPE LOUD SPEAKERS



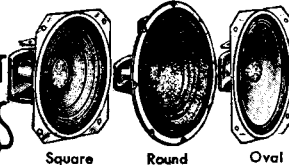
LS-166/U  
LOUDSPEAKER  
**\$19.95**

A 4" diameter PM Water Proof Loud Speaker a 8 OHM Voice Coil; housed in a cast aluminum case complete with a 8 OHM to 600 OHM Transformer, and a five foot connecting cable with U-77/U Connector. This unit is used with all GRC & PRC Radio Sets.

LS-166/U

Ex.Cond. \$19.95

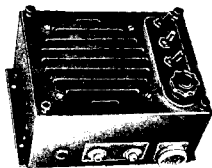
## STANDARD REPLACEMENT SPEAKERS



Square Round Oval

4" Diam. Sq.	1 oz. Magnet	ea.	\$1.29
5" " Rd.	1 oz. " "	"	1.39
6" " " "	1 oz. " "	"	1.69
8" " " "	2.15 oz. " "	"	3.39
12" " " "	2.15 oz. " "	"	3.95
5x7" Oval Type	1 oz. " "	"	1.95
6x9" " " "	1.47 oz. " "	"	2.89
6x9" " " "	3.16 oz. " "	"	3.95

## TCS LOUDSPEAKER AND CONTROL BOX



**\$4.95**  
WITH  
JENSEN  
SPEAKER

A 5" diameter Heavy Duty PM Loudspeaker with a 8 ohm Voice Coil. This speaker is housed in a steel case also containing a 8 OHM to 600 OHM Transformer, 500 OHM bridged-T pad and three toggle switches. Excellent for connecting to most any Receiver.

TCS Loudspeaker & Control Box Like new \$4.95

## AF-3 3WAY AUTO SPEAKER FADER KIT



Completely wired with instructions. For controlling volume between front and rear speakers or both. Kit includes wired control, mounting plate, knob and screws.

Calrad AF-3

NEW \$1.29

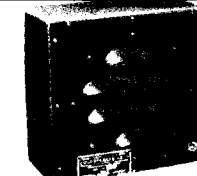


UNIVERSITY  
MODEL MM-2  
**\$14.95**  
REG. \$43.50

6" diameter completely waterproof Speaker excellent for installation in areas that are very damp or on Boats. Has a 16 ohm Voice Coil and a capacity of 15 Watts. The regular net price of this unit is \$43.50

MM-2 Loudspeaker

Ex.Cond. \$14.95



LS-3  
LOUDSPEAKER  
**\$14.95**

A 8" diameter Heavy Duty PM Loudspeaker with a 8 OHM Voice Coil housed in a steel case. Complete with a 8 OHM to 4000 OHM Transformer. This unit is used with the BC-312 and BC-342 Receiver as well as many other.

LS-3 Loudspeaker

Ex.Cond. \$14.95



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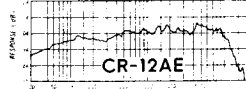
CALL FOR CATALOGS • OPEN MONDAY AND TUESDAY NIGHTS FROM 6:00 P.M.

# Full Range High Fidelity MODEL CR-12AE

## 12 Inch Mechanical Two-Way Loudspeaker

### Description:

This speaker embodies 2 reproducing cones mounted coaxially with power coming from the same voice coil. The larger cone reproduces the lower frequencies and the small cone gives you efficient high frequencies reproduction. Due to the double cone construction, velvet smooth crossover is possible and brings you the finest in concert hall music reproduction.



### Specifications:

#### CR-12 AE

Frequency Response	30 to 13,000 cps.
Resonant Frequency	45 ± 10 cps.
Capacity	20 watts, Peak 40 watts
Sensitivity	102 db/w
Voice Coil Impedance	8 or 16 ohms.
Mechanical Crossover Frequency	1800 cps.
Total Flux	85,000 maxwell
Diameter	12 1/4 inch
Voice Coil Diameter	2 inch
Depth	3 3/8 inch
Baffle Opening Diameter	11 inch
Mounting	Four equally spaced 3/4 inch hole on 1 1/2 inch diameter circle

**\$15.95**

**2 FOR \$29.50**



Calrad CR-12AE Speaker \$15.95 ea. 2/\$29.50

# Model CR-8X Coaxial, 2-way High Fidelity 8-inch Loudspeaker

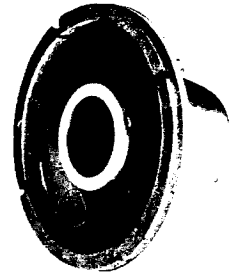
Woofers flux density is 10,000 gauss and that of the tweeter 10,000 gauss. Total flux of the woofer is 53,000 maxwell.

Diameter 8-1/16 inch, Depth 4-17/32 inch, Baffle opening 7 inch. Voice coil impedance 8 or 16 ohm. Weight 3.5 lbs.

A superior 8-inch coaxial speaker unequalled in performance by more costly speakers. Excellent low range characteristics with an axial mounted 2 1/2-inch heavy magnet cone tweeter. The woofer has a frequency response of 50-4,000 cps, and the cone tweeter covers from the electronic cross-over of 4,000 cps to 16,000 cps through the network. Excellent for use in hi-fi systems or commercial installations due to its moderate cost. This speaker has a sensitivity of 102 dB/W and will handle 10 watts with a frequency response of 40-16,000 cps and the lowest resonant frequency of 70 ± 10 cps equalling many 12-inch speakers in its faithful performance.

Specify 8 or 16 Ohms

Calrad CR-8X \$12.95 ea. 2/\$23.95



**\$12.95**

**2/\$23.95**

## CT-1 Cone Type Tweeter

CT-1 Tweeter 3-inches square x 2-inches depth. True hi-fidelity reproduction of the upper audio range, at a very moderate price. This tweeter handles 20 watts of power and has a response range of 3,000 - 16,000 cps. Heavy screen protects speaker cone, and back is entirely enclosed. Attractive Satin Gold finish. Comes equipped with rigid mounting bracket and connecting cord attached. Specify 8 or 16 ohm impedance, and use with crossover network CN-2 or similar. Weight 1 lb.

CT-1 Calrad \$3.89 ea. 2/\$6.99



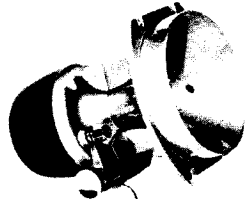
**\$3.89 ea.**  
**2/\$6.99**

## CT-4 Circular Horn Type Tweeter

### HIGH FIDELITY HORN TWEETER

CT-4 is a Horn Tweeter of the highest class for a professional use which is so engineered under a new theory as can reproduce an excellent input perfectly and effect a super Hi-Fi reproduction, almost similar to a live orchestra performance.

Freq. Range: 1500-20,000 CPS  
Crossover Freq.: 2500 CPS  
Maximum Power: 20 Watts  
Imp.: 8 or 16



**\$12.50**  
**2/\$24.00**

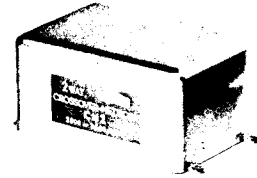
Calrad CT-4 NEW \$12.50 2/\$24.00 Specify 8 or 16 OHMS

## CN-2

### Crossover Network

For 2-way speaker systems. Divides audio signal between woofer and tweeter with crossover adjustable for 2,500 or 3,500 cps. Attenuation, 6 db per octave. Packed individually with circuit diagram and wiring instructions. 4 1/4" long, 3" wide and 2 1/4" high.

Calrad CN-2 \$4.95



**\$4.95 ea.**

## CN-3 3-Way Dividing Network

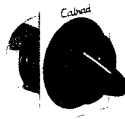


For 2 or 3 speaker systems. Two built-in L-pad type adjustments for use in balancing speakers of different efficiencies. Crossover points are 500 and 3,300 cps with attenuation of 6 db per octave styled control panel that will harmonize with the finest Hi-Fi equipment, and allows placement near other control panels. Wiring diagram and instructions for connecting speakers included. Individually packed. 5 3/4" long, 3 3/4" wide and 2 3/8" high.

**\$10.95 ea.**

Calrad CN-3 \$10.95 ea. Specify 8 or 16 OHMS

## L-Pads (Level Controls)



A flat frequency response and natural reproduction are obtained by adjusting for the difference in efficiency ratios. Adjustment ± 17% of the normal rated impedance. "L" pads are 8 or 16 ohms impedance. Black plastic contour knob. Calibrated 1 to 10. Dial 2 1/2" x 2", finished in matte silver and black. Mounts in 3/8" hole. Bushing 3/4" long. Individually boxed.

**\$1.95 ea.**  
**2/\$3.75**

Calrad LP \$1.95 ea. 2 for \$3.75 Specify 8 or 16 OHMS.

## SLP Stereo "L" Pad

A dual stereo "L" pad with single knob control for maintaining proper output level enabling the balancing of two speakers from the amplifier providing positive equal audio power to each speaker. Has 7/8" threaded bushing.



**\$2.95 ea.**  
**2/\$4.75**

Calrad SLP \$2.95 ea. 2for \$4.75



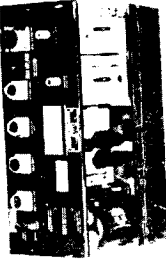
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CABLE ADDRESS "COLECTRON" - OPEN MONDAY AND FRIDAY NIGHTS "TIL 9:00 P.M."

ORDER FROM THE WORLDS LARGEST STOCKS OF ELECTRONIC PARTS!

**APN-1 VHF FM XMT-R-RECEIVER**



Receiver Freq.: 400-450 mc; Transmitter Freq.: 418 to 462 mc. Freq. modulated by moving coil transducer... heart of the F.M. Modulator or Fine for conversion to FM on 420 Mc. band.

Complete \$3.95

APN-1 Good Condition Complete with Tubes \$3.95  
poor Condition Less Tubes \$3.00

**SCR-522 TWO METER TRANSMITTER**

SOME PARTS MISSING  
BC-625 XMT-R Section Less Tubes in fair used cond.

\$2.95 ea.

SCR-522 Two Meter XMT-R. \$2.95

**R-26/ARC-5 3-6 MC COMMAND RECEIVER**



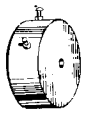
Complete 6 Tube Super-Receiver with a special automatic selector mechanism which selects any of 6 pre-tuned frequencies. A switch makes the receiver either "Auto" or "Manual".

Complete \$4.95

R-26/ARC-5 Exc. Good Cond. complete \$4.95

**HYCOR MOULDED TOROIDS**

Moulded on high density, high permeability cores of powdered molybdenum permalloy. High Q over a wide frequency range.

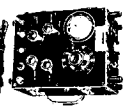


2.8 Millihenries \$1.49  
4.0 " " " " " " " "  
7.20 " " " " " " " "  
6.95 Henries  
You May Assort

Hycor Moulded Toroids New \$ 1.49 ea. 10/12.50

**TS-45/APM 3 X-BAND TEST SET**

Complete factory standard one Henrion type meter, meter of constant time. Complete frequency meter, a 2K5 oscillation generator, and a choke coupling. The set is designed for continuous wave operation but a jack is provided by means of which an external pulser can be used for pulse operation.



\$29.95  
TS-45/APM-3 Test Set Ex. Cond. \$29.95

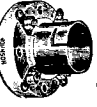
ELECTRICAL CHARACTERISTICS: Frequency range 300-5750 mc. 1.5 db below 10 db, power factor 1.2. Sd below 16 db. Signal in pul. r-f power -10 to +20 dbm. Signal output -10 to +10 dbm. 100-1000 mc. Power to load 100-127 < 50-2000 cycles, 55 watts. Sd below 10-127 < 50-2000 cycles, 55 watts. Sd below 10-127 < 50-2000 cycles, 55 watts. Sd below 10-127 < 50-2000 cycles, 55 watts.

**BENDIX RTA-1B TRANSCIEVER MOUNTING RACK MT-68E**

BRAND NEW

Reg. \$3.95 Net.

\$19.95



NEW!

EXTRA HEAVY DUTY-866-A TUBE SOCKET

E.F. Johnson Cat. #123-209-200

866-A Tube Socket New 95¢ 10/\$7.50

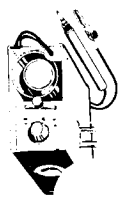
**5.3-7 MC COMMAND TRANSMITTER**



Extra Special BARGAIN Less tubes & crystal \$1.95 ea.

5.3-7 mc Command XMT-R Fair Condition \$1.95ea.

**I-210 ALIGNMENT INDICATOR**

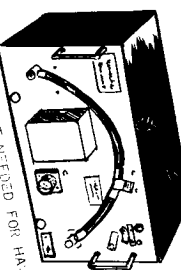


A vacuum-tube voltage indicator which uses electron-ray tube 6E5 to indicate voltages in 3 ranges: 4.5 v, 6 v, and 30 volts. Also indicates resistance and continuity in a circuit that has a resistance less than 50,000 ohms. Powered by external 7.5v and 150 volt batteries.

I-210 Alignment Indicator Ex. Cond. \$ 1.95

With Schematic \$1.95

**RT-34/APS-13 UHF TRANSMITTER RECEIVER**



Easy to convert to 420MC Pan band. Supplied less tubes & dynamotor. In good condition.

\$2.95 ea.

RT-34/APS-13 \$2.95 10/\$25.00  
RT-34/APS-13 420MC Conversion manual \$ 3.00

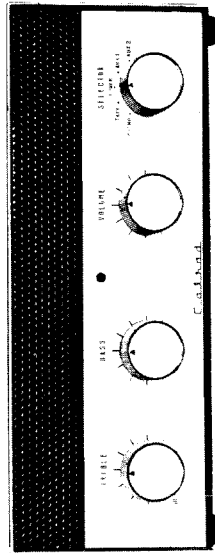
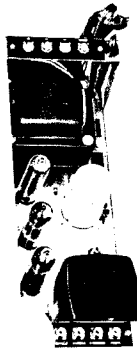
MAIL IN CHARLIE

# Calrad

# HI-FI • TUNERS • AMPLIFIERS

## AP-15 Hi Fidelity 15-watt Amplifier

The CALRAD AP-15 Hi-Fi Amplifier is a push-pull amplifier with 15 watts of maximum undistorted output. Multi-purpose tubes are utilized throughout the set to obtain maximum efficiency and a preamplifier circuit is incorporated, making it possible to use a magnetic cartridge without any additional equipment. This Hi-Fi Amplifier is designed specifically for use with a variable reluctance type magnetic cartridge. RIAA compensation is provided for use with the reluctance or crystal cartridge. Five independent inputs are available for any type of equipment. Here are definite superiority of design, construction, quality — and more important — performance; outstanding appearance at low cost; separate tone controls and low hum level.



### SPECIFICATIONS

Circuit: 2-ECL82 (6BM8) self biased pentode connected in push-pull for power output. Triode sections of ECL82 (6BM8) used as phase converter and voltage amplifier.

12AX7 used as Pre-Amplifier.

EZ81 (6CA4) full wave rectifier.

Output: Maximum 15 Watt Output

Less than 1% harmonic distortion at 9 W Output

Frequency Response: 20 to 30,000 cps.  $\pm 0$ , -1 db.

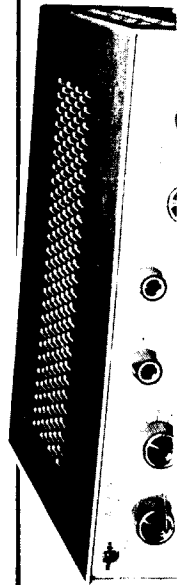
Output Impedance: 4, 8 and 16 ohms.

S/N Ratio: -65 db. or less.

Power Supply: 117 V 50/60 cycles.

Dimension: Width 12 in. Height 4 1/2 in. Depth 6 in.

Net Weight: 11 1/2 lbs.

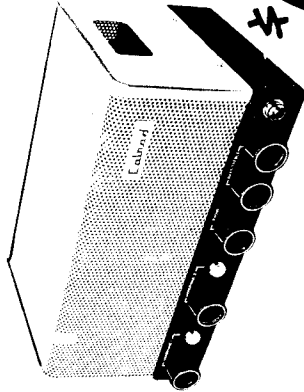


Output, program material Frequency Response Harmonic Distortion Output Impedance

30 W, 15 W per channel. -0.5 db, 30 to 25,000 cps. less than 1%. 2 FOR \$77.00

### SPECIFICATIONS

## AP-35 Calrad 35-Watt Public Address Amplifier



\$62.50 ea.

Ideally suited for schools, small theatres, assembly halls, public gatherings, churches and many other indoor or outdoor uses. This amplifier is designed to give many years of steady performance due to the excellent components assembled in this unique unit. Compactly engineered for top quality.

### SPECIFICATIONS:

Output Impedance: 4, 8, 16 ohms plus 70.7 volt constant voltage output tap.

Response: 30 to 20,000 cps,  $\pm 3$ DB at 35 watt

Inputs: Two Hi-Impedance mike inputs

One Crystal phono input

Controls: Two phono

One bass control

One treble control w/power switch

(Two) 12AX7 — (One) 6 AV6

(Two) 6CA7 — EL34\* — (One) SAR4 "GZ34"

Dimensions: 7 1/2" H x 13-7/8" W x 8 1/2" D

Complete with instructions.

AC Outlets: 2 for 300 W total load

Tube Complement: 2-12AX7, 4-6BM8, 1-6CA4

Power Supply: 105-120 V, 50/60 cps;

110 W

Dimensions, Weight: 12 1/2" x 10 5/8" x 4 1/2"; 16 lb

Complete with instructions.

# COLUMBIA'S HOT SPECIALS

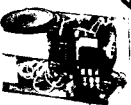
## APR-I TUNING UNITS



EXCELLENT CONVERTERS  
RECEIVER THAT TUNES 30MC

...-1 38-95mc. Ex. Cond. \$14.95  
 TN-2 76-300 mc. " " 14.95  
 TN-3 300-1000 mc. " " 14.95  
 Schematic For Any of Above  
 \$1.00 each

## AUTOMATIC KEYSER KY-65/ARA-26



Complete keying mechanism with coding wheels, motor, 3 sealed relays and extra uncut coding wheel. Used to key aircraft transceiver for emergency purposes. FB for Ham and experimental use. Contains gear trains, microswitches, etc. 24V system. KY-65/ARA-26 Ex. Cond. \$4.95

## RAX RECEIVER UNIT #1

\$14.95

U.S. Naval Air communication's receiver. 4 Band superhet in the frequency range of 200 KC to 1500 KC. Tubes used 12SK7 rf; 12K8 converter; two 12SK7 160 kc I.F.; 12SR7 detector, hfo, and avc; 12A6 audio output. All controls local on the front panel. Units are in excellent condition as removed from surplus navy planes. RAX Rec. # 1 Ex. Cond. \$14.95

## RA-105

## POWER SUPPLY



only \$9.95  
With Schematic

RA-105 Power Supply operates from 115-120 V. 60 cycle, supplies DC Volt-ages of 2400, 544, 415, 295, -1480, -10. AC Voltages of 6.45 @ 1.0 A. uses 3/5U4G, 3/2-1/6x5 tubes. Complete with circuit breakers, pilot light indicators etc. size: 2x4x10 x18. Price with tubes: Ex. Cond. \$9.95

## S METER

1.49  
10/12.50

Behind-the-panel mount face illuminated. Full scale is 5 MA.D.C. 2-3/8" across the face reverse-set pointer. Excellent condition.

ASSORTED COAXIAL CABLE

## BB-403/U NICKEL-CADMIUM ALKALINE "NIKI" MISSILE STORAGE BATTERY



Nominal voltage per cell 2.2V DC. - Approx. 4 ampere hour capacity. Size: 6"x2"x2" Wt. 6 oz. MFG. by Sonotone Corp. Ex. Cond. Guaranteed \$1.95

## BC-1303 SCR-522 CONTROL BOX



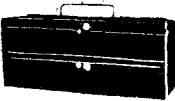
BC-1303 SCR-522 Local Control Box Fits on center connector on top of SCR-522 Has all required controls for local control No Conversion required Like New \$4.95

## 6V. CARTER GENEMOTOR



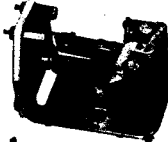
NEW! Rugged Carter quality. Excellent for powering mobile ham gear. Built in hash filter. New-Boxed, input-6V. DC. @ 270 Ma. 6 V. Carter Genemotor \$4.95

## CRYSTAL CASE CS-137



Holds 120 ft-243 crystals. Two felt padded compartments. Also ideal for fishing and transistors. Crystal Case CS-137 Ex. Cond. 79¢ 2/\$1.50

## ARC-5 ANTENNA RELAY



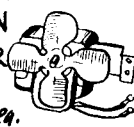
W.E. # 7735. Antenna Type Relay with S.P.D.T. contacts, having an R.F. capacity of approximately 150-200 watts; 5 A. @ 125 V. AC. An additional S.P.S.T. (N.O.) contact (1 A. @ 125 V. AC.) is available for auxiliary operation. Dual coils wired for operation on 28V. DC.; easily converted to 12 volts. Silver contacts; ceramic insulation. ARC-5 Antenna Relay Ex. Cond. \$1.49 10/\$12.50

## AUTOMOTIVE WINDOW DEFROSTER



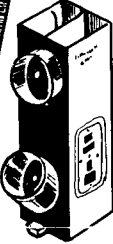
6V DC. -For 12V DC. use two in series. \$3.95 10 for \$35.00

## BARBER COLMAN 4 1/2 FAN & MOTOR



\$1.89 ea. Barber Colman Cooling Fan Motor with 4 1/2" blade, for 115V. AC-60 CPS Good Condition \$1.89

## BC-611 HANDY TALKY PARTS

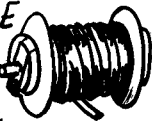


BC-611 Acces. NEW \$4.95 10/\$42.50  
 BC-611 Case top New \$1.95  
 BC-611 Case Bottom Ex. Cond. 1.95  
 BC-611 Mike & Earphone Caps New 95¢ a pair  
 BC-611 Coil & Crystal set for 5030 KC set new \$2.05

RG-11/U COAX Cable 8 ft. coil less plugs. New 49¢ ea. 10/\$4.00  
 RG-11/U COAX Cable 7 ft. lg. with PL-259 plug Ex. Cond. ea. 89¢ 10/\$7.50

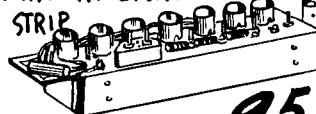
RG-11/U COAX Cable 3 ft. lg. with PL-259 plug each end Ex. Cond. 69¢ 10/\$5.50  
 RG-8/U COAX Cable 25 ft. lg. with UG-21/U Connector each end. like new \$1.95

## RETRACTABLE ELECTRIC REEL ASSY.



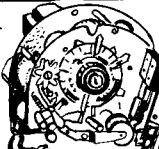
25¢ ea. 5 FOR \$1.00  
 Appleton Electric Retractable Reel Assy with 5 ft. two conductor wire ideal for pull out lamp or mike Like New ea. 25¢ 5/\$1.00

## 60 MC HI-GAIN IF STRIP



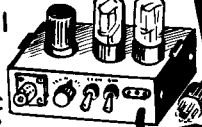
95¢ ea.  
 60 MC HI-Gain IF Strip p/o ARN-21 Uses 5ea. 6AK5, 1ea. 6AL5 & 1ea. 5670 95¢ ea. Less tubes 3/\$2.50 Schematic for above ..50¢ per copy

## SANGAMO INDUSTRIAL INTERVAL TIMER



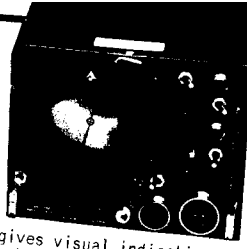
For 110-220 V. AC. 60 cycle use. 1-2-3 on off interval periods. Can be set any length of time in 24 hr. period. Can skip on off cycle on pre-selected days. Heavy duty switch for 20 amps. load. Versatile, for farms, equipment, and home use. Original cost \$38.50 Like New Guaranteed \$9.95

## TS-32/TRC-1 TEST OSCILATOR



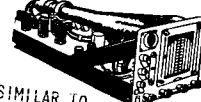
\$6.95  
 TS-32/TRC-1 70-100 MC test oscillator uses 1-6SH7; 1-6SL7 & 6SN7 Excellent for crystal calibrator Ex. Cond. \$6.95

## APA-17 5" SCOPE INDICATOR AMPLIFIER



\$4.95  
 Amplifies and gives visual indication of the relative bearing of radio & 250 to 1000 MC. When used in conjunction with a receiver covering the same range. Adaptes for other freq. or converted for use as a test oscil. Has all controls on front panel also selsyn motor attached to variable condenser that is used for scanning in synchronous with antenna motor. Complete with 1/5JP2 5" Cathode ray tube, 1/6SU7, 2/6AC7, 2/6H6, 1/6V6 & 2/2x2 tubes. Ex. Cond. \$4.95 ea.

## ASE RADAR SCOPE



\$4.95 BRAND NEW!  
 ASE Radar Scope makes an excellent foundation unit for modulation monitor. Supplied with 4-6AC7, 3-6H6 less C.R.T. Has a handsome case & C.R.T. shield. ASE-Radar Scope Brand New \$4.95

## THERMAL TIME DELAY RELAY TUNG-SOL MC-127



SPST normally closed; operates at 6.9V. DC. with 1 Amp Continuous load, releases at 2-3.5V. heater current 250 MA with 6.9V applies. Reg. Pr. \$5.10ea. 10/\$7.50 100/\$50.00 95¢ ea.

## BENDIX MR-27-G BOX



\$1.49  
 Bendix MR-27-G Loop Matching & Switching Box switches: LP-21, MN-36 or MN-20 loops for connection to MN-26 or BC-433 R.D.F. Receiver Ex. Cond. \$1.49

## RDZ/MAR CRYSTAL OVEN



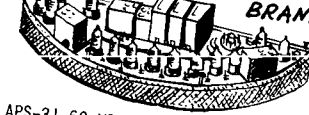
95¢  
 RDZ/MAR Crystal Oven Thermistat & 12V AC or DC heater coil Hold 10 CR-30/U crystals similar to HC-6/U Ex. Cond. 95¢ Ea. 10/\$7.50

## MARKER BEACON RECEIVER



\$2.95  
 With Schematic  
 75 Mc. Three tube tuned RF, reflex type receiver with a rectified output operates extremely sensitive relays in audio control work. Relay closes at 0.4 Ma. Ma. Contacts when the current falls to 0.2 current at low voltages. Excellent basis for door opener, robot audio control of model planes and boats, etc. Converts to tone keyer for transmitter monitors. Marker Beacon Receiver Ex. Cond. \$2.95

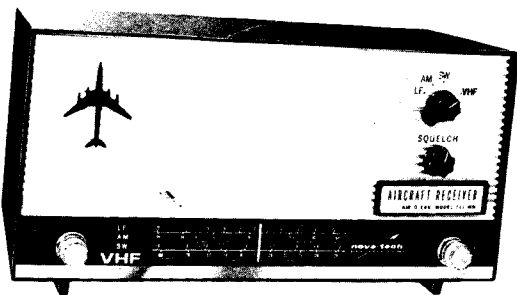
## APS-31 60 MC IF STRIP



\$7.95 BRAND NEW!  
 APS-31 60 MC IF Strip Complete with following tubes: 12 6AK5, 2 ea. 12 AU7, 1ea. 6J6 Brand New ea. \$7.95

# NEW 4 Band Aircraft Radio AIR-O-EAR

711-WN



**\$99.<sup>95</sup>**

**VHF Hear Aircraft...right in your own home or office.** Tune in giant jets, business and private planes

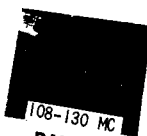
## LOW FREQUENCY Weather Band.

Monitors continuous aviation weather reports for 200 miles around. 24-hour-a-day weather information. Broadcast by the U.S. Weather Bureau...

**SHORTWAVE** Picks up police broadcasts, marine radio-telephone, ship-to-shore and ship-to-ship, Coast Guard, radio amateurs, government services, foreign broadcasts. Receives L.F. aircraft transmissions on 3023.5 kc.

**STANDARD BROADCAST Music and News.** Brings you all of your favorite radio programs. Powerful circuit delivers full, rich sound reproduction.

Plugs in anywhere- built-in antennas- 7 tubes plus rectifier- heavy duty 6" speaker- panel lighting- slide rule tuning- headset jack with automatic speaker cut-out- tuner output jack- squelch control-manual.



108-130 MC  
BAND 1

200-400 KC  
BAND 2

1.5-5 MC  
BAND 3

550-1500 KC  
BAND 4

# Nova/Star Radio and OMNI

*Least Expensive IFR Nav-Com System*  
Rugged, Precision Instruments...Thousands In Use

## NOVA/STAR VHF RADIO

Provides loud and clear 2-way communications for ranges of 60 to 100 miles. 10 Crystals installed and adjusted: All you need for VFR flight. Room for 13 more- Whistle-Tuning-Cabin Speaker with Powerful Amplifier- Built-In Intercom-Remote Jacks-Complete with power supply, antenna-installation harness-Ready to install in plane.

## NOVA/STAR RADIO

Includes \$100 Worth Of Crystals

Both Radio and Omni!  
**\$385**  
Complete

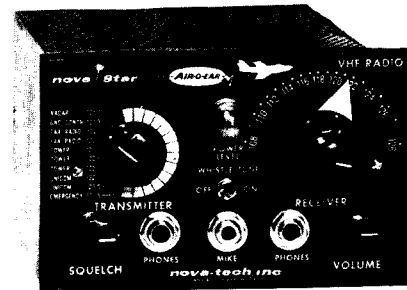
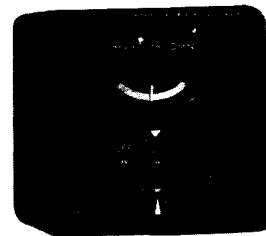
Add \$30 for 24 Volt.

## NOVA/STAR OMNI

Compact, all transistor OMNI unit provides on-the-money omni-nigation for the professional pilot, yet is simple to operate, even for the student. Meets IFR Requirements- Easily panel mounts in standard 3 1/8" instrument hole. Small enough to mount anywhere- Automatic "TO-FROM" Indicator- no switches to pull or buttons to press- Driven by VHF Receiver itself. No additional power supply or wiring necessary. Just Plug It In-

NOVA/STAR OMNI also plugs into these VHF radios: Narco, King, Lear, ARC Gonset, Aerotron, Dare, Collins.

Nova/Star OMNI Separate **\$195.<sup>00</sup>**  
12V or 24Volt.



COLUMBIAN  
**AR-4**  
AMATEUR



## COMMUNICATION RECEIVER

- TUNES 550 KCS TO 30 MCS IN FOUR BANDS
- BUILT-IN Q-MULTIPLIER FOR CROWDED PHONE OPERATION
- CALIBRATED ELECTRICAL BANDSPREAD ON AMATEUR BANDS 80 THRU 10 METERS • STABLE OSCILLATOR AND BFO FOR CLEAR CW AND SSB RECEPTION
- BUILT-IN EDGEWISE S- METER

Sensitivity is 1.0 microvolt for 10 db. Signal to Noise ratio. Selectivity is -0.8 KCS at -60db with Q-MULTIPLIER. TUBES: 6BA6-RF Amp. 6BE6 Mixer. 6BE6 OSC., 6AV6 Q-Multiplier-BFO, 2-6BA6 IF Amp., 6AV6 Det-AF Amp. ANL, 6AQ5-Audio output, 5Y3 Rectifier.

**\$99.<sup>50</sup>**

2 for  
**\$74.<sup>50</sup>**

## HT-2 CITIZEN BAND WALKIE-TALKIE

Miniature Transistor. American Mfg. No license Required... Supplied with 9 volt Battery. Push to Talk. Transmits and Receives up to one mile. Metal Case.

**\$39.<sup>95</sup>** ea.



WESTRON

Model C-360

Imported to save you money.



**8 TRANSISTOR COMPACT CAR RADIO**  
12-Volt Cars Only  
**\$39.95**

Reversible Polarity For Both POSITIVE and NEGATIVE Grounds

- ★ FIRST All-Transistor Car Radio Designed For All "Compact" and Foreign Cars ★ POWER CONSUMPTION 115-200 MA
- ★ For Sensitivity-Hi-Q, Double Tuned, Antenna Tank Circuit. Outstanding Selectivity-3 Tuned Circuits-3 IF Stages-1 RF Stage.
- ★ Push-Pull Audio Output-8 Transistors PLUS Diode and Varistor.
- ★ Built-in 4" Speaker. ★ "Slug" Tuned For Mechanical Stability.
- ★ IF: 455 KC ★ FREQ. RANGE 540-1605 KC 10 for \$ 375.00
- ★ SIZE: 2 1/8" H x 7" x 4"

COLUMBIAN ELECTRONIC SALES, INC.

1000 W. PLYMOUTH  
LOS ANGELES 17, CALIF.

COL. O. A. HEINLEIN USAF  
PO BOX-1525  
VANDENBERG AFB, CALIF