# COLIUMBIA 

 dealers MARINE
RN,
O

ZEPHYR


## 7 TRANSISTORS

2 VARISTORS
ANTENNA
TONE CONTROL
Large $7^{\prime \prime}$ Ferrite type, placed in handle
3 liver Phonic Speakers to fill your living room with living sound. Two $3^{\prime \prime}$ speakers in front and one $3^{\prime \prime}$ speaker in rear of cabinet.
Up to 6 months service on 6 standard "C" size flashlight cells.
TWO-TONE COLORS CORALE WHITE GHARCOAL E WHITE GLD
JADE EREEN BEIGE \& WHITE ALL YRM

## ZePHYR Putalle In Glowing Jewel Tones



A pint-sized portable with amazing
"pull-in" power and big radio
tone quality. Slim-line design makes for true portable compactness. Styled with eye appeal BLUE RED YEL CR. (Includes batteries and earphone for private listening.)
"ephyr MODEL

AC DC or BATTERY
pls' NEW STYLE TUBE TO
C
pls! $\begin{gathered}\text { 3-GANG TUNER FOR } \\ \text { FRINGE AREA RECEPTION }\end{gathered}$
Clean, functional, compact-only $11^{\prime \prime} \times 4^{\prime \prime}$
$\mathrm{x} 3^{\prime \prime}$. Designed for indoor use as well as outdoor-as a plug-in set as well as a



Exclusive Reflex Circuit Gives the Finest Sound Reproduction of all Four Transistor Radio Receivers


This $2^{1 / 2^{\prime \prime} \times 4^{\prime \prime} \times 1^{114^{\prime \prime}}} \quad$ EASY TUNING REFLEX CIRCUITRY NEW COLORS HI-IMPACT CASE Now you can enjoy your favorite decorato colors: Beige, Lemon, Grey, Black. All with har monizing Gold escutcheon plate.


- No tubes-no wires-new printed circuit.
- Built-in antenna-super quick starting.
- Big superphonic speaker-bell clear tone.
- Operates for months on one low cost battery.
- Small, lightweight-less than $4^{\prime \prime} \times 1 \frac{1}{4} 4^{\prime \prime} \times 2^{1 / 2^{\prime \prime}}$.
- Non-breakable Hi-Impact case.
- Fits easily into pocket or purse.
- Choice of four glorious colors.

TAN GREEN BLACK CREY
为为 52995

Earphone and batteries are included.
$\begin{aligned} & \text { battery set. } \\ & \text { Choice of Butter Cup Yellow, Sea Foam Green, Sand Beige and Charcoal. }\end{aligned}$

## COLUMBIA ELECTRONIC SALES

 MAIL ORDER DEPT.WHOLESALE - RETAIL STORE
2251 WEST WASHINGTON BLVD.
LOS ANGELES 18, CALIFORNIA - REpublic 1-2206 OPEN MON. \& FRI. TILL 9:00 P.M. - SAT. 9 TO 5:30

SAN FERNANDO VALLEY RETAIL STORE
and Wholesale warehouse 4900 LANKERSHIM BLVD.
NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668
OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6

## STEREO AMPLIFIER



SPECIFICATIONS
Circuits: 2-ECI82's self biased, pentode connected in push-pull per channel. (4 total).
Output Level: $\quad 12$ watts at less than $1 \%$ harmonic distortion (1000 c.p.s.), 2\% 1 M ( $60 / 6000$ c.p.s. per chanlel).
Peak Power Output: 15 watts per channel, 30 watts combined.
Output Impedance: 4,8 and 16 ohms. per channel.
Frequency Response: $\pm 0.5 \mathrm{db} 20-30,000$ c.p.s. at 1 watt. Minimum volume: 80 db below 12 watts. Tuner and Aux. (Hi-Level): reference).
Phono (RIAA Position): 60 db below 12 watts ( 6 mv input reference). Tape Input: 55 db below 12 watts (1 mv. input reference)

Cross Talk:
Tone Control Range:
Input Levels:

Calrad SA-30 Stereo Amplifier
A two channel 15 watt, monaural 30 watt stereo amplifier designed to perfection in audio amplification. Professional in performance and appearance and dedicated to the most critical listener demanding the finest regardless of cost. The specifications of this amplifier make it one of the finest products in the audio trade. Never before has so many features appeared in any one amplier.


Tape Output Level: 1 volt from each channel, unmodified by volume controls.
Record Equalizat:on: RIAA
Tape Equalization: NARTB
Tube Complement: (Total 8) 1-GZ34, 4-ECL82,
3-ECC83 /12AX7.
Dimensions: $\quad 141 / 8^{\prime \prime} \times 4 \frac{1}{2} 2^{\prime \prime} \times 111_{8}^{\prime \prime}$
Weight: 21 lbs .

## Power Consumption: 100 watts. $\$ 87.90$

4-SPEED PROFESSIONAL TURNTABLE


- Double Reflection
- Built-in Strobosctpe

Calrad Model 1000 Professional Turntable


## HARDWOOD BASE $\$ 17.95$ <br> SPECIFY FINISH

Specify catalog number T.T.-1000 when ordering.

## PHONO MOTOR



4 pole shaded induction motor with magnetic braking, assuring extreme accuracy of the fine speed control.

## Calrad 4 Speed Motor \& Turntable Model CRM-4

One of the finest high-quality low cost turntables available offering quiet rotation. Precision built, each unit is tested for speeds under normal operating conditions. Four speeds $162 / 3,331 / 3,45$, 78 RPM with heavy well balanced, 10 -inch aluminum turntable including a beige rubber ribbed mat.
Speeds are selected by a single large knob with off position. To eliminate drive wheel pressure. A fine speed control gives $\pm 10 \%$ variation. Overall hum shield assures best performance with all types of magnetic cartridges.
Supplied complete with instructions, mounting template and aluminum stroboscope.
SPECIFICATIONS:
$\begin{array}{ll}\text { Voltage: } & \text { AC } 117 \mathrm{~V} 60 \mathrm{c} / \mathrm{s} \\ \text { Power: } & 12.7 \mathrm{VA} 4 \text {-pole sh }\end{array}$
Power: $\quad 12.7 \mathrm{VA} 4$-pole shaded induction motor
Speeds: $16^{2 / 3}, 331 / 3,45,78 \mathrm{RPM}$
Fine Speed Control: $\pm 10 \%$
$\begin{array}{ll}\text { Wow: } & \text { Below } 0.3 \% \\ \text { Rumble: } & \text { Below } 45 \mathrm{~d}\end{array}$
$\begin{array}{ll}\text { Rumble: } & \text { Below } 45 \mathrm{db} \\ \text { Turn Table: } & 10 \text { inches, } 2.42 \mathrm{lbs},\end{array}$
Size: Mounting plate $7^{\prime \prime}$ wide $\times 734^{\prime \prime}$ deep
Weight: $\quad \begin{aligned} & \text { Mounting } \\ & 7.00 \mathrm{lbs}\end{aligned}$

## COLUMBIA ELECTRONIC SALES

MAIL ORDER DEPT.

WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLVD. LOS ANGELES 18, CALIFORNIA - REpublic $1-2206$ OPEN MON. \& FRI. TILL 9:00 P.M. - SAT. 9 TO 5:30

SAN FERNANDO VALLEY RETAIL STORE
and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.

## HI-FI STEPHENS•SCOTT•BOGEN <br> WRITE FOR COLUMBIAS LOW PRICES ONITEMS NOT LISTED



NOW -TRUE PISTON ACTION!
An engineering achievement in high fidelity reproduction! Free-cone suspension means the speaker cone is mounted flexibly with a special plastic-impregnated compliance. Result: the speaker cone moves as a true piston...the cone has free excursion, eliminating distortion, giving a maximum bass response and better transient response. Here is clarity and definition of instruments and voices unsurpassed!


NEW FREE CONE FULL-RANGE SPEAKERS
80 FR Big-speaker response designed into a rugged, compact unit. This full-range model establishes a new standard for clar ity, power-handling capacity, presence and lack of distortion in an eight-inch speaker. An exclusive internal-air damping system provides a controlled cushioning to eliminate break-up at extremely high levels.
Impedance: 16 ohms ( 8 ohms optional). Frequency response: $40-15,000$ cycles per second. Free air resonance: 50 cycles per second. Power rating: 25 watts program; 50 watts peak. Voice coil: $2^{\prime \prime}$ diameter, edge-wound aluminum ribbon. Magnet struc coil: $2^{\prime \prime}$ diameter, edge-wound aluminum ribbon. Magnet struc
ture: 4 lbs. Shipping wt. $61 / 2 \mathrm{lbs}$.

120 FR Freedom from distortion...excellent transient response...smooth musical balance! The 120FR is an extended frequency range speaker that combines all of these performance qualities in a 12 -inch model-performance qualities usually associated with only the finest coaxial speakers.
Impedance: 16 ohms ( 8 ohms optional). Frequency response: $30-15,000$ cycles per second. Free air resonance: 40 cycles per second. Power rating: 30 watts program; 60 watt peaks. Voice coil: $21 / 2^{\prime \prime}$ diameter, edge-wound aluminum ribbon. Magnet structure: $9 \frac{1}{2}$ lbs. Shipping wt. 15 lbs . $\$$

150 FR Here's a new 15 -inch full-range loudspeaker with bass response more robust and full-bodied than ever before possible. The secret is an outstanding engineering achievement: freecone suspension now in a full-range 15 -inch speaker for the very cone suspension now in a full-range 15 -inch speaker for the very first time. The 10 ind in 16 ans
 optional). Frequency response: $20-14,000$ cycles per second. program; 70 watt peaks. Voice coil: $3^{\prime \prime}$ diameter, edge-wound aluminum. Magnet structure: 18 lbs . Shipping wt. 25 lbs ,
$50-50$


STEFFIEINS TRUEONTC RECOMMENDED FOR STEREO
For the ultimate in stereo performance, complete ease and convenience of placement, plus a cost savings to you, we recommend the use of a single high quality, full-range Trusonic FREE CONE loudspeaker with
 good bass response in conenill STEREODOT* system. This will provide you wis

## EOCEN

DB-114 MONAURAL


Compact high fidelity amplifier with full 14 watts power output at less than $0.5 \%$ distortion. For use with tuner, record player, tape recorder, etc. Peak power 34 watts.
MODEL DB-114. Net.................. \$ 69.50 AEG Cover and Legs................ . 6.00

FM-AM TUNER


Radiation-proof FM-AM tuner incorporating highly sensitive and selective circuits.

MODEL T-661. Net. $\qquad$ AEG Cover and Legs

DB-212 STEREO


Stereophonic dual amplifier-preamplifier. With this single unit you can precisely control all stereo sources, Discs, Tapes, AM-FM broadcasts. Dual 12 -watt out puts for stereo ( 24 watts monaural) with life-like reproduction. Peak power 48 watts.
MODEL DB-212. Net $\qquad$ .$\$ 115.00$ BEG Cover and Legs $\qquad$ 115.00
7.50

## NEW FM51 BASIC FM TUNER

Exceptionally fine basic FM tuner. Has automatic frequency control to "lock in" tations, and temperature compensated oscillator to prevent drifting.

## NEW AM91 BASIC AM TUNER

Has 3 tuned RF circuits; built-in antenna $10-\mathrm{kc}$ filter; etc. 4 tubes plus rectifier and tuning eye. Size, $43 / 4 \times 12 \times 121 / 4^{\prime \prime}$. Less cage; takes AEG type listed at right. For opera-
tion from $110-120$ volts, $50-60$ cycle $A C$.

## SCOTT

STEREO CONTROL


Permits instantaneous conversion of monaural systems to stereo. Simultaneous control over two separate amplifiers from a central point.
MODEL 135. Less Cover. Nef... \$ 24.95 MODEL "E" Metal Cover ...... 4.95 MODEL "EW'" Wood Cover.......... 11.95

## 40-WATT STEREO



STEREO AMPLIFIER. 40 watt complete stereo amplifier with dual pre-amplifiers and dual 20 watt power sections.

MODEL 299. Less Cover. Net.... $\$ 199.95$ MODEL "C" Metal Cover......... 9.95 MODEL "CW" Wood Cover (Specify MODEL- "CW"' Wood Cover (Specify
Mahog., Walnut or Blonde)......... 19.95

## 22-WATT HI-FI



Complete, compact 22 watt amplifier including preamplifier controls and power amplifier, 44 watts peak. MODEL 99D. Less Cover. Net.... $\$ 109.95$ MODEL "C" Metal Cover............ 9.95 MODEL "CW" Wood Cover. (Specify Mahog., Walnut or Blonde)........... 19.95

## AM-FM TUNER



AM-FM TUNER. Matches all Scott amplifiers. FM wide-band circuitry features freedom from noise, drift and distortion. MODEL 300. Less Cover. Nef..... $\$ 159.95$ MODEL "C" Metal Cover........... 9.95 MODEL "CW" Wood Cover (Specify Mahog., Walnut or Blonde)............ 19.95


# GUALITY ARE REASONS PRICE SERVICE FOR OUR LARGE 



## E.alnad MODEL CR-12A FULL RANGE HIGH FIDELITY

## 12 Inch Mechanical Two-way Loudspeaker

## Descripion: LATEST RELEASE

This speaker embodies 2 reproducing cones mounted coaxially with power coming from the same voice coil. The CR-12A brings you the finest in concert hall music reproduction. With a power rating of 20 watts, this unique speaker performs beyond expectation while retaining its capacity to carry the above normal load requirements without distortion. Specification:

This 12 inch loudspeaker has a frequency response of 30 to 13,000 cps , lowest resonance $50 \pm 10 \mathrm{cps}$, capacity 20 watts, peak at 40 watts

## c. ${ }^{5}$ / 4.95

## Rectangular

Horn Tweeter
20 watts maximum power This tweeter gives excellent tonal purity with smooth response from 1,700 to $16,000 \mathrm{cps}$. Sensitivity is $102 \mathrm{db} / \mathrm{w}$. With a crossover frequency of $3,800 \mathrm{cps}$ the CT3 provides clean and crisp tone quality from the mid-range frequencies through to the highs. Performs exceptionally well in either a 2 -way or 3 -way system. Cut-off frequency- $1,500 \mathrm{cps}$. Voice coil is aluminum wire wound; impedance: 8 or 16 ohms. Flux density is 13,500 gauss, and total flux is 32,500 maxwell. $43 / 4^{\prime \prime} \times 2^{\prime \prime}$ horn, $43 / 4^{\prime \prime}$ depth. Finished in stain gold and gray, chrome trim. Weight3 lbs .

## REFLEX TRUMPET SPEAKER



## SPECIFICATIONS

Voice Coil Impedance: 8 ohm
Overall Length: 8 inches Frequence Range: $340-7,000 \mathrm{cps}$. Waterproofed.
The Model DH12 Trumpet Horn Speaker is a combination type Trumpet Horn Speaker with the Driver Unit enclosed within the Horn. Complete Waterproofing and Rustproofing with Shockproof construction has made this speaker a rugged Trumpet Speaker for rough use. Its lightweight aluminum construction and small Tize
The diaphragm constructed with a special resinification process has made it possible to withstand up to $50 \%$ power input overload.
Constructed for wide angle coverage with ability to produce crisp, sharp and effective music or speech in areas where high noise level might be encountered. Complete
with swivel mounting bracket furnished in grey Hammertone finish, and conwith swivel mounting bracket furnished in grey Hammertone finish, and connecting cord. Cat. No. DH-12

## PS-10 "Whisper" Pillow Speaker <br>  1.95

 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 for connection and uses
## COLUMBIA ELECTRONIC SALES

 MAIL ORDER DEPT.WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLi'D.

## T.W. ACCESSORIESSPDEAKERS-ANTENNAS

A Wall feed through for 300 ohm wire. Adjustable for any wall. Waterprooffed. Complete with wall plate。 $95 ¢$ ea.
B. Trol-Aid for cleaning volume controls etc. Complete with wall hanger and long reach nozzle \$1.98
smaller caddy size 98¢ ea.
C. Tune-O-Lube. Same as above except for cleaning tuners, switches etc. Large size complete. \$1.98 smaller caddy size 98 ¢
D. TV wall plate complete with matching plug. Ivory only. $75 ¢$ ea. E Strap around clamp for antenna masts. Adjustable. $15 ¢$ ea
F. Indoor "rabbit ears"' type TV antenna. Molded base, with three section whips. With wire. \$1.39 ea.
G. TV cheater cord. All molded. 39¢ ea H. Paralell picture tube booster. will fit most sets.
I. Antenna clip, two wire. Clips onto the antenna posts of most sets. Also

J. 300 ohm plug \& jacks for joining two wiress polorized $39 ¢$ pair. K. Heavy duty mounting base. Will handle most masts and any angle. All steel.

95¢ each.
L. 300 ohm lead in wire. Heavy duty finest quality. $\quad 50 \mathrm{ft}$. 95 C
$100 \mathrm{ft} . \quad 1.95$
M. Telescoping masts. heavy duty steel construction. Shipped express. $\begin{array}{rlrr}20 \mathrm{ft} . & \$ 500 & 40 \mathrm{ft} . & \$ 9.95 \\ 30 \mathrm{ft} . & \$ 7.50 & 50 \mathrm{ft} . & \$ 12.50\end{array}$ N. Arrow antenna. All aluminum. less mast. $\quad \$ 1.95$ ea. 5 foot mast for above。 $\quad .95 \mathrm{ea}$.
O. Conical antenna. All aluminum. Less mast.
Mast for above.
\$ 2.95
P. Seven element yagi. For Poor reception areas. $\quad \$ 9.95$ 10 foot steel mast for above. \$1.95
Q. All aluminum non-directional FM antenna. With mast \& guy ring, $\$ 4.95$ ea.
R. Standoff insulator. 2 for $15 ¢$
for hi-fi speaker outputs. $25 ¢$ ea.

## BLOCKBUSTING VALUES

 ON Replacement Speakers
## OVAL

OVAL

$$
\text { . } \$ 1.89
$$

1
$6 \times 9 \ldots \leqslant 2$
2.49
$5 \times 7 \ldots / .95$
 $5 \quad \ldots .1 .49 / 12 \ldots . .4 .95$ $6 \ldots 1.69 / 2 \begin{aligned} & \text { EXTRA } \\ & \text { HEAVY } \\ & 7.95\end{aligned}$
$\frac{\text { ROUND }}{31 / 2^{\prime \prime} \ldots}$ \$/.25 $4 \quad \ldots .1 .3510$



Contains everything for fnstalling a rear seat speaker in any car: a Rear Deck Grille, Switch Kit; Stock No. SW-54 and PM Auto speaker with Alnico 5 Magnet REAR DEKK SPEAKER GRILLE
 perforated bezel to protect speaker cone. Hard baked grey hammerloid finish, har-

PRE-WIRED SWITCHES for rear seat speaker

Complete with wire and mounting plate.

DELUXE FADER CONTROL
Fades from front to rear speakers.

69
79

monizes with any car interior.


WHITE 55 c
CHROME 7 E


CHROME 6×9-99c
CHROME $5 \times 7$ 89c
HAMMERTONE ${ }_{5 \times 7} \times 7$

##  With Volume Control USES?



Sit in your easy chair and control volume of TV set or remote speaker. Connects to any TV set, Radio or Record Player. With 20 ft. of cable
and instructions for easy connection. only $\$ 3.95$


SWIVEL BASE: Has adjustable split-ball with positive locking feafure.
Model MB-1
$\$ 2.89$

SWIVEL BASE AND SPRING: Spring is of oiltempered heavy spring steel.
Model MB-2 -Standard
$\$ 4.16$
Model MB-2H-Hooury Dury $\$ 4.81$

STAINLESS STEEL MASTS: Exceptionally high tonsile strength. Fit either MB-1 or MB-2 or any standard base.

Model MM-60

$\$ 3.39$
Model MM-60 60"
$\$ 3.39$
Model MM-72 ..... $\$ 3.57$
Model MM-84
"
$\$ 3.99$
Model MM-96
BASE SPRINGS: Flexible cable thru center of springsmaintains constant electrical impedance.Model MBS-1-Standard$\$ 1.45$
Model MBS-2-Heavy Duty ..... \$2.06

# COLUMBIA ELECTRONIC SALES MAIL ORDER DEPT. 

WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLVD.

## KITS \& PHONO ACCESSORIES

## 

## FM TUNER

HFT90: surpasses wired tuners up to 3 X its cost. Prewired, pre-aligned, temperature-compensated "front end" - drift-free. Precision "eye-tronic" tuning. Sensitivity, Response $20-20,000 \mathrm{cps} \pm 1 \mathrm{db}$. K-follower \& multiplex outputs. "Drift'absolutely absent; audio quality excel lent: novel tuning quite effective." - ELECTRONICS ILLUSTRATED. Kit $\$ 39.95^{*}$. Wired $\$ 65.95^{*}$. Cover $\$ 3.95$. *Less cover, F.E.T. incl.


HF81: Stereo Dual Amplifier-Preamplifier selects, amplifies \& controls any stereo source - tape, discs, broadcasts - \& feeds it thru self-contained dual $14 W$ amplifiers to a pair of speakers. Monophonically: 28 watts for your speakers; complete stereo preamp. Ganged level controls, separate focus (balance) control, independent full-range bass \& treble controls for each channel. Identical Williamson-type, push-pull EL84 power amplifiers, excellent output transformers. "Low silhouette" construction. Kit $\$ 69.95$. Wired $\$ 109.95$. cover
included.

HF14: 14-Watt Power Amplifier. of the HF81 above. Kit $\mathbf{\$ 2 3 . 5 0}$. Wired $\$ 41.50$.

## DYNAKIT AMPLIFIER KITS



MARK III 60 WATT AMPLIFIERKIT

$$
5995
$$

MARKII 50 WATT AMPLIFIER KIT $\$ 69.75$

PRE-AMP. KIT<br>(WIRED 59.95)<br>$\$ 34.95$

## MODEL PSI DUAL PRE-AMP POWER SUPPLY KIT 8.95

## FIFR STEREO AND MONAURAL KITS \& WIRED



HF85
STEREOPHONIC EQUIPMENT HF85: Stereo Dual Preamplifier selects, preamplifies \& controls any stereo source - tape, discs, broadcasts. Distortion borders on unmeasurable. Self-powered. Works
with any 2 high-quality power amplifiers such as EICO HF14, HF22, HF30, HF35, HF50, HF60. Avaitable shortly.


HF32: 30-Watt Integrated Amplifier combines excel lent HF30 power amplifier above with versatile preamplifrer featuring tape head \& microphone inputs, scratch \& rumble filters, all amplifier facilities. Kit $\mathbf{\$ 5 7 . 9 5}$. Wired $\$ 89.95$. Both include cover.

HF20: 20-Watt Integrated Amplifier complete with finest preamp-control facilities, excellent output transformer that handles 34W peak power, plus a full UltraLinear, Williamson power amplifier circlit. 49.9 . Wired \$79.95. Matching Cover E-1 \$4.50.
HF12: 12-Watt Integrated Amplifier provides complete "front end" facilities \& excellent performance for any medium-power application. "Packs a wallop"
POPULAR ELECTRONICS. Kit $\$ 34.95$. Wired $\$ 57.95$.

MONAURAL INTEGRATED AMPLIFIERS (use 2 for STEREO) HF52: 50-Watt Integrated Amplifier with complete "front end" facilities \& Chicago Standard Output Transformer. Ultra-Linear power amplifier essentially identical to HF50. "Excellent value" - Hirsch-Houck Labs.
Kit $\$ 69.95$. Wired $\$ 109.95$. Matching Cover E-1 $\$ 4.50$.


MONAURAL POWER AMPLIFIERS
(use 2 for STEREO)
HF60: 60-Watt Ultra Linear Power Amplifier with Acro TO-330 Output Transformer; wide band-width, virtually absolute stability \& flawless transient response. One of the best-performing amplifiers extant; an excel$\mathbf{\$ 9 9} 95$ M. AU \$99.95. Matching Cover E-2 \$4.50
HF50: 50-Watt Ultra Linear Power Amplifier with extremely high quality Chicago Standard Output Transformer. Identical in every other respect to HF6O, same specifications at 50 watts. Kit $\$ 57.95$. Wired $\$ 87.95$. Matching Cover E-2 $\$ 4.50$.
HF35: 35-Watt Ultra-Linear Power Amplifier version of the HF60 above. Kit \$47.95. Wired \$72.45.
HF30: 30-Watt Power Amplifier employs 4-EL84 high power sensitivity output tubes in push-pull parallel, Wil-2-EZ81 full-wave rectifiers for highly reliable power supply. Unmatched value in medium-power amplifiers. Kit $\$ 39.95$. Wired $\$ \mathbf{2 2 . 9 5}$. Matching Cover E-3 $\$ 3.95$.-
HF22: 22-Watt Power Amplifier version of the HF60 above. Kit $\$ 38.95$. Wired $\$ 61.95$.


MONAURAL PREAMPLIFIERS (stack 2 for STEREO) HF65: superb new design. Inputs for tape head, microphone, mag-phono cartridge \& hi-level sources. IM discortion 0.04\% @ 2V out. Attractive "low silhouette" design. HF65A Kit \$29.95, Wired \$44.95. HF65 (with power supply) Kit $\$ 33.95$. Wired $\$ 49.95$.
HF61: "Rivals the most expensive preamps" - Marshall, AUDIOCRAFT. HF61A Kit $\$ 24.95$, Wired $\$ 37.95$, HF61 (with power supply) Kit $\$ 29.95$. Wired $\$ 44.95$.


ON THIS PACEA
PRECISION, BALANCE-
TYPE STYLUS PRESSURE CAUCE.


Model 371 STANTON 45X45 StereoFLUXVALVE Cartridge I has two balanced signal outputs for connection to the low mag inputs of a stereo-preamplifier (they may be connected in single-channel preamplifier) Output level is sufficient for all preamplifiers and there is no need to employ a transformer or other "gain"" employ a transformer "magnetic-discriminator", provides interchannel isolation with negligible crosstalk.
Model 371-.7D STANTON 45X45 Stereo-
FLUXVALVE Cartridge


Model 196 STANTON 45X45 UNIPOISE arm with integrated Stereo-FLUXVALVE pickup. This advanced mechanical design and functional styling combine to provide the finest phonograph reproducer ever made...for all microgroove records . monophonic and stereophonic! For use with all high quality transcription turntables, its practical size permits installation into areas only slightly larger than that required or record changers... it will mount on a motorboard measuring only $151 / 2^{\prime \prime} \times 151 / 2^{\prime \prime}$. Simple Uni-mount installation, employs a single thumbscrew and bolt. Exclusive arm rest with soft sable brush to keep the stylus tip free of dust at all times. Convenient stylus force adjustment.

Model 196-.7D UNIPOISE Arm with Integrated Stereo-FLUXVALVE pickup ... $\$ 59.85$


SAN FERNANDO VALLEY RETAIL STORE
and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD. NORTH HOLLYWOOD, CALIFORNIA-STanley 7-2113 - POplar 6-8668 OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6

## F/C』 Laboratory precision mstrumats \& KITS



## MODEL 666 TUBE AND TRANSISTOR TESTER

Tests all transistors; reads both reverse collector current and current amplification factor (Beta), using internal power supply,
Tests all receivtng tubes, including 9 -pln miniatures, subminiatures, ocolor and monochrome CRTs. 10 six-mosition lever switches;
10 pushinutton switches. Large meter scale; roll chart: detachables
 Model 666 Tube and Transistor Tester-Wire. Net
Model $666-\mathrm{K}$ Tube and Transistor Tester Kit-Net Ea. $\mathbf{\$ 6 9 . 9 5}$ LOW-COST MULTI SIGNAL TRACER $145 A$ High gain RF and low gain audio input channels
for signal tracing and trouble shooting RF, IF, and audio stages of AM, FM, and TV receivers. More than enough RF gain to trace up to receiver input; signal is heard through built-in $55^{\prime \prime}$ PM speaker. Shielded RF crystal demodulator and direct probes supplied. Noise localizer circuit applies DC test voltage through probe to suspected component and simultaneously picks up and
amplifies effect. May be connected as test speakamplifies effect. May be connected as test speak-
er, amplifier or output transformer. Output for er, amplifier or output ranstormer. etc. Remarkably compact. With ali parts. 7-13/16 $\times 5-9 / 16 \times 5-1 / 16$. Shipping weight, 7 lbs. KIT $\$ 19.95 \quad$ Factory Wired $\$ 28.95$

## BATTERY ELIMINATOR

ACCESSORY FILTER No. 1055 KIT $\$ 11.95$

## "EXTRA-FILTERED" 6V and 12V

 BATTERY ELIMINATOR and CHARGER No. 1060Model 630-K CRT Checker Kit-Net Each. ......... \$13.95 Model 944-K Flyback and Yoke Tester Kit-Net Each\$23.95 Model 1100-K Resistance Substitution Box Kit-Net... $\mathbf{\$ 5 . 9 5}$ Model 1171-K Resistance Decade Kit-Net Each.....S 19.95 Model 1120-K Capacitance Substitution Box Kit-Net.. $\$ 5.95$ Model 1180-K Capacitance Decade Kit-Net Each.... \$14.95 Model 488-K Electronic Switch Kit-Net Each........ $\$ 23.95$ Model 950 K -K Bridge-Comparator Kit-Net Each.... $\$ 19.95$
 Model 460-K $\mathbf{5}^{\prime \prime}$ Oscilloscope Kit-Net Each...........\$79.95 Model 540-K Utility Tester Kit-Net Each............. $\mathbf{\$ 1 2 . 9 5}$

## FREE!

With any instrument kit above, 10 sets of insulated, color coded allegator test leads.

## TEST-O-MATIC

SPEEDS UP RADIO E T.V. SERVICE



Model 1050-K Battery Charger and Eliminator KitNet Each.................................................... $\mathbf{S 2 9 . 9 5}$ Model 584-K Battery Tester Kit-Net Each............. $\mathbf{S 9 . 9 5}$
 Model 565-K Multimeter Kit-Net Each.............. 24.95
Model 526-K Multimeter Kit-With $1 \%$ resistors. Net 13.90
 Model 566-K Multimeter Kit-Net Each.
Model 566-K Multimeter Kracer Kit-Net Each... Model 214-K VTVM Kit-Net Each.

MODEL HVP- 2 HIGH VOLTAGE PROBE
For sate measurement up to 30,000 VDC with any VTVM or
20,000 ohms/volt VOM. Includes choice of high quality multiplier resistor to match most popular instruments. Model HVP-2 High Voltage Probe-Wired. Net Each. 4
Model HVP-1 High Volage Probe-Similar uses as HVP-2; sup-
plied with matching resistor for your instrument. Net.... $\mathbf{S 6 . 9 5}$


249


IF-RF allgnment, signal tracing and trouble-shooting of TV, FM and AM sets on all fundamentals; marker generator. 400 cps sine
wave audio testing. Also for lab and experimental work. Extended Wave audio testing. Also for lab and experimental work. Extended
Frequency Range: Six fundamental bands: $150-400 \mathrm{kc}, 400-1,200$ $\mathrm{kc}, 1.2-3.5 \mathrm{mc}$, , $3.5-11 \mathrm{mc}, 11-37 \mathrm{mc}, 37-145 \mathrm{mc}$; harmonic band
$111 \mathrm{mc}-435 \mathrm{mc}$. $\pm 1.5 \%$ frequency accuracy. Colpitts RF $111 \mathrm{mc}-435 \mathrm{mc} . \pm 1.5 \%$ frequency accuracy. Colpitts RF oscilla-
tor, directly plate-modulated by cathode follower. Variable depth of internal modulation, 0-50\% by 400 cps Coipitts oscillator. Variable gain external modulation amplifier; 3 v. needed for $30 \%$
modulation. Fine and coarse ( 3 -step) RF attenuators $50-0 \mathrm{~h}$ modulation. Fine and coarse (3-step) RF attenuators; $50-\mathrm{ohm}$
output impedance.
Model 324 RF Signal Generator-Wired. Net Each... $\mathbf{3 9 9 5}$ Model-324-K RF Signal Generator Kit-Net Each.....\$26.95

MODEL 249 DELUXE PEAK-TO-PEAK VTVM Measures directly p-p voltage of complex and sine waves: $0-4,14$,
$42,140,420,1400,4200$. DC/RMS sine volts: $0-1.5,5,15,50,150$ $42,140,420,1400,4200$. DC/R MS sine volts: $0-1.5,5,15,50,150$,
$500,1,500$ (up to 30,000 v. with HVP probe, and 250 mc with PRF probe). Ohms: 0.2 ohms to 1,000 megs. Seven non-skip ranges on every. function. Calibration, without removing from cabinet. $71 /{ }^{\prime \prime}$ " neter with "can t-burn-out" circuit. $\%$ multipliers. Zero center.
WIth, AC/DC Uni-Probe: One probe for all functions-half-turn of Mrodel 249 Selects DC or AC ohms. MTV Wired, ready to use. Net Each.... $\mathbf{~ M o 9 5}$

MODEL $4255^{\prime \prime}$ PUSH-PULL OSCILLOSCOPE Push-pull ampliffers. Sensitivity: $0.05-0.1 \mathrm{rms} \mathbf{v} / \mathrm{in}$. Response: cps-500 kc: useful to 2.5 mc . Sweep: $15 \mathrm{cps-75} \mathrm{kc}$. Z-axis intensity modulated. Direct connections to CRT plates. $5^{\prime \prime}$ CRT.
Model $4255^{\prime \prime}$ Oscilloscope-Wired, ready to use. . . . . ${ }^{\prime \prime} 79^{95}$
Net Each Model 425-K' 5 " O'scilloscope Kit-Net Each . . . . . . . . . $\$ 44.95$

Model 360-K TV /FM Sweep Generator Kit-Net Each $\$ 34.95$
$\mathbf{5}$ Mc or 4.5 Mc Crystals-Specify. Net Each.......... 3.95 Model 315-K Deluxe RF Signal Generator Kit-Net.. $\mathbf{S 3 9 . 9 5}$ Model 352-K Bar Generator Kit-Net Each. ......... \$14.95 Model 368-K Sweep-Marker Generator Kit-Net Ea. \$69.95 Model 322-K Signal Generator Kit-Net Eacn........ $\$ 23.95$ Model 377-K Audio Generator Kit-Net Each. . ...... .S31.95 MODEL PLC OSCILLOSCOPE LOW CAPACITY PROBE Kit-Net Each. ......................

 MODEL PTP-11 PEAK-TO-PEAK VTVM PROBE Kit-For 11 meg VTVM. Net Each... $\$ 4.95$
Kit-For 25 meg VTVM. Net Each... 4.95 MODEL PRF-11 RF VTVM PROBE Kit-For 11 meg VTVM. Net Each... $\mathbf{\$ 3 . 7 5}$
Kit-For 25 meg VTVM. Net Each...
$\mathbf{3}, 75$

## OTHER MEASURING DEVICES

## CAPACITOR CHECKER



This complete capacitance analyzer originally sold for many times Columbia's low low LOW price. value. Built-in meter measures leakage up to 100 megohms, also voltage and currant. Has variable voltage and power factor controls. Will make qualitative tests or simple checks of almost any capacitor. Operates from 110 VAC 60 cy . Oxford-Tartak Model CT-400 Excellent cond.

$21 / 21 \mathrm{NCH}$ $0-200$ MA DC.
WESTON or
sancamo
NEW $\$ 195$

MAIL ORDER DEPT.

WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLVD. LOS ANGELES 18, CALIFORNIA• REpublic 1-2206 OPEN MON. \& FRI, TILL 9:00 P.M. - SAT. 9 TO 5:30

SAN FERNANDO VALLEY RETAIL STORE
and WhOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.
NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668 OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6

## PHOUO ACCESSORIES



PA-1 Calrad Semi-Auto
Phono Pickup
A manual pickup with completely automatic return of arm when record is finished. Soft rubber wheel carries
pickup arm back to arm rest. Cannot härm record; needle rides safely above the record and arm actuates switch in arm rest to shut off the turntable. Turntable starts again, automatically, when pickup arm is raised from rest. Dual styli turnover crystal cartridge with replaceable supphire needles for playing LP's and 78's. On 9" or larger table arm works automatically with all record sizes up to $12^{\prime \prime}$. Complete with all mounting hardware, shut-off switch, instructions and mounting diagram. Individually boxed.

Cat. No. PA-1

$$
\$ 4.95
$$

Calrad Stereo Pickup Arm
SPECIFICATIONS:
Overall Length: 11-13/16"
Length between Stylus and Center of Pivot: $87 / \mathrm{m}^{\prime \prime}$ Cartridge Mounting Hole: $1 / 2^{\prime \prime}$ Std. M+g. Centers. Balanced Weight: 4 weights supplied Lead Wires from Arm: 5
Tracking Error: Within $\pm \mathbf{2}$ degree
Non-Resonance Range: 20-20,000 c.p.s.
Plug-in Type Head: 2 included

Modern design pickup arm for the latest types of stereo cartridges now on the market. This arm is supplied with all necessary hardware and 4 balancing weights to obtain the proper styles pressure needed. Well engineered to meet the necessary high standards required by the stereo user. Perfect performance when used with SC-415 Calrad Stereo cartridge. This stereo tone arm can also be used with regular records, and is balanced against rolling. Cat. No. CS-12


## T-25 Compromise Pickup Arm

Has C-10 compromise crystal 3 Volt universal cartridge (less needle) for playing both standard and microgroove records. 4 speed light weight brown bakelite finish, arm is spring counterbalanced. Individually packaged. Single hole arm mounting. Plays records up to $12^{\prime \prime}$.

## 3 FOR 7.95



SC-415 4 Lead Stereo Cartridge
Cal-rad presents its newest 4 Lead Compatible Stereo Cartridge offering performance of full-dimension sound with exceptional fidelity of both stereo and LP discs. This superior cartridge features high vertical and lateral compliance for the $45-45$ stereophonic records. Complete with Jewel needle.

## SPECIFICATIONS

Mounting: Standard $1 / 2$ inch center
Dimensions: $1 / 2$ inch high $\times 23 / 32$ inch wide $\times$ 1-9/16 inch long
Response: 20-15,000 cycles with gradual rolloff

Output Voltage: 0.25 volts
Channel Isolation: 20 db
Tracking Pressure: 5-7 grams
Stylus: Jewel tip 0.7 mil

Calrad SC-515 Stereo-Turnover Cartridge


A truly magnificent product, produced to exacting specifications with 0.7 mil and 3 mil sapphire stylii, offering 20 db channel isolation; response 20-16,000 cps. Plays all 4 speeds for both stereo and monaural records. Excellent all-directional compliance. SPECIFICATIONS
Response: 20-16,000 cps with smooth roll-off beyond Output Voltage: 0.3 volt Tracking Pressure: 5-7 grams Channel Isolation: 20 decibals Mounting Dimensions: $1 / 2$ in. std. Compliance: $2.0 \times 12^{6} \mathrm{~cm} /$ dyne
3 FOR ${ }^{5} / 595$


SN-2 15
Needle 45-45
Replacement stereo needle. Jewel sapphire tip for SC 315 —SC 415 -SC 515.



PROFESSIONAL VISCOUS DAMPED

TONE ARMS - FLOATING ACTION


Advanced design high-quality transcription tone arms with viscous damping of both horizontal and vertical movements. Dąmping action is readily controlled by convenient adjustment knob on top of arm. Plug in head accepts all popular cartridges, and weights are supplied to compensate for different cartridges. Height of tone arm is adjustable by telescoping shaft. Tone arm base has adjustment screws for self leveling. Adjustable arm rest furnished. Gray Hammertone finish. Professional quality instruments, in two sizes. Licensed by C.B.S.

Cat. No. SV-12 For Records up to $12^{\prime \prime}$


Cat. No. SV16 For Records up to $16^{\prime \prime}$ 1995

C-10 Crystal Compromise

CX-310 45 RPM Replacement Cartridge

Exact physical and electronic replacement for RCA type players. Frequency response: $50-10,000 \mathrm{cps}, 1.0$ Volt output. Complete with 1 mil sapphire
stylus.
${ }^{\text {st }}$
$\xi \mathrm{FORA}^{4}$

## Transcription Tone Arms



50
$\$ 1.95$

SAN FERNANDO VALLEY RETAIL STORE
and WhOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.
NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668 OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6

## HI-FI ACCESSORIES "F FlEET

## L-Pads

(Level Controls) A flat frequency response and natural reproduction are ob difference in efficiency ratios. Adjustment $\pm 17 \%$ of the Adjustment $\pm$ normal lated impedance. "L" pads are 8 or 16 ohms impedance. Black plastic contour knob. Calibrated 1 to 10. Dial $21 / 2^{\prime \prime} \times 2^{\prime \prime}$, finished in matte silver and black. Mounts in $3 / 8^{\prime \prime}$ hole. Bushing $3 / 4^{\prime \prime}$ long. Individually boxed. Cat. No. LP-8 8 ohms LP-16 16 ohms

$$
\$ 1.95
$$

## MULTIPLE

SPEAKER SWITCH for Constant Impedance
Circuits
A constant impedance multiple speaker selector switch selects, from one to six speakers, keeping impedance constant with proper 2 watt resistors in circuit. Uses six SPST slide switches, mounted on brass plate. With instructions. Individually packaged. $31 / 2^{\prime \prime}$ long, $25 / 8^{\prime \prime}$ wide, $1^{\prime \prime}$ deep. Cat. No. CSS-1

$$
\$ 2.39
$$

3-SPEAKER, 7-WAY WALL PLATE SELECTOR SWITCH

Speaker selector switch mount on brass wall plate, fits standard single wall boxes. Selects speakers; 1 or 2 or 3 , or 1 and 2 , or 1 and 3 , or 2 and 3 , or all. Marked screw terminals. Instructions included. Individually packaged. $41 / 2 \times 23 / 4 \times 21 / 4$ " deep Cat. No. CSS-2
$\$ 2.79$

## ACA Music Master

For use with all American type record players.
Will automatically shut off all of the hi-fi system as soon as the last record has been played on any automatic turn table. No attention need be payed to your hi-fi system once this unit has been installed. Installation is simple as every item of your system plugs into the ACA.


## ACF Music Master

For use with all Foreign type record changers. Will automatically shut off all of the hi-fi system as soon as the last record has been played on any automatic turn table. No atmention need be payed to your hi-fi system once this unit has'been installed. Installation is simple as every item of your system plugs into the ACF.
$\$ 5.95$

Audio Mixers
Permits balancing of any two individual-audio inputs into one output enabling user to mix 2 microphone inputs into highgain input. Separate balanced gain controls. (2) included.

## 

Cat. No. AM-3
Has standard RCA type pin plug output from two RCA type input jacks. long x $1 / 1 / 6^{\prime \prime}$ wide $\times 1 / 10$ " high.


Car. No. AM-4
Has standard phone plug output from wo single RCA type input jacks. No wiring or cables needed. Size: $25 / 8$ long $\times 17 / 6^{\prime \prime}$ wide $\times 1 / 16^{\prime \prime}$ high.

: 339

Cat. No. AM -5
Has standard phone plug output from wo closed circuit input jacks. No wiring or cables needed. Size: $25 / 8^{\prime \prime}$ long $x$ $17 / 6^{\prime \prime}$ wide $\times 13 / 6^{\prime \prime}$ high.


Stereo "L" Pad
A dual stereo "L" pad with single knob control for maintaining proper output level enabling the amplifier providing positive equal audio power to each speaker. Has $7 / 8$ inch threaded bushing. Cat. No. SLP-8, 8 ohm SLP-16, 16 ohm

## HI-FI PHONO CABLE CONNECTORS



Male RCA type phono plug, one end, and Std. Slim 2 -way phone plug on other.
Cat. No. IC-72 72" length $89 c$


Male RCA type plug, one end, and Std. 2-way Barrel jack on other.
Cat. No. EX-72 72" length
$99 c$

## Jumper Cables <br> 

Male RCA type pin plub both ends.
Cat. No. Length Cat. No. Length
JC-36 36 inches 69 cJC -72 120 inches 89 c
JC-48 48 inches $74 \mathrm{C} \mathrm{JC}-120 \quad 120$ inches 99 C
JC-60 60 inches 79

Male Std. Slim phone plug, one end, and RCA type female inline jack on other.
Cat. No. IC-73 72" length


Std. Slim 2-way male phone plug, one end, and Std. Barrel 2-way phone jack on other.
Cat. No. XT-72 72"' length


Extension

## Cables

Male RCA type plug one end; Female
Shielded RCA type receptacle on other.


EC-60 60 inches 82 ec

PG-22 Stylus Pressure Gauge
Measures stylus pressure accurately at the turn-table-from 0 to 30 grams. Aluminum alloy with steel pivots. Indicates any excess or insufficient tracking weight, resulting in wear or


## NC -1

Needle Checker
Optical instrument for critical examina tron of stylus tips, record grooves, etc Approx. 50 power magnification show any flaws or signs of wear. Front lens threaded for fine focus. Black with damage to the record.

## RB. Carry Camel Hair Record Brush

Cleans record groove ahead of the needle. Reduces noise; protects the record. Clips to most pickup arms, entirely automatic in operation

PN-8A Sapphire All-Groove Needle

## -MG

## Cal rad

Phono Needle
Microgroove replacement stylus for
Rosette type $33-45$ cartridges. Sapphire
1 mil stylus;

1.49
nickel trim. $33 / 4^{\prime \prime}$ long, $1 / 2^{\prime \prime}$ diameter. $\$ 1.39$


REG.
\$/50
Offset shank compromise needle for all speeds. Use with pick-up having thumbscrew. Diameter of $.002^{\prime \prime}$ for $16,33,45$ and 78 rpm user.


## UL 8

beaker control mounted on brass wall plate will fit any standard out box. Has 8 ohm L pad. Closed Cat. No. WL-8

## NL 16

er control mounted on bras plate will fit any standard out et box. Has 16 ohm L pad. Closed circuit jack mounted below L pad Cat. No. WL- 16


SAN FERNANDO VALLEY RETAIL STORE and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD
NORTH HOLLYWOOD, CALIFORNIA • STanley 7-2113 - POplar 6-8668
OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6


We can't mention the name of the manufacturer, but you will recogmize it as one of the oldest and finest names in the business. Only Columbia's huge buying power can make prices such as these possible. Each stylus is painstakingly ground to the most exact tolerances possidle, then subjected to rigeruos inspection. Individually packaged in clear plastic box on foam cushion. Fully guaranteed.

TRULL THE FINEST.
Single Diamonds. $\$ 4.39$
Diamond Sapphire
Combinations. $\$ 5.95$
Dual Diamonds $\$ 8.95$
Sound-Flo and
Power Point
Diamond Staph. $\quad \$ 9.95$
Be sure to give cartridge no, or better yet enclose old stylus.
We will return it with your order.
ALL TYPES ARE IN STOCK

* a few styles are slightly higher
\$23.37
(8) New! Stereo Classic STEREO CARTRIDGES


The fabulous new Monarch STEREO record changer. Has four speeds and four pole motor for noisless operation. The monarch gently lowers the record to the rubber protective mat and automatically selects the proper size. A heavy weighted turntable assures freedom from rumble, wow and flutter. Your Monarch will be shipped complete with instructions, hardware, 45 rpm spindle and dual sapphire turnover stereo cartridge. Check Columbia's price against any in the country.
的 (9)

VR-II Triple Play Magnetic Cartridge $\$ 14.95$
Latest model of the world famous G. E. Variable Reluctance cartridge 。 New "Slim Look' design and mumetal shielding. Special anti-hum coils allow this cartridge to be used confidently with any changer or tone arm. Unaffected by heat or humidity. Independently replaceable clip in tip stylii allow needles to be changed in seconds. Frequency response 20$20,000 \mathrm{cps}$. Tracking pressure $4-5 \mathrm{gm}$ With 3 mil sapphire \& 1 mil diamond.
A FANTASTIC BONUS BUY ! ! !


C-501-S (Sapphire)

MONARCH
CHANGER LATEST MODEL


* FOUR POLE MOTOR
* AUTOMATIC INTERMIX
* FOUR SPEED OPERATION
* CAST ALUMINUM TONE ARM
* LATEST TYPE STEREO CARTRIDGE
* RIBBED RUBBER TURNTABLE MAT
* PLAYS MONOURAL TOO!

LOWEST PRICES ON RECORDING TAPE


 cision stylus inspectron microscope.

WHOLESALE - RETAIL STORE
2251 WEST WASHINGTON BLVD.

## LATEST RELEASEatColmmbus unal Priees



## $\longrightarrow$ ELECTROSTATIC 3 ELEMENT <br> CONDENSER TWEETER

## GRILLE CLOTH

 For that Hi-Fi speaker cabinet. Beautifully made by Mellotone. 36 in wide.Metallic $\$ 1.50$ per foot Black with gold Black with silver Brown with gold Tan with Gold within the cabinet.

## Non-metallic

 $\$ 1.25$ per foot $\$ 3.50$ per yardTan or dark brown

## WILcox $G$ GIV



MODEL FX 300
TAPERECORDER

1. An excellent 2 -speed ( 7.5 and 3.75 ips ) recorder and reproducer. The 7.5 ips speed is used for high fidelity recording and reproduction. With the two permanent dynamic speakers at the sides, you
can enjoy thrilling audio reproduction that only permanent dynamic speakers at the sides, you
can enjoy thrilling audio reproduction that only the finest equipment could give.
The 3.75 ips speed is used for speech and "dictation" recording and reproduction.
2. An extremely functional dictating and business machine. During recording and reproduction, tape motion can be easily stopped and/or played back instantly by means of a Remote Switch, enabling the operator to use the tape supply to its maximum advantage, without wasting valuable footage. 3. Your FX- 300 comes equipped, with an Earphone,
enabling you to monitor the quality of sound durYour FX- 300 comes equipped, with an Earphone,
enabling you to monitor the quality of sound during recording. During reproduction, you can use it conveniently to hear the recorded sound without disturbing others.


## $$
\$ 109.95
$$ <br> <br> $\$ 109.95$

 <br> <br> $\$ 109.95$} instantly by means of a Remote Switch enablingThis Electrostatic Tweeter is supplied with a crossover network and matching built-in transformer to connect either to an 8 or 16 ohm impedance output. The power supply is included within the Electrostatic Tweeter to operate from a 117 Volt 60 cycle AC power supply. Response is from $3,300 \mathrm{cps}$. to beyond $20,000 \mathrm{cps}$. with excellent transient response. For wide dispersion three electrostatic condenser tweeters are accoustically placed
4. It also comes equipped with a tiny, but efficient crystal microphone of high sensitivity, permitting quality sound recording. The microphone is fitted with a special metal supporter, enabling you to place it either on the table, or on to your coat lapel by means of a clip.
5. For greater home enjoyment, your FX-300 comes with a set of Patch Cord, making it possible for anyone to record hi-fidelity music directly from the phonograph, radio or television receiver.



## 100-C Slim Crystal Microphone

Our Sales Leader in microphones. Smooth, rounded design tapering from $11 / 8^{\prime \prime}$ diameter for easy hand-held use. Has detachable shielded cable and slide on-off switch. Frequency range, $100-9,000 \mathrm{cps}$; sensitivity -52 db ; high impedance. Excellent for voice or music. Satin chrome finish case.

## 400-C <br> Crystal Hi Impedance 4.95 Mike

Impressive appearance and performance. For general use and home recording. Semi-directonal, head tilts to vertical for non-directional use. High output, -52 db ; essentially flat frequency response from $100-8,000$. Compact size- $25 / 8^{\prime \prime}$ diameter $\times 41 / 4^{\prime \prime}$ long $\times 41 / 8^{\prime \prime}$ high. Complete with $5 / 8^{\prime \prime}-27$ mounting thread and shielded cable. Silver grey baked enamel with chrome trim. Individually boxed.

500-C Broadcast Type Crystal Microphone
Two separate phased crystal units mounted vertically for true $360^{\circ}$ omnidirectional pickup. Perfect for group and conference use; speaking, singing, or instrumental. Sen-sitivity,-50 db. Brass construction, beautifully finished in chrome and black. Frequency range, $80-8,000$. Width, 3 "; height, $7^{\prime \prime}$. Mounting thread, $5 / 8^{\prime \prime}-27$. Individually boxed with shielded plastic covered cable.


CM -75
Hand Carbon Mike
Complete with "push-to-talk" switch and cable attached. For PA and mobile use. Internal resistance- 100 ohms. 70-7,000 cps ; sensitivity- 50 db . Brown plastic case; fits the hand, has loop for hanging.

DM-12 Slim

## Dynamic

## Microphone

High-style design dynamic mike with excellent characteristics; for night-club, PA, and other uses where a high quality pickup of both voice and music is needed. Hi-impedance- 50 K ohms-with a flat ferequincy response from 60 to 12,000 ; sensitivity - 52 db . Streamline cobra design with satin chrome finish. Threaded for $5 / 8^{\prime \prime}$ with satin chrome finish. Threaded for $5 / 8^{\prime \prime}$
-27 mike stands. Complete with cable and mike connector; on-off switch.

$50 .{ }^{6}$
9.95


## MH-100 Mike Holder

For $100-\mathrm{C}$ Microphone. Swivel cradel adapts Calrad 100-C Mike and other similar mikes for use on standard floor and desk stands. Has $5 / 88^{\prime \prime}$ 27 thread in base and felt padded friction clamp jaws for holding mike. Beautiful chrome plated finish adds to appearance and utility of any microphone.
$95 c$
DM-11 Dynamic

## Microphone



Modern, tastefully in tegrated design mike and stand. Wide range flat response from 60 to 12,000 cps. Omni-directional pick-up - sensitivity $-54 \mathrm{db} ; 50 \mathrm{~K}$ ohms impedance. Stands vertically or tilts in any direction from wide base desk stand. Removes from desk stand and attaches to floor stand with $5 / 8^{\prime \prime}-27$ thread adapter provided. Finished in blue mist metallic lacquer with chrome trim. Supplied with shielded plastic covered cable, and packed individually. An elegant, yet practical instrument. moves from weighted non-tip desk stand for hand use. Rugged dynamic design with frequency response of 80 $8,000 \mathrm{cps}$. Sensitivity, -56 db ; 50 K ohm impedance. Finished in black with chrome trim, mike is $71 / 2^{\prime \prime}$ long and $11 / 8^{\prime \prime}$ in diameter. Comes with builtin on-off slide switch and shielded plastic covered cable.


Small, rugged mike with moisture-proof crystal in chromed die-cast case. Has alligator type clip for lapel use. Non-directional, with -55 db sensitivity, and a response range of $200-8,000 \mathrm{cps}$. High impedance mike has shielded plastic covered cable attached. Size, $15 / 8^{\prime \prime}$ diameter $\times 3 / 4^{\prime \prime}$. For general speech use, or expertmental work.

## ${ }_{\text {crustal }}^{\text {cc. } 1} \ddagger 3.49$

 Contact MikeFor musical instruments. Pickup is by direct contact with sounding board of instrument. Frequency response, $40-9,000 \mathrm{cps}$. Attaches without toolswill slip under bridge of string instruments. Complate with shielded cable and phone plug.


Slim style mike adjusts to optimum angle and readily rethread. Beautiful Brown Hammertone finish, chrome trim gray shielded. plastic covered table.

# COLUMBIA ELECTRONIC SALES 

 MAIL ORDER DEPT.WHOLESALE - RETAIL STORE

Compact rectangular style case; ideal for home recorder applications, Hi-impedance crystal mike sits on desk, fits in hand, and is threaded for $5 / 8$ " -27 mike stands. Amazing performance - 80-9,000 frequency range, - 50 db sensitivity, very stable. Sturdy metal case is finished in Gunmetal Grey. May be easily concealed in pocket.

700-C Crystal Microphone


4-WAY Dynamic Mike and Stand

A versatile microphone with desk stand and neck cord provided; $5 / 8^{\prime \prime}-27$ thread for floor stand. May also be used as hand mike because of its compact taper form. Hi-impedance, 50 K ohms, omni-directional dynamic design; sensitivily, -60 db ; frequency response, 120-9,000. Complete with stand, neck cord, and shielded plastic covered cable. Individually packaged. Light blue hammertone finish with chrome trim.

KEYS•EARPHONES•HI-FI HEADSETS


# Panel Meters - Multi-Testers 

## TL-50 All-Purpose Test Lead Kit



Red and Black $41 / 2^{\prime \prime}$ plastic handle pin prods, with heavy duty $5,000 \mathrm{~V}$ insulation, $35^{\prime \prime}$ 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.


D'Arsonval type movement panel meters with $15 / 8^{\circ}$
square face bakelite case. Meters fit into $11 / 2^{\prime \prime}$ diameter square face bakelite case. Meters fit into $11 / 2^{\prime \prime}$ diameter Black bakelite case, with silvered dial and black numerals. Indicator hand and dial protected by clear glass. These meters are calibrated to be accurate within $2 \%$. Have zero set screw adjustment.
Calrad Plastic front panel meters enable the user to have an extremely readable scale. Clear meter face is unbreakable and easy to clean. Will enhance the beauty on any equipment on which it is used. $11 / 2$ inch square.


## Clear Plastic Face Meters "DC" MICROAMMETERS Specify Range



"DC' VOLTMETERS
"AC'" VOLTMETERS Cat. No.
CCO-38
'DC' AMMETERS Cat. No.
CMO
Range
0.15
0.150

| Specify Range |  |
| :--- | :--- |
| 0.200 | $\mathbf{2 5}$ |
| 0.300 |  |
| 0.500 |  |

Specify Range
425
Specify Range
Range
0.10 amp $0-30 \mathrm{amp}$ DC


Standard Face Meters "DC" MICROAMMETERS


|  | Cat. No. | Range |  |
| :---: | :---: | :---: | :---: |
|  | MO-38-2 |  |  |
|  |  | 0.10 0.100 | 395 |
|  | Specify | - $\begin{aligned} & \text { 0.100 } \\ & 0-200\end{aligned}$ |  |
|  | Range | 0.300 |  |
|  |  | 0-500 |  |
| "DC" | VOLTME |  |  |
|  | Cat. No. | Range |  | MO-38-1

Specify

Range " $A C$ " VOLTMETERS | Cat. |
| :--- |
| $\mathrm{CO}-3$ | Specify Range

## "DC" AMMETERS

Cat. No.
MO- 38
0.15
0.30
0.200
0.300
0.500

395

395
Range
$0-10$ a
$0-10 \mathrm{amp}$ DC
0.30 amp DC

The Calrad Audio Level Indicator is designed for use with Audio equipment indicating correct output level thus preventing accidental overload with resultant distortion. A range control provided on meter permits $100 \%$ level at any desired power. Connect leads from Indicator to high impedance output jack of pre-amplifier, or speaker terminals at rear of amplifier. Adjust range control for power level desired.

Input-AC.DC (Maximum 400 Volt DC) High or low impedance.
Scales- 20 to plus 3 db and $0-100 \%$.
Size- $37 / 8^{\prime \prime}$ long, $23 / 8^{\prime \prime}$ wide, $13 / 8^{\prime \prime}$ high.
$5^{18}-95$

## SO-38 "'S" Meter

Gives accurate measure of signal strength. A necessity for the amateur operator and SW listener, for giving signal reports and

## Audio <br> Level Indicator Model A1-5

 A dual visual audio level indicator affording positive and visual balance indication between two channels of a stereo system. Either record or playback In addition stereo level indicator provides indication of power level preventing accidental overloading of either channel.Connect one pair of leads from indicator to high impedance output jack of each pre-amplifier tape recorder outputs, or speaker terminals on rear of amplifier, throw switch to calibrate position. Then adjust each range control for the desired power level indication, making sure scale readings are identical. When switch is in normal position correct operation is indicated by equal readings.

Input-AC-DC (Maximum 400 Volts DC) High or low impedance
Dual Scales- 20 to plus 3 db and $0-100 \%$
Size- $6^{\prime \prime}$ long, $3^{\prime \prime}$ wide $\times 13 / 8^{\prime \prime}$ high. 95


## -

 tuning receivers. Meter has a basic movement of $0-1 \mathrm{~mA}$. Calibration is from 0 to9 " S " units, +10 to +30 db , and the full scale value of 1 mA is divided equally from 0 to 5 and $0-10$ on dial face. $\$$



VO-38 VU Meter
-20 to +3 and $0-100 \%$
standard markings. 5595
Insulated Alligator Clips Cat. No. AC-10 Red or black plastic body clips with metal teeth. Fully insulated, convenient thumb-grips. Solder lug for attaching lead. Overall length $13 / 4^{\prime \prime}$. Specify color. 15 c
AC-5 Plated Alligator Clip
Strong grip jaws plain alligator clip. For use in all types of testing equipment. Designed with a long thin nose to fit close areas or hard to get at places. 2 inches long. With screw 10 c


## TK-30A Multi-Tester

 1,000 Ohms per Volt sensitivity DC. A midget type volt-ohm meter having an easy-to-read direct reading dial-an excellent instrument for school, industrial, and service use. Reads AC or DC Volts in ranges of: $0-15,0-150$, and $0-1,000$ Volts. Current is read from $0-150$ ma. DC. Direct reading scale measures $0-100 \mathrm{~K}$ ohms DC. Handy zero adjustment. Bakelite case measures $4 \times 21 / 4 \times 13 / 8^{\prime \prime}$. Test leads, self-contained batteries and instruction sheet included.

TK-20 20,000 OHM
Multi-Circuit Tester $\$ / 695$
Sensitivity of 20,000 ohms per volt DC-10,000 ohms per volt AC. Complete with test leads, batteries, and zero adjustment. Size $51 / 8 \times 35 / 8 \times$ $21 / 8^{\prime \prime}$. Has following ranges on scale: DC Voltage- $1200 \mathrm{~V}, 600 \mathrm{~V}, 120$ $\mathrm{V}, 30 \mathrm{~V}, 6 \mathrm{~V}$, at 20,000 ohms per volt seisitivity. AC voltage- 1200 V , $600 \mathrm{~V}, 30 \mathrm{~V}, 6 \mathrm{~V}$, at 10,000 ohms per volt. DC current- 60 ua at 1.2 ma, $12 \mathrm{ma}, 300 \mathrm{ma}$. ResistancesRx1, R $\times 10$, Rx100, Rx1000 ohms. Decibels:-20 to 17. Capacitance: . 005 - .01 uf. Inductance- $30-3,000$ Henrys.


Sensitivity-2,000 ohms per volt, DC. Reads AC or DC volts in 5 ranges: $0-10,0-50,0-250,0-500$ and 0-1,000 Volts. Direct reading of Ohms, $0-10 \mathrm{~K}$ and $0-1 \mathrm{Meg}$ through multiplier. Direct reading of decibels to 24 db at 10 Volts DC; 36 db at 50 Volts $A \mathrm{C}$. Current is read in three ranges: $0.25,0-500$ mA , and $0-500 \mathrm{uA}, \mathrm{DC}$. Easy to read dial faces. Meter has sturdy steel case, $51 / 4 \times 31 / 2 \times 11 / 2^{\prime \prime}$, with bakelite face. Panel switch has selfwiping contacts. Meter is packed with test leads, self-contained batteries and instruction sheet for easy reading of circuit values.

## Steam Powered Radio.Com

COLUMBIA NOW OFFERS TWO OF THE LARGEST ELECTRONIC STORES AND WAREHOUSES TO BETTER SERVE THE ELECTRONIC FIELD. THOUSANDS OF INDIVIDUAL ITEMS AVAILABLE TOO NUMEROUS TO CATALOG. PLEASE SEND YOUR REQUESTS FOR PROMPT QUOTATIONS.


## ORDER N OW!| usethis SPEEDY ORDER FORM



Chelecronic SALES
AIRCRAFT-RADAR EQUIPMENT • SURPLUS RADIO PARTS \& SUPPLIES • SHORAN • LORAN

HI-FI-STEREO-COMMUNICATIONS
2251-53 WEST WASHINGTON BOULEVARD - LOS ANGELES 18, CALIFORNIA - REPUBLIC 1.2206


# HYGFince TRANSFORMERS 

Saturating Reactor: Bendix \# A117016; Primary 0 ADC/ . 010 ADC to $\mathrm{Z}=$ 3000 ohm / $\mathrm{Z}=180$ ohm.
Size: $23 / 4 \times 23 / 4 \times 41 / 2$; Fully
cased and potted...........\$'2. 49

Selenium Rectifier Transf. 110 v. pri. Sec. 37-42-47v @ 5 amp . marked 2 amps but puts out 5 Square case potted. new $\$ 1.95$

Dynamic Mike Input transformer. Thordarson \# ST-1005. 50K C.T. primary to 8 K secondary. Fuliy cased and potted. 95


AUDIO OUNCER Transformer Triad \# JO-12
15 Kohm Plate to 60 K ohm C.T. to Push-pull grids. 45db shielding. Size: 1 inch round by $13 / 4$ high. New in Triad box........... $\$ 2.49$

PEERLESS Audio Choke. 2.i Henry @ 1000 cycles 3 ma . 120 ohm ; 500 volt insulation. Size: 1 inch round x $13 / 8$ high.
Fully cased and shielded..... $49 ¢$
SWINGING CHOKE
4-12 Hy @ 300 ma .
Made by Chicago for Collins.
Fully shielded and potted; these
are BRAND NEW and only \$ 3.95

Instrument Isolation Transformer \# 23011; Primary 115 VCT @ 7 ma .
Secondary 110 VCT @ 1 ma.
Size: $13 / 4 \times 13 / 4 \times 31 / 2$ high;
fully cased and potted............\$1.00


## 866A FILAMENT

## TRANSFORMER

Completely hermetically sealed. The most beautiful 866A filament transformer we have ever handled. Primary: 115 VAC at 50 to 60 CPS. Secondary: $2-1 / 2$ volts at 10 amps . Insulated for 12000 volts insulation. Units are oil filled. Dimensions: Only $5^{\prime \prime}$ high x 4-1/2" wide x $3^{\prime \prime}$ deep. New, unused in original mfgs cartons Weight: 6 lbs 4 oz.


Filament Transformer Pri. 117 v. 60 cyc. Sec. 12 v. 3-4 amps. hermetically sealed. Jan terminals.
A Columbia special at $\$ 1.49$

## \# 20194

Primary: 110 volt 60 cycle.
Secondary \# 1680 vct @ 140 ma .
Secondary \# 2 volts @ 3 amp
Secondary \# 3 6.3 v @ 1.5 A
Secondary, \# 46.3 v @ 3 amp
Fully shielded horizontal mounting.
Size: $33 / 4 \times 41 / 2 \times 31 / 4$;
Made by Acme.............. $\$ 3.49$

## \# V-6198

Primary 110 volt 60 cycle.
Secondary \# $1 \quad 700$ vct @ 150 ma . Secondary \# $2 \quad 6.3$ vct @ 2.7 amp Secondary \#3 5 vct @ 3 amp Fully cased and potted up mounting. Size: $4 \times 31 / 2 \times 41 / 4$; Made by
Vernon. $\$ 2.49$

HI-FI Audio output transformer. \# T-24037. 25 Watt. Primary 6600 ohm C.T. for 6 L 6 or 5881 . Secondary 8 \& 16 ohms. Frequency response: 30 to 20,000 cycles + or -3 db . Size; $33 / 4 \times 31 / 2 \times 41 / 2$; Fully cased and potted....... $\$ 5.88$

## Price <br> \$3.95



## PRICE

$\leqslant 3.95 \mathrm{ea}$ 3 FOR $\$ 10.00$

## Transformers \& Chokes

32 H @ 40 ma .540 ohm , potted, small. New 39¢ $3 / \$ 1.00$ $10 \mathrm{H} @ 150$ ma 150 ohm 2 kv ins. Haldorson, potted. $\$ 1.493 / \$ 4.00$

Interstage Transformer. UTC \# LS-20
Ratio 2:1 Single plate to screen grid. Primary $8000 / 15000$ ohm
Secondary $60,000 \mathrm{ohm}$.
Size! $23 / 4 \times 31 / 4 \times 31 / 2$. Fully
cased and potted. $\qquad$ .\$ 2.49

## IF Transformers

85 kc . from R-23/ARC-5 \$1.95 ea $3 / \$ 5.00$
1200 kc from DAS-1 $29 ¢ 4 / \$ 1.00$ 1415 kc from R-26/ARC-5 95¢ ea.
$3 / \$ 2.50$
1415 kc from TBX $49 ¢$ ea. 4300 kc from GRC recvr $39 ¢$ ea. $3 / \$ 1.00$


Plate Transformer
1000 volt each side C.T. 200 ma . Hermetically sealed. ceramic terminals. Primary 115-230 v. 60 cycles. Special $\$ 6.95$

HI-FI Audio Output Transformer. *T-24038. I5 Watt. Primary 8000 ohm C. T. for 6V6. Secondary 8 H 16 ohm. Frequency Response : 30 to 20,000 cycles essentially flat Size: $23 / 4 \times 3 \times 4$; fully cased and potted........................... $\$ 3.88$

## PESISTORS．CONDENSER SWITCHES•SOCKETS

SPECIAL－BUY！

$\underset{\text { SELL }}{ }$ SEARCH LIGHT LESS BATTERIES $\rightarrow$ d REPLACEMENT SOCKETS



|  |  |
| :--- | :--- |
| S．P．S．T． | $29 ¢$ |
| S．P．D．T． | $37 ¢$ |
| D．P．S．T． | $36 ¢$ |
| D．P．D．T． | $42 ¢$ | write for quean．discounts．

Rotory，canopy type
switch．SPST with
wire leads． 396
3 fOR $\$ 1.00$

12 POLE
3 POSITION 39
SWITCH SWITCH
RED PANEL LIGHT ASSEMBLY，MIN．BAYONET BULB REMOVEABLE FROM 3 ea．


Push Button Switch normally open，spst momentary contact type．
（a）YOUR CHOICE Qc 12 FOR $\$ 1.00$ Disc Ceramic Capacitors

## 2.5 mmfd ．

| 10 | 47 mmfd |
| :--- | :--- |
| 15 | 100 |
| 22 | .0015 mfd | 4 OUTLET WALL $89_{c}$

TAP．BROWN． OUBLE OUTLET FOR WAR BOX 5.50
BROWN 10 FOR 5.5


## TOGGLE SWITCHES

These brand new，bat handle toggle switches are priced to save you money．
毗 39 $12 c$ TYPE SIDE HOLE． 5 FOR 49 C OR WALLBOX $69 c$

Moulded plastic tubular $\begin{array}{ll}.0015 \mathrm{mfd} & .015 \mathrm{mfd} \\ .002 & .068 \quad \text { Q }_{\text {eq．}} \\ .0033 & .15 \\ .0068 & .33 \quad 1\end{array}$ YOUR CHOICE 12 FOR $\$ 1.00$ 4 FOR $\$ 1.0^{\circ 0}$

ALL 600 V

## Sima Moulded Tubular

Extra heavy duty constr－ unction to withstand extremes of heat moisture and shock， yet miniature in size 。


Quantity prices available 。
Allen Bradley Resistors $10 \%$ tolerance

DID


Price：1／2 watt 10¢̧a．

$$
1 \text { watt } 13 \text { ea. }
$$

2 watt 19¢ea。
specify values required
SPECIAL ！SPECIAL ！ Popular size 500，000 ohm pot with extra long shaft． stock up now and save．

## Coumberan SELLSESS! <br> <br> TRANSISTOR COMPONENTS

 <br> <br> TRANSISTOR COMPONENTS}

K-300 Six Transistor Super-Het Kit
Complete kit and circuit diagram with parts including leather case, $21 / 2^{\prime \prime}$ speaker, and earpiece for private listening-plug and closed-circuit jack included. Everything you need, LESS TRANSISTORS, BATTERIES AND DIODE. Stiff leather handle may be used as a stand for supporting set at an angle. A tremendous value with amazing performance, sensitivity and selectivity. All parts are of miniature or sub-miniature size making a set $6^{\prime \prime} \times 35 / 8^{\prime \prime} \times 15 / 8^{\prime \prime}$. Ideal for schools, amateurs, or hobbyists wishing to build their own transistor radios. Pushpull output. Uses 1-RCA 2N 140, 2-2N 139, and 32N109 Transistors, plus RCA 1N 64 or 1N 34 Diode, or equivalent parts of another brand. Each kit packaged separately. Uses four $11 / 2^{\prime \prime}$ Volt penlight cells as power source.

36 | MJ-27 |
| :--- |
| Miniature Jack |
| Black ribbed plastic 2-way minia- |
| ture in-line jack. Solder terminals. |

PJ-28 Shielded
Miniature Plug and Jack
2-way miniature shielded plug and
losed-circuit jack. Plated finish.
Solder terminals.

## Miniature Bakelite

Plug and Jack
2-way plug in either black or red. Closed-circuit jack included.

## Sub-Miniature Plug and Jack



Red or black bakelite 2 -way plug with closed-circuit jack. Plug is $1 / 4^{\prime \prime}$ dia. x $11 / 4^{\prime \prime}$ with $1 / 8^{\prime \prime}$ shaft. Jack extends only $3 / 4^{\prime \prime}$ behind panel and will mount on panel up to $3 / 16^{\prime \prime}$ thick. Solder termi-
nals and cable clamp. ans and cable clamp.

496
TV-100 MINIATURE VOLUME CONTROL Less switch-for transistor and sub-minia-
ture tube applications. Only $3 / 4$ "dia. 00.4
inch including, threaded shaft. Use with
radios, hearing aids, etc.
Specify range desired.
0-2500 ohms
$\begin{array}{ll}0.5000 & 0.500 \mathrm{~K}\end{array}$
0.10 K

Cat. No. TV-100

Ideally suited and selected for building radio and amplifier sets with standard type transistors. High vacuum impregnation and application of a special coating, seals the coils. To attain such excellent characteristics in so small a transformer, a special core of hydrogen heat treated alloy is used. High quality at low cost. Compact-CR-60 is $1 / 2^{\prime \prime} \times 1 / 2^{\prime \prime} \times 1 / 2^{\prime \prime}$, others are $3 / 4^{\prime \prime} \times 5 / 8^{\prime \prime} \times 5 / 8^{\prime \prime}$. Color coded wire leads. Instruction sheet and circuit diagram included with each transformer.


Cat. No. CR- $60 \frac{1}{2} \times 1 / 2 x^{1 / 2 \prime \prime}$
Input. Pri. 20,000 ohms,
Input. Pri. 20,000 ohms,
sec. 1,000 ohms impedamce, SC resistance: Pri. 1.32 K YOUR CHOICE
3 FOR $\$ 2.49$
Cat. No. CR-70 $3 / 4 x^{5 / 8} x^{5 / 8} 8^{\prime \prime}$ Driver. Pri. 10,000 ohms, Sec. 2,000 C.T. DC re-
sistance: Pri. 700 ohms, sistance: Pri. 700 ohms,
Sec. 127 ohms. ohms, Sec. 90 ohms.

Cat. No. CR-80 $3 / 4 \times 5 / 8 \times 5 / 8^{\prime \prime}$ Output. Pri. 500 ohms C.T., Sec. 3.2 ohms. DC resist-
ance: Pri. 43 ohms, Sec. 0.27 ohms.

Molded mica, filled phenolic rectangular sockets with snap-on mounting clip. $1 / 4$ " high x $3 / 16^{\prime \prime}$ wide $\times 3 / 8^{\prime \prime}$ long overall. Plated contacts and solder terminals for positive low resistance connection.
1 Sceach 10 FOR\$1. 29
TRANSISTOR
OSCILATOR COIL

| TRANSISTOR <br> OSCILATOR COIL <br> Unshielded, 5 wire type. Use 100-125 mmf oscillator cut-plate section variable condenser; or use with a 2 -gang 365 mmf variable condenser and a 400 to 500 mmf series padder. 540-1650 KC. Sizes $5 / 16^{\prime \prime}$ dia. $\times 3 / 4^{\prime \prime}$. Cat. No. OC-1 |
| :---: |

## 455 KC. I.F.'S AND <br> Available Separately

Identical to those shown above. 5 prong plug-in or wire type. Slug tuned, ferrite core, shielded I.F. coils. Engineered for maximum perform ance with transistors. $3 / 8^{\prime \prime}$ square x $5 / 8^{\prime \prime}$ high.

| Cat. No. | Description |
| :---: | :---: |
| PV-103 | 1 st I.F. |
| PV-104 | 2nd I.F. |
| PV-105 | Shielded Osc. Coil tunes with CR-200, Variable Condenser |

## MINIATURE TRANSISTOR

 I.F. COILS5 -prong plug-in or wire type. Slug turned, ferrite core shielded I.F. coils. Engineered for maximum performance with transistors. $3 / 8^{\prime \prime}$ square x $5 / 8$ " high. Frequency 455 KC . Cat. No. TR-102-1 st Stage I.F.
Pri. 25,000 , sec. 600 ohms. Pri. 25,000, sec. 600 ohms. Cat. No. TR-103-2nd I.F. Pri. 25,000 ohms, sec. 1000.
$89 c$


PM-1 $1 / 2$ Miniature PM Speaker
$11 / 2^{\prime \prime}$ diameter, $1^{\prime \prime}$ deep. Especially designed for tiny equipment. Amazing tone quality in a small package for-transistor and sub-miniature tube applications. Wide response. Precision manufacture. Ideally suited for pocket radios, miniature amplifiers, etc. 3.2 ohms impedance.
$\uparrow$. ${ }^{29} 3$ FOR\$5.50
PM-2 2-inch Miniature PM Speaker
Extremely well-built Miniature Speaker with heavy Cadmium plated frame and fully enclosed pot cover. Full range response. $2^{\prime \prime} \times 2^{\prime \prime} \times 1 \frac{1 / 8^{\prime \prime}}{}$, overall size. Convenient solder lugs for connection. 3.2 ohms voice coil. For transistor or tube cir cuits. Good, clean audio from a compact, cuits. Good, cler

## CONDENSERS <br> MIDGET VARIABLE CONDENSER WITH DIAL

Single condenser for all transistor and RF uses. 365 mmfd capacity. Single hole mount in $5 / 16^{\prime \prime}$ hole. $1^{\prime \prime}$ square $\mathrm{x} 1 / 2^{\prime \prime}$ deep. $11 / 4^{\prime \prime}$ diameter clear plastic dial with gold letters and knurled edges for easy tuning. Cat. No. CR-210 ?

## MIDGET VARIABLE

 CONDENSERSame as CR-210, less dial. Has standard $1 / 4^{\prime \prime}$ solid shaft, $3 / 4^{\prime \prime}$ long. Single hole mount.
Cat. No. CR-22O
79.


Extremely compact single gang 365 mmf variable condenser. Ball bearing tuning action. Base or panel mounttuning action. Base or panel mount-
ing in space $1 / 6^{\prime \prime} \mathrm{w} . \times 11 / 4^{\prime \prime} \mathrm{h} . \times 1^{\prime \prime} \mathrm{d}$. ing in space $1 / 16^{\prime \prime}$ w. $\times 1 / 4^{\prime \prime}$ h. x $l^{\prime \prime}$ d.
Brass $1 / 4^{\prime \prime}$ shaft is $7 / 8^{\prime \prime}$ long, grooved for cutting to length. Individually boxed. Cat. No. CR-230

## 79 c

## SMALL 2-GANG

VARIABLE
CONDENSER
Designed specifically for transistor superhet application. Dust-tight plastic case mounts with 2 screws to panel, has two trimmer screws at rear. Plates rotate through $175^{\circ}$. Stable capacitance-Antenna section, 11 uuf to 235 uuf; Oscillator, 11 uuf to 111 to 235 uuf; Oscillator, 11 uuf to 111
uuf. $1 / 16^{\prime \prime}$ square by $5 / 8^{\prime \prime}$ deep. Shaft $1 / 4^{\prime \prime}$ diameter, $5 / 8^{\prime \prime}$ long. Cat. No. CR-200


## ELECTROLYTIC CONDENSERS

FOR TRANSISTOR AND MINIATURE APPLICATIONS
Small dry electrolytic tubular condensers for portable and miniature equipment. Sealed in tubular aluminum cases. Insulated with a vinyl plastic sleeve.

|  | 12 Volts Working |  |  |
| :---: | :---: | :---: | :---: |
| Cat. No. | Cap. Mfd. | Size D. X L. |  |
| TC-312 | 3 | $1 / 4^{\prime \prime} \times 3 / 4{ }^{\prime \prime}$ | .23 |
| TC-612 | 6 | 1/4"' ${ }^{\text {x }}$ | .24 |
| TC-1012 | 10 | $5{ }^{\text {c }}$ " $\times$ | . 29 |
| TC-3012 | 30 | $7 / 6^{\prime \prime} \times 7 /{ }^{\prime \prime}$ | . 33 |
| TC-115 | 15 Volts | Worki |  |
|  | 100 | $1 / 2^{\prime \prime} \times 1 \frac{118}{}{ }^{\prime \prime}$ | 39 |
|  | 25 Volts Working |  |  |
| TC-125 | 1 | 1/4" $\times 1 / 4$ " | 21 |
| TC-325 | 3 | 1/4" $\times 3 / 4$ " | . 23 |
| TC-625 |  | ${ }^{5 / 1{ }^{\prime \prime}} \times$ | 25 |
| TC-1025 | 10 | ${ }^{516}{ }^{\prime \prime} \times$ | 29 |
| TC-3025 | 30 | 7/16 ${ }^{11}{ }^{1 / 1}$ | 39 |



## MATCHED KIT OF

 MINIATURE
## TRANSISTOR COILS

All coils are shielded plug-in or wire type; 3 I.F.'s and one 455 KC Oscillator, carefully matched for building a six transistor receiver of high quality. High-Q loopstick included. Specification sheet and wiring diagram supplied with each coil kit.
Cat. No. Tunes with dual section 365
I.F.T. I.F.T. mmf. Variable Condenser. Uses Cat. No. Tunes with 2-Gan PV-2 CR-200. Uses PV.200
$\$ 3.95$
HI-Q LOOPSTICK ANTENNAS

Litz winding over high Q ferrite core. Flat, compact size- $35 / 8^{\prime \prime} \times 3 / 4^{\prime \prime}$ Used with transistor circuits. Cat. No. Tunes with Dual 365 mmf PV-100 Variable Condenser.
Cat. No. Tunes with 2-Gang PV-200 No. CR-200

TA-5 MINIATURE
TELESCOPING ANTENNA
For miniature pocket and transistor radios, Transceiver Applications and Amateur use Made of chrome plated brass, antenna has 5 sections-pulls out to 38 inches extension, plugs into jack provided. Re tracts to 9 inches for carrying in pocket. Flexible plastic case with protecting flap included.
Cat. No. TA-5 S

MINIATURE CONTROLS
WITH DPST. SWITCH


Designed to provide extremely smooth, quiet operation. Have semi-Log (audio) taper. Fits $5 /$ / $^{\prime \prime}$ hole in panels up to $1 / 4^{\prime \prime}$ thick, $1 / 4$ " shaft, "3/4" long, diameter $3 / 4{ }^{\prime \prime} \times 7 / 16^{\prime \prime}$ deep.


WHOLESALE - RETAIL STORE
2251 WEST WASHINGTON BLVD. LOS ANGELES 18, CALIFORNIA - REpublic $1-2206$ OPEN MON. \& FRI. TILL 9:00 P.M. - SAT. 9 TO 5:30

SAN FERNANDO VALLEY RETAIL STORE
and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.
NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668
OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6

SWITCHES•KNOBS•ACCESSORIES

Hi-Fi Control Knobs
Trim, functionally styled knobs in keeping with the best in Hi-Fi equipment. Fluted taper cylinder design, with aluminum ring in recessed face. For tuners, amplifiers, etc. Available in 3 sizes and 3 colors. Order by catalog number.


Radio Control Knobs
Beautiful, modern styling for all applications. Highest quality knobs of bakelite and plastic, with molded-in brass inserts and set screws for all standard $1 / 4^{\prime \prime}$ shafts. Supplied in sizes, shapes and colors as described below. Order by catalog number and specify quantity.



TS-10 SPST Switch
Bakelite case, bat handle, with chrome On-Off plate. Solder lug terminals. 125 V $-3 A$. Packed 10 to a box. $11 / 4^{\prime \prime} \times 5 / 8^{\prime \prime} \times 1^{\prime \prime}$
$\qquad$
Cat. No. Ts-10. deep to top of $3 / 8^{\prime \prime}$ bushing.
4 FOR 5100
TS-12 DPDT Switch
Bat handle switch with chrome On-Off Bat handle switch with chrome On-Off
plate. Bakelite case, six solder terminals. $125 \mathrm{~V}, 3 \mathrm{~A}$. Packed 10 to a box. $11 / 4^{\prime \prime} \times 3 / 4^{\prime \prime}$
$\qquad$ 3 FOR \$1. 29

TS-16 DPDT Switch
Bat handle center-off toggle switch with bakelite case. Red and black On-Off plate. Six screw terminals. Packed 20 to a box. $13 / 8^{\prime \prime} \times 3 / /^{\prime \prime} \times 13 / 8^{\prime \prime}$ deep. $125 \mathrm{~V}-6 \mathrm{amp}$, $250 \mathrm{~V}-3 \mathrm{amp}$ rating. $3 / 8^{\prime \prime}$ bushing.
$=\sqrt{0,}$

|  |  |
| :---: | :---: |
| Cat. No. | Action |
| TS-2 | SST |

TS-6 | TS. |  |
| :--- | :--- | :--- |
| DPS | nails. Std. |

 Body and insulated knob handle are of black bakelite. Overall size is $11 / 2^{\prime \prime} \times 23 / 8^{\prime \prime}$. Sturdy construction. Screw terminals. Individually boxed.
Cat. No. KS-2
SM-1 Super Magnet Motor No. 1
Dimensions: $13 / 8^{\prime \prime} x 1^{\prime \prime} x 1^{\prime \prime}$. Operates on one to three flashlight batteries ( $11 / 2$ to 4 V ), 3 V operating voltage. 600 rmp at 1.5 V to 5600 rpm at 3 V , no load. Weight: 2 oz . Individually boxed. Cat. No. SM-1

SM-2 Super Magnet Motor No. 2
More power than No. 1. $13 / 4^{\prime \prime} \mathrm{x}$ $11 / 4$ " $\times 1-3 / 16.11 / 2$ to $41 / 2$ Volts. No load speeds of 3300 rpm at 1.5 fader control. Front, rear or both can also be used as a volume control for any small speaker having a voice coil impedance of 4,8 or 16 ohms. $11 / 8$ " diameter.
$1 / 4^{\prime \prime}$ threaded bushing. $3 / 8$ " slotted knurled shaft. Supplied with nut and washer. Cat. No. VC-20

DPDT Slide Switch
Positive action slide switch, with plastic handle. Size $13 / 8^{\prime \prime} \times 1 / 2^{\prime \prime} ; 11 / 8^{\prime \prime}$ mounting centers. $125 \mathrm{~V}, \mathrm{AC}$ or DC, .5 amps . Std. T
SPST Slide Switch

Positive action slide switch, with plastic handle. Size $13 / 8^{\prime \prime} \times 1 / 2^{\prime \prime} \times 11 / 8^{\prime \prime}$, . 5 Amps. Std. V to 4800 at 3 V operating voltage. Individually boxed. Weight 3 oz. $\$ 129$ Cat. No. SM-2
STD. $11 / 4$ inch Bar Knob for $1 / 4^{\prime \prime}$ shaft. Choice of Red, Ivory or Black.


SM-4 Super Magnet Motor No. 4
Gives greater power on 1 to $S$ battries ( $11 / 2$ to 8 V ) with speeds of 2000 rpm at $11 / 2 \mathrm{~V}$ to 3800 rpm at 2000 rpm at $11 / 2 \mathrm{~V}$ to 3800 rpm at
3 Volts, no load. Operating voltage
is 6 V . Weight: 6 oz. Individually
boxed,
Cat. No. SM-4

COLUMBIA ELECTRONIC SALES MAIL ORDER DEPT.

WHOLESALE - RETAIL STORE
2251 WEST WASHINGTON BLVD.
LOS ANGELES 18, CALIFORNIA • REpublic 1-2206
SAN FERNANDO VALLEY RETAIL STORE and WHOÊESALE WAREHOUSE 4900 LANKERSHIM BLVD.
OPEN MON. \& FRI. TILL 9:00 P.M. - SAT. 9 TO 5:30


## TVaseros <br> WIRELESS

Ano installation required-Just plug in completely portable - ONE UNIt A No wiring needed
Use with any existing Home, Car or Portable Radio taKE IT ANYWHERE - USE IT ANYWHERE
WHEN TRAVELING! VISITING! VACATIONING OR AT HOME
Simply plug in like a lamp and fick the switch. That's all! The sound you are listening for, the voice you are waiting to hear - comes in "Crystal Clear" on your own home or car radio, no matter where you are, in your home, outdoors, or while visiting neighbors 300 feet away. Finished in attractive Blue Baked Enamel.
so simple even a child CAN OPERATE IT!


REMOTE - User can answer calls through the Remote from a distance - No need to operate a switch on the Remote - Remote is always "alive" (when the Master's power is on) for babysitting or dictation or as a safety listening device.
MASTER - Volume Control with on-off switch - Separate "TalkListen" switch **For 110 volts $A C$ or DC - Uses less power than most light bulbs - Master controls both sides of a conversation and can listen-in to the Remote Station at will.

# E-Z TALK 

# ELECTRONIC TWO STATION INTERCOM SYSTEM 

COMPLETE WITH 5OFT. CABLE


Two Station
System
\$ 13.80

MODEL REL Extra Remote Station for E-Z TALK. (One extra Remote Station may be
used in parallel
with the one Re-
mote normally sup-
plied.)

RES features MASTER: Can be used on $A C$ or DC - Uses no more current than a small night light - Volume control with on-off . switch Separate "Talk-Listen". switch • On-off pilot light Ample
Sensitivity Sensitivity - Natural Voice Re-
production production - Underwriters' Lab oratories Approved.

REMOTE: "Talk-Listen" switch allows Remote to originate calls to Master Remote can be made "private" or non-private" at will - Remote can answer calls from a distance without operating a ${ }^{\text {a }}$ switch
Remote con be left "open" for Remote can be left open for
baby-sitting or dictation baby-sitting or dictation, called "Non Private' or "closed" for
privacy but still able to receive privacy but still able to receive
calls from the Master "called calls from the Master "called
Private".
TWO STATION SYSTEM $M \lll$ MODEL RSW-Extra Remote Station for Small Talk. (One extra Remote Station may be used in parallel with the one Remote normally supplied).

ALL MASCO PRODUCTS SHOWN ARE UNDERWRITER LABORATORIES APPROVED AND C.S.A. AND CARRY CONSUMER PRODUCT INSURANCE.


Model SLC additional single station for Wire-less-com System.

## COLUMBIA ELECTRONIC SALES MAIL ORDER DEPT.

## DRRTABLE COMMUNICATION EQUIPMENT

RADIO TRANSCEIVER


Model JRC-.425. Same as above except features: Push-to-talk switch on microphone itself. Specially designed press-to-talk relay operating efficiently at the high trequency of this transreceiver. Provisions for earphones. Complete with stainless steel microand earphone iack Also AC and and earphone jack. Also DC line cords and plug-in antenna. Two units. NE' 159.60 Model JRC-425-12. As above, but for ${ }^{12 v}$ NET.

## VOCALINE TRANSCEIVERS

Model IRC-400. Low-priced twoway radio. Citizens Band. Two units supplied. Fixed frequency operation no tuning. Loudspeakers for clear voice reproduction. Approved for Class B Citizens Radio. Fequires only station licensé, FCC approved. $R F$ power input, 2
watts, $1 / 3$ watt output. Two line watts, $1 / 3$ watt output. TWO hine
cords supplied, one for 115 v , the cords supplied, one for 115 v
other for instant conversion to 6 v DC. $9 \times 6 \times 5$ Two units. NET 111.60 Model JRC-400-12. As
but 12 volts. NET......111.60 above, but 12 volts. Nround plane antenna for interior to exteriol
communication NET commuic50. Model GP5-50. As above but ${ }^{50}$ low loss lead-in wire. Perfect for rooftop.
NET
NET

$$
\begin{gathered}
\text { DC line cord fits cigarette lighter. } \\
\text { NET }
\end{gathered}
$$

Model AD-3. Directional Antenna
for increasing range to 40 miles
or more.
RET.
REQUIRES NO OPERATOR'S LICENSE,
Special Skill or Knowledge, (Station License
easily obtained by any U.S. Citizen over 18)

MODEL CUB-1/MT-1


No additional antenna reauired Very effecient fixed station transmitter-receiver for roof top mounting. Remote controlled.

RADIO SET AN/PRC-6 is a miniature, low-power, battery-operated radio receiver and transmitter $\{$ designed for communication over short distances. Highly portable, it is intended primarily as a handy-talkie for foot combat troops; no skil! is EACH requi:ed to operate it.



BC-61l WALKY-TALKY
Complete unit, ready for operation. Waterproofed and very rugged. As shown above. $\$ 90$. For complete specs. see next column.

## NEW, WALKY-TALKY (BC-611) CHASSIS

BATTERIES FOR ABOVE RADIO SETS
for $B C-611$
complete set . . . . \$4.95
for AN/PRC-6 . complete set $95 ¢$ ea. or 16 for $\$ 12.00$

## EMERGENCY

 TRAN / REC.FOR AIRGRAFT. SHIP. GROUND OR A FINE WALKIE TALKIE
Operates on VHF \& UHF Aeronautiea moblle distress Freq 121.5 Mc (VHF) 243.0 (UHF)

Unit has A1, A2, A3, emmision self contained resonant ant. Operates from small battery pack.


Ground to air range approx. 200 miles VHF distress ireq. monitored 24 hrs a day continuous in every country in the world. Approx. siz: $6 \frac{1}{2} \times 3 \frac{1}{2} \times 2$

$$
\$ 39.50
$$

TBY
WITN DC PWR. SUPPLV ANT. MIKE AND HEADSET $\$ 45$

## GOMMUNIGATIONS EQUIPMENT



The MAR Radio Communication System has been developed as a general purpose transmitter and receiver, adaptable to a wide range of operating conditions and power supply characteristics. The equipment operates on any one of ten pre-set frequencies within the 225 to 390 megacycle band and provides both phone and MCW communication as desired. Both transmitter and receiver are tuned automatically to the selected frequency channel by a motor driven mechanism for rapid frequency change. Power input may be 12 Volts D.C., 115 Volts A.C. 60 Cycles or 230 Volts A.C. 60 Cycles....
\$ 39.95
EXC. COND.
ARN-7


Designed primarily to be used as an air-craft-navigational instrument. Basically equip. is a radio receiver using a superheterodyne circuit and certain addi tional circuits necessary for radio compass operation. Frequency range of 100 kc to 1750 ac covered in four bands.

Consists of Radio Compass Unit, Relay, Indicators, Control Boxes, Loop, Cords and Plugs.

COMPLETE
Instruction Charts Furnished. \$ $1 \mathbf{2 5 . 0 0}$


General description: Although lighter and more compact than other automatic radio compass equipment, it is one of the most efficient of the airbourne direction finding systems. Frequency: 100 to 1750 kc covered in four bands 100 to $200 \mathrm{kc}, 200$ to 410 kc, 410 to $850 \mathrm{kc}, 850$ to 1750 kc. Power: 26.5 V . DC average operation. Limits 21 to 32 V .
DC. COMPLETE $\$ 195.00$


Freq. Range: 38 to 4000 Mc . Covered in 5 tuning unit ranges as follows: $\mathrm{TN}-16,38-76$ Mc. TN-17: 76-300 Mc. TN-18: 300-1000 Mc. This receiver is a high precision laboratory instrument used to monitor or indicate frequency of any signals within its range. Either pulse or CW type signals. Recei ver incorporates a wide and narrow band I.F. strip that can be selected from panel. Outputs are provided for attachments to pulse analyzer, panadapter and various other analyzing instruments. In put: 115 V 60 Cyc . Receiver can be supplied with all tuning units, or any tuning units desired, or the tuning units can be supplied separately. Send for technical data sheet $\$ 249.50$


Radio Receiver BC-348 is a locally controlled, eight tube, six band superheterodyne receiver for use in aircraft or marine applications. It covers a frequency range of from 200 to 500 kilocycles and 1.5 to 18 megacycles. The receiver was designed for operation from a 28 volt D.C. source.......... \& 75.00

## ARC-27



Radio set AN/ARC-27 has been designed to provide AM radio telephone (A-3) communication, in the frequency range of 225.0 to 399.9 megacycles, between aircraft and ship, aircraft and shore, or between aircraft. The transmitter may be tone modulated (A-2) at 1020 cycles per second for emergency or direction finder purposes. Radio Set AN/ARC-27 provides 1750 frequency channels in the above mentioned range. Provisions have been made for the pilot's remote selection of any one of 18 or 20 preset frequencies or operation on a guard channel frequency. Transmission and reception are on the same frequency and by the same antenna. The equipment operates from 27.5 volts DC Provision is made for ADF operation in conjunction with Direction Finder Group AN/ARA-25. ...P.U.R.

## ART-13



Radio Transmitting Set AN/ART-13-A was designed for installation in aircraft. It is amplitude modulated and operates between the frequencies of 200 to 1500 kilocycles and 2000 to 18,000 kilocycles. Shifting from one frequency to another can be accomplished by the conventional method of "hand positioning" the controls or by using the built-in automatic shifting mechanism known as the "Autotune". Autotune operation is available for eleven pre-selected frequencies, one in the low band and ten in the high band.................. $\$ 49.50$

# GOMMUNIGATIONS <br> EQUIPMENT 

## BC-342

## 

Radio Receiver BC-312 and Radio Receiver BC-342 are of the multiband, integral-coil, superheterodyne type. Provision is made for the reception of CW, TONE or VOICE signals. Frequency range of $1500-18000$ kilocycles continously is covered in six bands. $\mathrm{BC}-312$ requires a 12 or 24 volt D.C. source and the BC342 requires 115 volts A.C. 60 cycles.


## 

Radio Transmitter BC-610-E is a high powered amplitude modulated, transmitter for use on either M.O. or Crystal, Phone or C.W. It's power output is 400 watts. Power requirements are 115 volts A.C. 60 cycles. Frequency range is 2000 kilocycles to 18000 kilocycles. It is used in the SCR-399, SCR-499, and the AN/GRC-26 Teletype Unit. Specifications on request..499.50


## APR-1 WITH 3 TUNERS

Airborne broadband receiving equipment designed on a unit construction basis allowing IF units power supply and tuning units to be freely interchanged to give the receiver the characteristic of receiving all types of pulse and other signals, designed principally for radar search. Frequency range 40 to 1000 mc covered by 3 interchangeable plug-in type tuning units: Information is presented by either oral mean thru headset or visual means thru cathode-


The LORAN system as used in both ships and aircraft provides accurate means of determining position by the reception of radio signals from transmitting stations of known location. Accurate to within $1 \%$ of the distance from the ground transmitters. The system operates entirely by radio and does not depend on celestial observations or dead reckoning, and therefore, provides a fix when all other methods of navigation are rendered useless. 75.00

Marine or Airborne long range navigational equipment determines the exact geographical position of your boat or airplane. Geographic positions to to $\mathbf{J} 200$ miles from any Loran transmitters facility. Complete installation consists of:
$\$ 9.00$
ID-6A.B/APN-4 Loran indicator uses 5 CPI cathode ray tubes. Easily converted to test oscilloscope, panadapter, analyzer visual, counter, etc. Can build on any scope circuits you can dream up. Contains 22 pots, loads of switches, condensers, transformers, small parts, less small tubes, individually sold.
............................................PUR
R-9A.B/APN-4: 160 meter Loran receiver plus high voltage for scope and low voltage power supply. Dynamotor delivers 240-275V. continuously variable at 150 ma electronically regulated to plus or minus. $01 \%$. Complete installation, weighs less than 199 lbs . with schmatic..................................... PUR

ARC-1 $\$ 4950$

Units consist of:
RT-18 /ARC-1 Transmitter-Receiver C-45/ARC-1 Control Unit

Operates from a 24 volt battery supply and provides radio telephone communications in the frequency range of 100 156 megacycles between aircraft or aircraft to ground. Provision is made for the remote selection of a two-way operating frequency which may be any one of nine pre-set frequencies in the band or a guard-channel frequency which is fixed within a restricted band

RADIO SET: is an airborne receiving and transmitting equipment designed to provide communications from plane to plane or from plane to ground. Remote operation on eight frequency channels. Transmitter is coordinated with control box and receiver so they both operate in preset frequency channels in combination with other equipment similarly preset. Frequency range $100-156 \mathrm{mc}$. Operating voltage 22 to 32 DC. Power output 8 watts.
T-67/ARC-3 Transmitter
C-118/ARC-3 Control Box R-77/ARC-3 Receiver and 568/ARC-3 Power Junction Box

## COMMUVICATION ENAVAGATION EQUIP.



Airborne equipment designed to give vertical guidance to a pilot during aircraft landings. 11 tube superhetrodyne circuit. 3 crystal control UHF provides static free reception.


This hermetically sealed iron core loop is ideal for all radio compasses. Used on latest jet aircraft as well as commercial aircraft.

## R8/'ARN-8



BEACON RECEIVER
75-Mc.
Here's a BUY! A 7 tube Beacon Receiver containing the follow${ }_{25}$ ing , items: Thoree and Two 12 SH 7 tubes, a sensitive relay ( $12,500 \mathrm{ohms}$ ) and many other essential partscompletely wired and ready to operate, but less power supp!y. Housed in a black crackle case This receiver is suitab'e for remote control service. such as door opening devices, turning lights on and off, starting and stopping motors or machinery from remote points, etc.
$\$ 8.95$


COMPASS
BEARING INDICATOR
Bendix \#MN40E. . . Compass Bearing Indicator, part of Radio Direction Finder. Consists of a mechanically driven compass indicator and pointer. Has a worm pass indicator and pointer. Has a worm
drive with a gear reduction of 120 to 1 in drive with a gear reduction of 120 to 1 in
$360^{\circ}$ rotation, which is coupled to a pointer with a $360^{\circ}$ dial indicator ( $1^{\circ}$ calibration points). An ingenious built-in mechanical compensator permits correction of deviation over $360^{\circ}$. Equipped with a double ended input shaft which can be coupled with spline fitting or modified to take a $1 / 4$ "' coupling. Contains two 3 V . Grain of Wheat Bulbs and associated dropping resistor for 28 VDC. operation. Finest construction throughout, with no backlash. Size: 6 dia. $\times 2 \frac{1}{2}{ }^{\prime}$ D. Shpg. Wt., 5 lbs.


AIRCRAFT INSTRUMENTS Many types far too numerous to mention here. Gyros, airspeed, altimeters, engine instruments, and many others. Write giving details fcr a return mail quote.


MARINE COMMUNICATIONS RECEIVER
BY GENERAL ELECTRIC
MODEL BC-652
This is a compact $2-6 \mathrm{Mc}$. 1 ll tube unit with a built in 12 or 24 V.D.C. dynamotor power unit. Compact in size and well built. Ready to install. Specify valtage 12 or 24 V.D.C.
Excellient condition units ONLY


SCR-269 $\$ 75_{\text {Comperis }}^{00}$


SCR-269 Radio Receiver Compass. Complete set provides automatic bearing indication of direction of radio frequency signals and simultaneous aural reception modulated radio frequency using non-directional antenna. Frequency range 200-1750 ke in 3 bands.


Remote control commercial type navagational receiver. Indicates direction of any desired transmitting station. 3 bands, frequency range: 150 kc to 1500 kc . Has $12-6 \mathrm{~V}$ type tubes.

## 24 VOLT DC - INST. ONLY

## BENDIX

COASTAL \& HIGH SEAS RCVRS E DIRECTION FINDERS


RA-10-DB is like $\mathrm{MN}-26-\mathrm{C}$ except that indication is by aural null and its tuning ranges are $150-1100$ kc DF receiver and $2-10 \mathrm{mc}$ receiver only. 47 lb . weight includes receiver with internal 24 v dynamotor, MR-9 control box, MN-20 loop, MN - 52 loop control, flex shafts, plugs, and loop transmission line Draws 3 A at 24 V de. Has builtin relay which connects the loop on the bands $150-1100 \mathrm{kc}$. 5

## SURPLUS SELL-SATION BUYS!




## LARGEST <br> ASSORTMENT emsis ratuury TEST EQUIPMEMT

Please write us your requirements so we may quote you our low current prices.

brator, this crystal controlled pulse generati brator, this crystal controlled pulse generator
produces a square-topped, 50 volt synchroniz ing pulse of .8 microseconds at a pri of 400 800.1600 or 2000 cps . and a triangular marker pulse of 0.4 microseconds duration a a prf corresponding to a pulse-echo distance
of 1500 ft . The phase between the marker and syi.c. pulses is continuously variable from -180 to +180 degrees.

STANDARD SIGNAL GENERATOR


Model 84 - 300 MC. - 1000 Mc.
FREQUENCY RANGE: 300 to I C A T I O N S individually calibrated direct reading dial.
FREQUENCY ACCURACY: $\pm 0.5 \%$.
OUTPUT VOLTAGE: Continuously variable from 0.1 to 100,000 microvolts.
OUTPUT IMPEDANCE: 50 ohms.
MODULATION: 0 to $30 \%$ within $\pm 20 \%$ as determined by DC meter. Internal sine-wave oscillator; choice of 400, 1000, or 2500 cycles is provided. Extarnal modulation up to 30 kilocycles may be applied.
PULSE FREQUENCY: 60 to 100 Kc in three ranges, $60-1000$, 600-10,000 and 6000-100,000 pulses per second.
POWER SUPPLY: 117 volts, 50 to 60 cycles.
DIMENSIONS; $13^{\prime \prime}$ high $\times 26^{\prime \prime}$ wide $\times 121 / 8^{\prime \prime}$ deep, overall. WEIGHT: Approximately 135 pounds, including external line volfage regulator.


Grips and holds terminals, resistors, wires, etc.
Leaves both hands free to adjust scope, VTVM, Audio Oscillator Opens and Closes by THUMB action alone 5 Foot test lead wire Made of durable vinyl plastic

For $\$$ Spo

HETERODYNE FREQUENCY METERS

$B C-221 \$ 59.50$

## FREQUENCY METER

Freq. Range: 125 to $20,000 \mathrm{KC}$. Osc. Fund. Range: 125 to 250 KC and 2000 to 4000 KC Accur: $0.01 \%$ or $\pm 500 \mathrm{cy}$ Audio Modulation: Not provided

BC-221 with Modulation-Same above but with Audio Modulation 5750
TS-175/U frbouency neter req. Range: 85 to 1000 MC sc. Fund. Range: 85 to 200 MC Accuracy: 0.05\%
Sensitivity: 20 MV to 2 V Output: 100 UV to 20 MV . Audio Modulation: 1000 Cy .

517500

Freq. Range: 20 to 280 MC . Osc. Fund. Range: 20 to 40 MC Accuracy: 0.05\%
Sensitivity: 20 MV . to 2 V . Outpur: 50 UV . to 20 MV . $\$ \mathbf{\$ 9 . 5 0}$


LM freauencr meter
U.S. Navy version of the famous Signal Corps Type BC-22l Frequency Meter.
Frequency range-
125 to $20,000 \mathrm{KC}$
Accuracy 125 to $2000 \mathrm{KC} 0.02 \%$
2 to $20 \mathrm{Mc} 0.01 \%$
Built-in audio modulation. In cludes tubes, crystal and ori ginal calibration book.

Each unit completely reconditioned and tested prior to shipment.

## COLUMBIA ELECTRONIC SALES

 MAIL ORDER DEPT.W HOLESALE - RETAIL STORE
2251 WEST WASHINGTON BLVD.
LOS ANGELES 18, CALIFORNIA • REpublic 1-2206
SAN FERNANDO VALLEY RETAIL STORE and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD
NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668 OPEN MON. \& FRI. TILL 9:00 P.M. - SAT. 9 TO 5:30

## BurRetall at Wholesale PrIces!

## MASTER

For 6 volt battery-output 40 to 50 watts. For 12 volt battery output 50 10 60 watts. Size, $4^{\prime \prime} \times 5^{\prime \prime} \times 6^{\prime \prime}$ Operates all Equipment same os smaller models, plus Wire Recorders, small drills, etc LIST PRICE $\$ \mathbf{3 8 . 5 0}$ OUR PRICE
$\$ 25.97$


## SENIOR

For 6 volt battery-output 35 to 40 watts. For 12 volt battery-output 40 to 50 watts. Extensively used to operate Dictating Machines, Shavers, Phonographs, Radios, Lights, etc. LIST PRICE \$2 1.95 OUR PRICE

$\$ 14 .^{63}$



No switches to throw. No vibrators to turn. - No installation! Just plug into either 6 or 12 volt cigar lighter. Operates from either 6 or 12 volt battery. With 6 volt battery-output 55 to 75 watts. Wih 12 volt battery output 85 to 110 vatts. Operates same equipment as Super Model. LIST PRICE 54.95
OUR PRICE ......................... $\$ 36.6^{63}$

## Portable LIGHTS E EXTENSION CORDS <br> Trouble light with switch and two sockets. 25 foot heavy duty cord. $\$ / .97$

Same as above except with 50 foot cord. $\$ 2.79$ Extention cord only. Heavy duty rubber covered cord with plug and socket.


MINIATURE "OUNCER" AUDIO TRANSFORMER

This half-pint size UTC audio ouncer has terrific promise for any of you has two center tapped secondary windings which permits any com. bination of impedances for almost any use. We have tried them out for the following uses and found them to be excellant: Mike Input, LO. Level output to line (balanced or Coupling, Tone Generator for Test Equipment, Organs, and efc., Block. ing Oscillator, Phase Detection (lower requencies). As stated before, the advantages and possibilities of two enter tapped windings are limited only by the experimentor's ability | THIS LOW |
| :--- |
| PRICE OF |
| 59 cea . |

TWO METER ARC-5 TRANSMITTER

deal transmitter for Mobile, C.A.P. Two Meters, Fire Dept., Sheriffs Frequencies, and especially swell for novice. incorporated turret switching
coils for all stages. Use 1625 1625 Tripler, 832-A Tripler, 832-A Final. Frequency Range is 100 MC thru 156 MC . Four channels are provided using four separate coils in an automatic turret using 12 or 24 V motor or a manually operated system. These coils can easily be rewound for six meters. Complete with are in excellent condition
for only .......................... $\$ 1295$



AIR FORCE HAND MICROPHONE USAF type. Highly sensitive. Has thumb control button in handle. Ideal for recording, public address systems, ete. plug. NEW $\$ 7.95$ USE 3.95


AIR FORCE TYPE T-30 THROAT MICROPHONE
Genuine USAF, Type T-30

## Gives dis-

 tinct voice reproduction for most uses. piece with elastic neckband. Operat piece with elastic neckbabetween $100 \& 300$ ohms.

694


Used by radio "hams" is professional recording studios, broadcasting, public address, etc. Telephone type with sensitive, clear tone. Developed for the U.S. Signal Corps. Complete with cord and
plug. plug.

## COLUMBIA'S PHONE

## PATCH KIT

This is a Phone Patch the likes of which is hard to find. Perfect impedance matching makes this the finest yer. We do not want to start in the feel you can do as good a job if not better, and save the labor costs of the components supplied are brand new stock at surplus prices pact. Complete schematic simplified so that even the newest novice can wire this unit up. Parts alone valued $\begin{array}{ll}\text { at } \$ 9.75 \text { distributors } \\ \text { net: Get yours now:.......... } & \$ 395\end{array}$

## BC-1033 MARKER

 BEACON RECEIVER75 Mc . Three tube tuned RF, type receiver with a rectified reflex put operates extremly sensitive re. lays in audio control work. Relay closes at 0.4 Ma ., re-opens when the current falls to 0.2 Ma . Contacts will carry 500 Milliamp current a low voltages. Excellant basis for door opener,, robot audio control of
model planes and boats, etc. Con. $\begin{aligned} & \text { verts to tone keyer for } \\ & \text { transmitter monitors. }\end{aligned} \quad \$ \mathbf{4 9 5}$

- cemen


Two in one meter gives you the ablity to observe slmultaneously two low-changing voltages, just as you use a scope to observe 2 fast-changing voltages; or use as $\mathrm{Go} / \mathrm{No}$-go production Indication of two merit conditions. 3" round behind-panel mtg . Both zero-adjusts on the front. This is 1-101-C, used in Instrument andling Systems. Good condition Shpg wt 3 lbs

## SURPRISE...SURPRISE.

## SURPRISE

20 Pounds of BRAND NEW Electronic items. No Crud: No Junk: No dis appointments when you receive thi latest. Surprise Package of ours. We could almost guarantee complete pect to get 200.00 worth of gear for 3.50 . However, we will say this YOU CAN NOT BUY ANYWHERE IN THE WORID CLEANER MERCHANDISE OR A BETTER ASSORTMENT OF ELEC TRONIC COMPONENTS AT A LOWER PRICE. This statement we absolutely 19 to 20 lbs . But be massured vary fro values are there. This assortment of BRAND NEW components, includes, Transformers, Choke, Tubes, Resis tors, Capacitors, Volume Controls, Insulators, Test Leads, Tube Sockets Get yours
they last... $\qquad$

COAXIAL CONNECTOR BARGAINS

##  $\begin{array}{llll}\text { PL. } 259 & \text { or } 831 \mathrm{SP} & \text { 20c. Each } \\ \text { PL.258 } & \text { or } 831 \mathrm{~J} & 50 \mathrm{c} \text {. Each } \\ \text { M-356 } & \text { or 831AP } & \text { 20c. Each }\end{array}$ $\begin{array}{llll}\text { M. } 359 & \text { or } 831 \mathrm{AP} & 20 \mathrm{c} \text {. Each } \\ \text { SO.239 } & \text { or } 831 \mathrm{R} & \text { 20c. Each }\end{array}$ Quantity is limited so order yours $\$ 1.50$. The PL. 258 Adapters 8 for for $\$ 4.50$ EXC. - USEO <br> REAL BARGAIN




ELECTRONIC SALES
SAN FERNANDO VALLEY RETAIL STORE
and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.

## Columbia BRINGS YOU THE LOWEST PRICES EVER!

## ${ }_{B C 683}$ AC POWER PACK BC 683



Newly manufactured for the above mentioned FM receivers. It is designed to plug into the space provided for the dynamotor. THERE IS ABSOLUTELY NO CONVERSION NECESSARY with the use of this power pack. Especially designed to make it possible to use the incorporated squelch circuit in the receiver.

KIT FORM....\$ 7.95
ASSEMBLED

Behind-the-panel mount round tuning indicator. Face illuminated by grain of wheat lamp. Full scale is 5 ma de which is standard for most "S" meter circuits. $23 / 8^{\prime \prime}$ across the face, reverse-set, pointer. Excel lent condition. With the 3 volt lamp and schematic. Shpg wt 1 lb .


$\$ 1.50$

## TUNER CHASSIS

Local tuner manufacturer changes models and we got the old chassis. This TV turner chassis makes a fb chassis for preamp, Code Oscillator, small power supply, etc. All prepunched and ready for mounting of parts and tubes


Made for the Navy to highest Gov't spec's. Has bakelite case with push-button control. Comes with a 4 ft . rubber covered cord and jack.

ONLY \$2.50

## Real Bargains

3 for 25c
ONLY

## KNOB ASSORTMENT

Don't spend your valuable time unnecessarily looking for a knob when for for use on Broadcast Band and you need it. We have packably fill Communicatons Receivers. Small assortment that will probabt needs. size permits designing of small size any of your future orsh-ons, set screw communications receiver or portable All brand new push, round, etc. a broadcast band receiver. Size
 of 20 knobs only ..............

## MINIATURE I.F.

 TRANSFORMER
## Fully shielded 455 KC I.F. transform er for use on Broadcast Band and

# GAS GENERATORS <br> <br> POWER PLANTS 

 <br> <br> POWER PLANTS}

EAST E MID WEST F.O.B BURINGTON WIS.

WES
5
$\begin{aligned} & \text { Specifications } \\ & \text { OUTPUT } 1250 \text { watts maximum duty }\end{aligned}$
UTPUT 1250 wats maximum duty
volt, 60 warts comtinuous 115/130
$\begin{aligned} & 6 \mathrm{or} 12 \text { volt D.C. (as specified), } 180 \\ & \text { watts }\end{aligned}$
$\begin{gathered}\text { GENERATOR } \\ \text { citer, } 3600 \\ 2 \\ \text { R phele, }\end{gathered}$ with built in ex
generator bearings . Heavy duty
$\begin{aligned} & \text { ball bearings, se, } \\ & \text { ricated for life. }\end{aligned}$
ARMATURE - Dynamically and statically
$\begin{aligned} & \text { balanced vynamically and statically } \\ & \text { heavy winded }\end{aligned}$
$\begin{aligned} & \text { heavy windings } 2 \text { collector rings } \\ & \text { proving }\end{aligned}$
$\begin{gathered}\text { praviding } 2 \text {-wire, } 115 / 130 \mathrm{v} \text {. output. } \\ \text { REGULATION - Inherent through special }\end{gathered}$
balanced design of windings.
$\begin{aligned} & \text { SPEED - Automatically fixed and main- } \\ & \text { tained by precision mechanical fly- }\end{aligned}$
$\begin{aligned} & \text { tained by precision mich } \\ & \text { ball governor on engine. }\end{aligned}$

MODEL PP 121200 Watts
WINDINGS - Field coils and armature are designed with extra heavy windings for generous over-
FRAME - Cast steel. Special streamlined design provides space for large pole pieces and field coils, NSTRUMENTS Bupies minimum space.
NSTRUMENTS. Built in control box contains convienient duplex power receptacle for easy
distribution of current. No wiring is required. Simply plug in and operate.
DRIVE - Generator is integrally coupled with engine and driven directly by the engine shaft. Drive
is self aligning and permanent. This type of drive offers the advantages of occupying a mini.
mum of space freedom from belt maintenance and replacement, and $100 \%$ efficiency of


Service and parts avallable all over
7.95 cubicinches.
Horsepower_ 2.75 H.P. at 3600 RPM.
Piston - Aluminum alloy with 2 compres-
sion rings and 1 oil control ring.
Cylinder Head - Aluminum with large cooling area،
Cylinder and Crank Case - Close grained.
precision machined of special cylindcr
alloy
Ignition
manent alnico magnets. Molded water proof coil. Ignition system radio shield-
ed. Spark plug size 14 mm . Hot spark ed. Spark plug size 14 mm . Hot spark
assures easy starting.

NET WEIGHT: 90 lbs
DOMESTIC SHIP PNSG WEIGHT: 100 lbs.
EXPORT SHIPPING WEIGHT: 130 lbs.

Main Bearings - 2 shiclded ball bearings.
Crankshaft - Alloy steel forsing. heat
treated and counter-balanced.
Valves - Austenitic steel exhaust valves. Air Clcaner - Heavy duty oil bath type. Fuel Filter. Fuel filter and sediment Crankcase Capacity - 1 pint of oil. Fuel Tank- 3 quart capacity. Fuel - 65-85 octane gasoline. Starting - rope starting is built into each unit.

EXPORT DIMENSIONS: $25 " \times 20 \times \times 20$ ".
DIMENSIONS OF PLANT INSTALLE

## COLUMBIA ELECTRONIC SALES

 MAIL ORDER DEPT.
# TABLE RADIOS. APPLIANCES 

## GRANCO HIGH FIDELITY TABLE RADIOS...WITH FM



GENERAL ELECTRIC

- Automatic wake-to-music and/or buzzer
- Slumber switch turns radio off at night
- Cabinet fully molded front and back - Lever type controls; luminous hands on clock
as: comens $\$ 2995$

DORMEYER AUTOMATIC ELECTRIC SKILLET

WITH
COVER

THERMOSTATICALLY CONTROLLED Temperature settings are dependable because thermostat control is in center of pan. Tubular heating element won't burn out ever Uniform heating surface prevents scorching. 110-120 volts, AC

Model 601 FM Radio America's best buy in an FM radio! fine static free FM recs exceptionally stereophonic sound to your present radio Exclusive Royal " $G$ " coaxial tuning for dial, vernier tuning, built-in antenna. C-DC. Smartly styled cabinet encases set on all sides, including back. In choi decorator colors with white mist

$\$ 3295$
IN CORAS ETURQ


Model 701 FM-AM Radio
Engineered for complete radio reception coaxial tuning assures drift-free recept " $G$ " High sensitivity and selectivity. Extended range speaker. Powerful 6 -tube (plus range speaker. Powerful 6 -tube ( p
rectifier) chassis provides 8 -tube performance by use of multiple purpose tubes. Built-in antennas. AC-DC. Smart cabinet encases set on all sides, including back. In choice of decorator colors with white mist grille. $91 / 2^{\prime \prime}$ wide, $4^{\prime \prime}$ deep, $5^{\prime \prime}$ high

UNIVERSAL


AUTOMATIC STEAM'N DR ${ }^{4}$ IRON

The quick action "jiffy switch" to give you instant control. The ease of filling and emptying through the Easy Fill opening in the handle. The rounded heel and all round bevel for getting into corners and under buttons. The larger eapacity and soleplate area that makes work go faster. And finally the extra convenience of the reversible cord.

america's favorite coffeemaker Your Universal Coffeematic is designed to mak the best coffee you ever tasted. . and with the least
possible fuss or bother. It's a time-saver, too be cause it's completely automatic ... needs no watching . . . tells you when your coffee is ready to serve. 8-cup chrome Coffeematic. and CORD
Atternating Current 95 only, 110-120 volts.


Am Radios ${ }_{\text {iN EBONY }} / 85$ PINK WHITE YELOW. TURQ $\$ 1585$ SPECIAL MODEL 5R-5: Powerful 5-tube performance, superheterodyne chassis: decorator colors.

## PACKARD BELL RADIOS FOR POWER • PLEASURE - PERFORMANCE

AM CIock Radios IN EBONY\$2495
SPECIAL MODEL 5RC-3: A perfect way to start the day and to keep abreast of the times. De luxe Telechron clock and 5 -tube AM radio combine to waken you pleasantly... and on time! IN COLORS $\$ 2695$
AS ABOVE Decorator colors.

DECORATOR MODEL ERC-1: New twin-tone clock radio lulls you to
sleep with music, wakens you with song sleep with music, wakens you with song
or a buzzer alarm. Two dynamic speakers, 6 -tube chassis, de luxe Telechron clock,
imed appliance outlet and decorator



## Zephyr ${ }^{\text {MODEL } 5 T M 2}$

Beauty of appearance and beauty of performance are built-in characteristics of this - the smallest 5 tube radio available today. Superheterodyne chassis gives highest quality reception. Requires no outside antenna or ground.
Handsomely styled to harmonize with any decor.
Smallest five tube radio available. Only $314^{\prime \prime} \times 63 / 4^{\prime \prime} \times 4^{\prime \prime}$ Four glowing decorator colors BLUE YELLOW SOFTCREENEROSE

$$
5 \gg 5
$$

##  AVE $60 \%$ RECEIVING TUEES

| TYPE | 1157 | TYPE | LHST | TYPE | LIST | TYPE | L／ST | TYPE | L1ST | TYPE | L15T | TYPE | LIST | TVPE | LIST | TYPE | L／ST | TYPE | 2／57 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 024 | 2．15＊ | 3BN4 | 2.55 | 5U4G | 2.05 | 6AX5GT | 2.95 | ${ }^{6} \mathrm{CH} 8$ | 3.60 | 6P56 T | 2.80 | 785 | 4.75 | 12BE6 | 2.15 | 1273 | 3.50 | 42 | 3.50 |
| 0Z4G | 2．35＊ | 3BN6 | 3.05 | $5 \cup 4 \mathrm{GA}$ | 2.00 | 6A×8 | 3.50 | 6CL6 | 3.75 | 6Q7 | 3.40 | 786 | 3.25 | 12BF6 | 1.80 | 14A7 | 50 | 47 | 8.70 |
| 1A5GT | 3.20 | 3BU8 | 2.80 | $5 \cup 4 \mathrm{~GB}$ | 2.00 | 6AZ8 | 4.20 | 6CL8A | 3.15 | 6Q7G | 3.20 | $7 \mathrm{B7}$ | 3.30 | 12BH7 | 3.05 | 14B6 | 30 | 50A5 | 3.95 |
| 1A7GT | 3.70 | 3BY6 | 2.35 | 548 | 3.30 | 6B8 | 4.70 | 6CM6 | 2.55 | 6Q7GT | 3.20 | 788 | 3.55 | 12BH7A | 3.05 | $14 \mathrm{C7}$ | 3.35 | 50B5 | 2.65 |
| 1AB5 | 5.70 | $3{ }^{3} \mathrm{BC6}$ | 2.25 | $5 \mathrm{~V} 4 \mathrm{GA} / \mathrm{G}$ | 3.30 | 6BA6 | 2.00 | $6 \mathrm{CM7}$ | 2.75 | 6R7G T | 2.80 | 7 C 5 | 3.35 | 12BK5 | 3.80 | 14F7 | 3.85 | 50C5 | 2.15 |
| 1AG4（N） | 4．25＊ | $3 \mathrm{CB6}$ | 2.25 | 5VGGT | 2.20 | 6BA7 | 3.70 | $6 \mathrm{CN7}$ | 2.60 | 6S4A／6S4 | 2.05 | 7C6 | 3.30 | 12BQ6GTA | 4.45 | 14 F 8 | 4.60 | 50L6GT | 2.40 |
| 1 AH4（N） | 1．90＊ | 3CF6 | 2.55 | $5 \times 46$ | 2．95＊ | 6BA8A | 3.55 | 6CQ8 | $3.30 *$ | 6S8GT | 2.75 | $7 \mathrm{C7}$ | 3.05 | 12BQ6GTB |  | 14H7 | 4.10 | 50x6 | 3.20 |
| 1AJ5（N） | 2.00 ＊ | 3CS6 | 2.40 | $5 \times 8$ | 3.25 | 6BC5 | 2.30 | 6 6R6 | 2.40 | 6SA7 | $3.40 *$ | 7E6 | 4.05 | 12CU6 | 4.45 | $14 \mathrm{Q7}$ | 4.10 | 50Y6GT | 2.95 |
| 1AX2 | 3.05 | ${ }_{3} \mathrm{CY} 5$ | 2.80 | 5Y3GT | 1.75 | 6BC7 | 3.80 | 6CS6 | 2.35 | 6SATGT | 3.25 | 7E7 | 4.45 | 12BR7 | 2.60 | 14 R 7 | 15 | 50Y7GT | 3.05 |
| 1B3GT | 2.90 | 3DK6 | 2.40 | 5Y4GT | 2．35＊ | 6BC8 | 4.00 | 6C57 | 2.80 | 6SB7Y | $4.50 *$ | 7F7 | 3.65 | 12 BV 7 | 3.05 | 17AX4GT | 2.70 | 71 A | 5.10 |
| 1C5GT | 3.65 | 3DT6 | 2.20 | 523 | $3.00 *$ | 6BD6 | 2.30 | ${ }_{6} 6 \mathrm{CU} 5$ | 2.35 | 6SC7 | 3．35＊ | 7F8 | 4.60 | 12BY7A／12BY7 | 3.05 | 17D4 | 2.75 | 75 | 5.10 |
| 1G3GT／183GT | 2．90＊ | 3LF4 | 4.20 | 524 | 4.55 | 6BE6 | 2.20 | 6CU6／6BQ6GA | 4.35 | 6SF5 | 2.70 | 7H7 | 3.90 | $12 \mathrm{BZ7}$ | 3.05 | 17DQ6A | 4.20 | 78 | 5.10 |
| 1H5GT | 3.05 | 3Q4 | 2.75 | 6A7 | 4.65 | 6BF5 | 3.55 | 6CU8 | $3.65 *$ | 6SF5GT | 3.20 | 7L7 | 4.25 | 12 C 5 | 2.35 | 17H3 | 2.15 | 80 | 2.90 |
| 1 J 3 | 2.90 | 3QJ゙GT | 3.60 | 6A8 | 4.80 | 6BF6 | 1.80 | ${ }^{6} \mathrm{CX8}$ | 3．65＊ | 6SF7 | 3.90 | 7N7 | 3.40 | 12C5／12CU5 | 2.35 | 18A5 | 4.10 | 83 | 3.50 |
| 1K3／1，3 | $2.90{ }^{*}$ | 354 | 2.45 | 6ABG | 4.80 | 6BG6GA／G | 6.50 | 6 CY 5 | $2.75{ }^{*}$ | 6SG7 | $3.70 *$ | 7Q7 | 4.10 | 12CA5 | 2.50 | 19AU4GTA | 3.45 | 84／6Z4 | 2.60 |
| 1 L 4 （ N$)$ | 2．65＊ | 3V4 | 2.35 | 6A8GT | 4.80 | 6BH6 | 2.70 | 6D6 | 4.35 | 6SH7 | 3.50 | 757 | 4.75 | 12CR6 | 2.40 | 19BG6GA／ |  | 85 | 4.35 |
| $1 \mathrm{L6}$ | 3.35 | $4 \mathrm{BC5}$ | 2.35 | 6AB4 | 2.15 | 6BH8 | 3.50 | 6D8G | 3.50 | 6SJ7 | $3.25 *$ | 7W7 | 4.75 | $12 \mathrm{CU6}$ | 4.45 | 19BG6G | 6.50 | 117L／M7GT | 10.15 |
| ILA4 | 4.45 | 4 BC 8 | 4.05 | 6 6B7 | 5.00 | 6BJ6 | 2.60 | 6DA4 | 2.70 | 6SJ7G T | $2.90 *$ | 7X7 | 5.85 | 12CU6／ |  | $19 \mathrm{J6}$ | 3.15 | 117N7GT | 9.30 |
| ILA6 | 4.10 | 4BN6 | 3.05 | 6AC5GT | 4.35 | 6BJ7 | 2.95 | 6DB6 | 2.05 | 6SK7 | 3．10＊ | 7Y4 | 2.75 | 12BQ6GA | 4.45 | 1978 | 3.35 | 11723 | 2.50 |
| ILC5 | 4.05 | 4BQ7A | 4.00 | 6AC7 | 4.25 | 6BK4 | 7.10 | 6DC6 | $2.75{ }^{*}$ | 6SK7GT | 3.05 | 724 | 2.75 | 12D4 | 2.75 | 24 A | 4.15 | 117Z6GT | 4.40 |
| ILC6 | 4.10 | 4858 | 3.85 | 6AF4 | 4.00 | 6BK5 | 3.50 | 6DE6 | 2.45 | 6SL7GT | 3.30 | 8AU8 | 3.55 | 12DF7 | 2.60 | 25AV5GA | 4.10 | 7025／ECC83 | 2．95＊ |
| ILE3 | 4.25 | 4BU8 | 2.80 | 6AF4A | 4.00 | 6BK7A | 3.35 | 6DE7 | 2.95 | 6SN7GT | 2.60 | 8AW8A | 3.65 | 12DQ6A／ |  | 25AX4GT | 2.90 3.65 |  |  |
| 1LH4 | 3.95 | 4BX8 | 3.45 | 6AG5 | 2.60 | 6BK7B | 3.35 | 6DG6GT | 2.50 | 6SNTGTA | 2.60 | 8CG7 | 2.50 | 12DQ6 | 4.20 | 25BK5 | 3.65 | SPECIAL TYP | YPES |
| ILN5 | 3.95 | 4BZ6 | 2.25 | 6AG7 | 5.10 | 6BL7GTA | 3.95 | 6DK6 | 2.35 | 6SN7GTB | 2.60 | 8CM7 | 2.80 | 12DT5 | $3.05 *$ | 25BQ6GTB／ |  |  |  |
| INSGT | 3.65 | 4BZ7 | 4.05 | 6AH4GT | 3.30 | 6BN4 | 2.50 | 6DN6 | 6.25 | 6SQ7 | $2.90 *$ | 8CS7 | 2.95 | 12EN6 | $3.05{ }^{*}$ | ${ }_{25 \mathrm{C} 5}^{25 \mathrm{CU6}}$ | 4.60 2.15 | 5R4GGY | 2.70 |
| 1P5GT | 3.50 | 4CB6 | 2.30 | 6AH6 | 4.65 | 6BN6 | 3.05 | 6DQ6A／6DQ6 | 4.10 | 6SQ7GT | 2.70 | 9U8A | $3.30{ }^{\prime}$ | 12F8 | 2.55 | 25C5 25CA5 | 2.15 2.50 | 6AS6 | 2.70 4.90 |
| 1Q5G T | 4.05 | 4CS6 | 2.35 | 6AK5（N） | 4．20＊ | 6BQ5／EL84 | 2．35＊ | 6DT5 | 2.90 | 6SR7 | 2.70 | 10DE7 | 2.95 | $12 \mathrm{H6}$ | $2.75{ }^{*}$ | 25CA5 25CD6GB／GA | 2.5 <br> 5.85 | 6AS7G | 4.90 6.25 |
| 1R5 | 2.55 | 4 CY 5 | 2．85＊ | 6AK6（N） | 2．90＊ | 6BQ6GTB／ |  | 6DT6 | 2.15 | 6557 | 3.50 | 12A8GT | 4.75 | 12 J 5 | 2.70 2.70 | 25CD6GB／GA | － 5.85 | 6AS7GA | 6.25 |
| 154 | 3.65 | 4DT6 | 2.20 | 6AL5 | 1.85 5 | $6 \mathrm{CU6}$ | 4.35 | 6E5（N） | 3.00 | 6 64 | 4.35 | 12AB5 | 2.45 | 12 J 5 GT | 2.70 4.20 | 25CU6 2506 GA | 4.60 | 12AY7 | 3.40 |
| 155 | 2.55 | 5AM8 | 3.30 | 6AL7GT（N） | 5.75 | 68Q7A | 3.95 | 6EA8 | 3.20 | 6 6T8 | 3.35 | 12AC6 | 2.20 | 12 JTGT | 4.20 2.70 | 25Cu66A 25CU6 | 4.60 |  |  |
| 174 | 2.40 | 5AN8 | 3.55 |  | 5.95 3.25 | 6BR8 | 3.30 | 6F5 | 3.10 3.65 | 6T8A | 3.35 | 12AD6 | 2.25 1.85 | 12 K 5 | 2.70 4.05 | 25BQ6GT | 4.60 |  |  |
| IU4 IU5 | 2.35 2.05 | 5AQ5 5AS4A／5AS4 | 2.20 2.15 | GAMEA／ GANM | 3.25 4.95 | 6BS8 | 3.75 2.80 | 6F6 6F6G | 3.65 3.65 | $6 \mathrm{U} 5(\mathrm{~N})$ 6 U 8 | $3.20 *$ 3.30 | 12ADE6 12AE6 | 1.85 2.25 | 12K7GT | 4.05 2.45 | 25DN6 | 5.55 | \％U 号 | $\stackrel{\square}{6}$ |
| I－V | 3.65 | 5A58 | 3．45＊ | 6AN8 | 3.50 | 6BV8 | 3.20 | 6F6GT | 3.65 | 6U8A | 3.30 3.30 | 12AJ6 | 1.75 | 12Q7GT | 3.35 | 25F5 | 2.35 2.25 | 易 $\frac{9}{3} \times \frac{0}{9}$ |  |
| IV2 | 2.00 | 5AT8 | 3.25 | 6AQ5 | 2.15 | 6BW8 | 3.30 | 6G6G | 3.75 | 6V3A | 4.35 | 12AL5 | 1.90 | 12SA7 | $3.40{ }^{*}$ | 25L6GT | 2.25 2.70 | ．${ }^{\text {\％\％}}$ |  |
| 1 V 6 （ N ） | $2.40 *$ | 5AV8 | 4.05 | 6AQ5A | 2.15 | 6BX7G T | 4.40 | ${ }^{6} \mathrm{H} 6$ | $3.05^{*}$ | 6 V 6 | 4.35 | 12AQ5 | 2.40 | 12SA7GT | 3.25 | 25WGGT | 2.70 3.10 |  |  |
| $1 \times 2 \mathrm{~B}$ | 3.05 | 5AW4 | 2.80 ＊ | 6AQ6 | 2.20 | 6BY5GA／G | 4.20 | 6 J 5 | 2．70＊ | OV6GT | 2.15 | 12AT6 | $1.65 *$ | 12SC7 | 3.35 | $25 Z 5$ | 3.10 2.90 | O. |  |
| 2 A 3 | 6.30 | 5AZ4 | 2.65 | 6AG7GT | 4.00 | 6BY6 | 2.35 | 6J5GT | 2.55 | OW4GT | 2.40 | 12AT7 | 3.05 | 12SF7 | 3.95 | 2525 | 2.90 2.90 | 运运 |  |
| 2AF4 | 4.05 | 588 | 3.90 | 6AR5 | 2.60 | 6BZ6 | 2.25 | $6 \mathrm{J6}$ | 2.80 | 6W6GT | 2.80 | 12AU6 | 2.15 | 12567 | $3.70{ }^{*}$ |  | 4.35 |  | 莡苟 |
| 2AF4A | 4.05 | 58E8 | 3.30 | 6AS5 | 2.40 $3.30 *$ | 6827 | 4.00 | ${ }^{616} 6$ A | 2.80 | ${ }^{6 \times 4}$ | 1.65 | $12 \mathrm{AU7}$ | 2.45 2.45 | 12SH7 | 3.65 $3.25 *$ | $27$ | 4.35 |  |  |
| 2BN4 | 2.55 | 5BK7A | 3.40 | 6AS8 | 3．30＊ | 6BZ8／×155 | 4.25 | $6 \mathrm{J7}$ | 4.00 | 6X5GT | 2.05 | 12AU7A | 2.45 | $12 \mathrm{SJ7}$ | $3.25 *$ | 35A5 | 4.35 3.50 |  | ¢0．0．0 |
| 2 CY 5 | 2.80 | 5BR8 | 3.30 | 6AT6 | 1.90 | 6C4 | 1.85 | 6J7GT | 4．00＊ | 6X8 | 3.15 | 12AV5GA | 3.85 1.65 | 12SJ7GT | 3.20 $3.10{ }^{*}$ | 35B5 | 2.65 | 밍 - |  |
| $3{ }^{\text {a } 2}$ | 3.50 | 5BT8 | 3.30 | 6AT8 | 3.20 3.35 | 6C5 | $2.65{ }^{*}$ | 6K6G T | 2.35 | 6Y6GA／G | 3.45 | 12 AV 6 12 V 7 | 1.65 3.20 | 12SK7 12SK7GT | $3.10 *$ 3.05 | 35 C 5 |  |  | 品荷 |
| $3{ }^{3} 3$ | 3.40 | 5CG8 | 3.20 | 6AU4GTA／GT | 3.35 | 6C6 | 4.35 | 6K7 | 3.80 | 7A4／XXL | 3.25 | 12AV7 | 3.20 2.95 | 12SK7GT | 3.05 3.75 | 35 C 5 35 L 6 GT | 2.15 2.40 | 会号吕茄 | 昌答 |
| 3AF4A | 4.05 | 5CL8 | 3.15 | 6AU5GT | 4.30 | 6CB5A | 7.50 | 6K7G | 3.80 | 7A5 | 3.85 | 12AW6 | 2.95 | 12SL7GT | 3.75 | 35L6GT | 2.40 | 以边 | － |
| 3AL5 | 1.85 | 5CL8A | 3．15＊ | 6AU6 | 2.10 | 6CB6 | 2.25 | 6K7GT | 3.80 | 7ab | 3.15 | $12 \mathrm{AX4GTA} / \mathrm{GT}$ | 2.70 | 12SN7GT | 2.70 | 35W4 | 1.40 |  |  |
| 3AU6 | 2.15 | 5CM8 | 3.55 | 6AU6A | 2.10 | 6CB6A | 2.25 | 6K8 | 4.45 | 7A7 | 3.50 | 12AX7 | 2.55 | 12SN7GTA | 2.70 | 35 Y 4 | 2.75 |  |  |
| 3AV6 | 1.75 | 5CZ5 | 2.85 | 6AU8 | 3.50 | 6CD6GA／G | 5.80 | 6L6 | 6.10 | 7A8 | 4.45 | 12AZ7 | 2.75 | 12SQ7 | $2.90 *$ | 3573 | 2.75 |  |  |
| 3 B 2 | 6.25 | 50H8 | 4.05 | 6AV5GA | 3.80 | 6CF6 | 2.55 | 6L6GB／GA／G | 4.20 | 7aF7 | 3.85 | 12B4A | 2.70 | 12SQ7GT | 2.65 | 35Z4GT | 2.35 |  |  |
| 3BA6 | 2.15 | 5 J 6 | 2.80 | 6AV6 | 1.65 | 6CG7 | 2.45 | 6L7 | 4.35 | 7ag7 | 3.85 | 12BA6 | 2.00 | 12V6GT | 2.15 | 35756 T | 1.85 |  |  |
| $3 \mathrm{BC5}$ | 2.35 | 5T4 | 7.25 | 6AW8A／6AW8 | 3.55 | 6C68 | 3.15 | 6N7 | 4.30 | 7aut | 2.60 | 12BA7 | 3.95 | 12W6GT | 3.00 | 36 | 4.35 |  |  |
| 3BE6 | 2.25 | 5T8 | 3.40 | 6AX4GT | 2.65 | 6CG8A | 3.15 | 6N7GT | 4.35 | 7B4 | 3.05 | 12BD6 | 2.25 | 12×4 | 1.80 | 41 | 3.50 |  |  |

## ORDER 50 OR MORE TUBES AND SAVE AN ADDITIONAL 10\％．OFF TOTAL PRICE



## SPECIAL PURPOSE TUBES

| Type | Price | Type | Price | Type | Price | Type | Price | Type |  | Price | Type | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| OA2 | 1.26 | 4．125A | 30.25 | 450才H | 77.00 | 866 JR | 1.95 3 | 1629 | ＊ | $\xrightarrow{.25}$ | 6360 7094 | 4.00 31.95 |
| OA3 | 1.27 | ${ }_{4-250 A}^{4-250 A}{ }^{\text {a }}$ 22 | 41.25 4 4 | 502A | ${ }_{2}^{2.03}$ |  | $\begin{array}{r}3.75 \\ \hline+\quad 1.95 \\ \hline\end{array}$ | 1635 |  | 1.85 | 7094 8000 | 31.95 26.40 26.35 |
| OA4G | 1.68 | ${ }^{4-250 A}$ | 41.25 $* \quad 32.50$ | 575A | 22.15 33.00 | ${ }_{\text {872－AX }}$ | － $\begin{array}{r}1.95 \\ \hline 9.35 \\ \hline\end{array}$ | 2557 |  | 9．85 | ${ }^{8005}$ | 16.20 |
|  |  | 4832 | 12.00 | 673 | 22.15 | 884 | 1.85 | 5581 |  | 2.70 | 8008 | 9.35 |
| OC3 | 1.27 | 4E27A／5－125B | － 40.00 | 801 A | ． 95 | ${ }^{885}$ | 2.00 | ${ }_{5582}^{558}$ |  | 4.95 | 8008AX | 9.35 |
| OD3 | 1.27 | ${ }^{4 \times 150 A}$ | － 12.95 | 802 | 9.85 | 902．A | 18.00 2.85 | 5584 |  | 4.30 |  | ＊$\quad .75$ |
| ${ }_{1} 1$ | 3.85 15.25 | ${ }^{4 \times 500 A}$ | ＋ $\begin{array}{r}121.00 \\ +\quad 2.95\end{array}$ | 804 | 27.15 2.95 | ${ }_{923}^{922}$ | 2.85 | 55618 |  | 5.20 4.93 | ${ }_{9003}^{9002}$ | ＊ .75 |
| ${ }_{1}{ }^{\text {PP22 }}$ | 15.25 28.95 | 5R4－GY | ＊$\quad 2.95$ | 8807 | 2.95 2.90 | ${ }_{927}$ | 3.75 | 5642 |  | 4.93 1.36 | 9004 | 3.70 |
| 1 P 29 | 3.80 | 5UP1 | － 2.95 | 809 | 5.65 | 929 | 2.00 | 5651 |  | 1.78 | 9005 | ＊． 75 |
| 1 P 39 | 2.15 | 6AG7－Y | 2.25 | 810 | 10.95 | 930 | 10．45 | 5652 |  | ${ }^{6} 6.65$ | 9006 | 5.55 |
| 1 P 40 | 3.00 | 6AS6 | 3.46 4.45 | ${ }^{811 . A}$ | 5.65 | ${ }_{934}$ | 3.65 | 5654 |  |  | KT－66 |  |
| ${ }^{2}{ }^{\text {APPIPI－A }}$ | 13.65 13.80 | ${ }_{6}{ }^{64} 4$ | 4.33 | $8^{813}{ }^{-A}$ | $\times \quad 9.65$ $\times \quad 9$ | ${ }_{935}$ | 9.95 | 5687 |  | 4.25 | KT．88 | 4.50 |
| 2 C 39 A | 22.50 | 6 L 4 | 7.35 | 814 | 23.55 | 954 | ＊${ }_{*}$ | 5691 |  | 8.45 | T－40 | 8.90 |
| 2 D 21 | 1.62 | 65J7－Y | 1.45 | 815 | － 3.95 | 955 | ＊$\quad .75$ | 5692 |  | 8.15 | TZ－40 | 8.50 |
| 2 E 24 | 5.25 | $125 \times 7 \mathrm{CT}$ | 1.67 | ${ }_{828}^{816}$ | 27.15 | ${ }_{957}$ | 5.35 | 5696 |  | 6.40 | V．70－D | 19.00 |
| 2 E 26 | ＋ 3.85 | ${ }_{125 Y}{ }^{25 \times 7}$ | 1.70 | 828 | 27.50 | 958－A | ＊． 95 | 5751 |  | 3.70 | E．729． | 28.90 2.99 |
| ${ }_{3 A 4}{ }^{2} \times 2{ }^{\text {a }}$ | － 75 | 25－T | 15.00 | 829－B | － 7.95 | 991 | ． 87 | 5763 |  | 2.37 |  |  |
| ${ }^{3}$ A5 | 1.20 | 35－T | 20.00 | ${ }^{832-A}$ | ＊ 6.95 | 1612 | 3.20 | 5823 |  | 1.57 |  |  |
| 3API | ＋ 2.25 | 35－TG | 24.00 | 833．A | 55.00 | 1614 | ＊ 2.95 | 6012 6080 |  | 6．25 |  |  |
| $3 \mathrm{BP28}$ 3 BP .1 | ＋ 6.45 | ${ }^{75 T L}$ | 28.00 | ${ }_{836}^{833-A}$ | 55.00 9.00 | 1619 | ＊ .50 | ${ }_{6082}$ |  | 5.30 |  |  |
| ${ }^{3} \mathrm{C} 23$ | ＊ 21.95 | 1007L | － 6.95 | 838 | 20.00 | 1620 | 6.36 | 6146 |  | 4.90 |  |  |
| 3 E 22 | 8.30 | ${ }^{2507 H}$ | 33.00 | 845 | 20.85 | 1621 | 1.95 2.70 | ${ }_{6}^{6159}$ |  | 4.95 | ＊Surplus |  |
| 4.65 A |  |  | $\begin{array}{r}33.00 \\ \times \quad 25.00 \\ \hline\end{array}$ | ${ }_{866-A}^{845}$ | 20.85 2.65 | 1625 | ＋$\quad . .25$ | ${ }_{6} 6197$ |  | 2.55 2.40 |  |  |
| 4－125A／1D21 | ＋19．95 | 304TL | ＊ 25.00 | 866 A | 2.65 2.40 | 1626 | ＊ .25 | 6264 |  | 18.00 |  |  |

# HAND TOOLS FOR HOME aND HOBBY 



## THESE FINEHAND TOOLS ONLY $99 \%$

A. Drop forged crescent wrench choice of 8 or 10 inch size.
B.Three wood chisels in plastic case. three sizes $1 / 2,3 / 4$, and 1 inch.
C. Set of ten high speed twist drills popular sizes in handy rack.
D.Long nose side cutting pliers 6 inch size. A must for radio work.
E. Diagnol cutting pliers. $61 / 4$ inch.
F. Set of six popular size screwdrivers in handy metal wall rack.
G. Hand saw set with five popular blades.
H. Set of four small files with handles and plastic carrying case.
I. Handle with three screwdriver blades, awl and nail puller. With plastic case.
J. Handle with six popular nut dre sockets. Complete with plastic case.
K. Set of eight handy double ended wrenches in plastic carrying case ${ }_{\text {b }}$
L. All aluminum three way level.
M. Wooden two way carpenters level.

N . Set of two high voltage insulated screwdrivers. 8 and 10 inch sizes.
O. 13 inch claw hammer. Wooden handle.
P. 15 inch hack saw. Plastic handle.
Q. 9 inch monkey wrench



New! Powerful $1 / 4$-in. geared chuck drill with attractive mirror finish. The ruggedly built Universal ACDC, 115 volt, motor has a full 2.6 ampere rating. No load speed of 2000 RPM. Dynamically balanced armature for smooth, vibration-free performance.



## Model 2100

New! Jig Saw with Jig-Lite . . . You see as you saw! Cuts $2 \times 4$ 's; pepfect circles up to $17^{\prime \prime}$; or bevel cuts at $45^{\circ}$ on either side! This powerful husky is a whole shop full of saws in one! Does the work of a rip, band, coping. crosscut, scroll, keyhole and hack saw. Cuts everything from metal to leather! Powerful series type motor has a full 1.8 ampere rating. Cuts at 2650 strokes per minute. Motor is amply, cooled by internal fan that also provides air iet to keep, cutting line clear of sawdust. Has auxiliary hondle: stide-type switch; $\mathbf{8}^{\prime \prime}$ calibrated, rip and circle cutting guide; and six foot rubber cord. New Silver-Luster finish. Comes with package of 3 blades. Weight, $51 / 4 \mathrm{lbs}$.

Model 280 Oscillating Sander with packet of 9 sandpaper strips and lambswool polishing bonnet. Orbital motion of sh" produces a satin smooth finish free from marks or scratches. Exceptionally compact and lightweight! Only $41 / 2$ pounds. Over 25 sq./in. of sanding surface. Sponge rubber pad is $71 / 4^{\prime \prime} \times 35 / 9^{"}$ with patented knurled, roller-type, clamps. Powerful Universal AC-DC moton has a full 2.0 ampere rating. No load speed of 3500 orbits per/min. Equipped with auxiliary handle; six foot rubber
cord; and new mar resistant Silver-Luster finish.

## ORDER FROM THE MOST COMPLETE ANO DIVERSIFIED ST

## ORDER NOW! usethis SPGFDY ORDER FORM



## Columbianis sales

AIRCRAFT-RADAR EQUIPMENT • SURPLUS RADIO PARTS \& SUPPLIES • SHORAN • LORAN

H I - FI-STEREO-COM MUNICATIONS
2251-53 WEST WASHINGTON BOULEVARD - LOS ANGELES 18, CALIFORNIA - REPUBLIC 1-2206


## COLUMBIA ELECTRONIC SALES

 MAIL ORDER DEPT.WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLVD.

SAN FERNANDO VALLEY RETAIL STORE and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.

## MORE BARGAINS FRON COLUMETA THE GEM OF ELECTRONICS

## SELENIUM RECTIFIERS

by International Rectifier Corp.
$50 \mathrm{ma} .130 \mathrm{v} . \mathrm{rs}-050$ $\qquad$
$65 \mathrm{ma} .130 \mathrm{v} . \mathrm{rs}-065$ $\qquad$ 79 ç
$100 \mathrm{ma} 130 \mathrm{v} . \mathrm{rs}-100$ $\qquad$ . 1.19 $200 \mathrm{ma} .130 \mathrm{v} . \mathrm{rs}-200$......... $\$ 1.39$ $350 \mathrm{ma} .130 \mathrm{v} . \mathrm{T}-350$ $\qquad$ . $\$ 1.79$
$500 \mathrm{ma} .130 \mathrm{v} . \mathrm{T}-500$ $\qquad$
all are complete $\mathrm{w} /$ mounting hdwe

## MIKES-HEADSETS-CORDS

T-17-D Mike C.A.A. new boxed $\$ 7.50$ T-17 Hand Carbon Mike used $\$ 3.50$ RS-38 new straight cord $\$ 4.95$ 6 ft . Coil cord, 3 wire $95 ¢$ Chamois headset pads $39 \%$ pr.

3 pr./ \$1.00
CD-307 5 ft Headset Ext. Cord new 89¢, used 39 c 3/\$1.00 RS- 38 checked, coil cord $\$ 3.95$

## BARGAIN ASSORTMENTS

100 Assorted Resistors Late mfg. good values

99c
100 Assorted Condensers Micas, paper, bath tubs \$1.95

25 Assorted Potentiometers Good values
$\$ 3.95$


Wall type Telephone Complete with dial, handset and box with ringing eqpt. perfect for house and garage systems. exc. cond

2 FOR $55.00 \square 95$


Headset and Microphone Combo Late model as used by telephone operators and military. Single headphone and swivel mounted mike. Exc. cond.
$\$ 5.95$

## Crystal Socket

2 prong mica filled.
holds FT-243 type


RM-29 Remote Control Complete with magneto generator and line matching transformers. Makes a fine phone patch. Can also be used in pairs for portable telephone systems


## COLUMBIA ELECTRONIC SALES MAIL ORDER DEPT. <br> WHOLESALE - RETAIL STORE <br> 2251 WEST WASHINGTON BLVD. <br> SAN FERNANDO VALLEY RETAIL STORE <br> and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD. <br> LOS ANGELES 18, CALIFORNIA - REpublic 1-2206 <br> NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668



AN/TRC $70-100 \mathrm{mc}$ F.M. 50 watt Transmitter. One channel xtal control. Used for 4 channel telephone links.
Write for complete technical info.


AN/GRC-26A- Complete trailer provides facilities for sending and receiving Radioteletypewriter signals over a range of $2-18 \mathrm{mcs}$. Voice and C.W. provided also. One of the latest and finest sets on the surplus market.


AN/GRC-27- U.H.F Ground station. $200-400 \mathrm{mcs} .1750$ channels. 100 watt transmitter. 110 v. 60 cyc. powered. Complete in rack.
P.U.R.

## AN/GRC $32 B$

AN/GRC-32B- U.H.F. portable ground station. uses ARC-27 as basic unit with A.C. supply and control circuits. May be remote controlled. 200-400 mcs.
P. U.R.

AN/PRC-14- U.H.F. pack set Consists of TransmitterReceiver and Power pack. $200-400 \mathrm{mcs}$.

## AN/PRCI4

## AN/PRC8.9,10

AN/PRC-8, 9, 10
portable FM back pack sets for armored, artillery and infantry units. Battery powered. Can be operated in vehicles and aircraft. up to 12 mile range Freq. 20-27.9, 27-38.9, 38-54.9 mcs. resp.
P.U.R.

(20)

Now in stock the WORLDS LARGEST inventory of BRAND NEW surplus maintanance spare parts for portable and vehicular military equipment such as GRC, PRC, VRC, URC,TRC, MRC, and etc. Listed above you will find only a small listing of our vast stock of GRC \& PRC components alone. Shortness of space in this small catalog prohibits a complete listing. Within the past 2 months we have received over TEN TRUCK AND TRAILER LOADS OF AN/GRC-3 thru 8 PARTS ALONE !!!! Each item listed is brand new in it's original moistureproof wrapping. Thousands of items not listed. Your inquiries are welcome and promptly answered. SEND US YOUR INQUIRY NOW WHILE QUANTITY AND SELECTION IS STILL AT IT'S PEAK !!!!!

MAIL ORDER DEPT.

WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLVD. LOS angeles 18, CALIFORNIA - REpublic 1-2206 OPEN MON. \& FRI. TILL 9:00 P.M. - SAT. 9 TO 5:30

SAN FERNANDO VALLEY RETAIL STORE
and WhOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.
NORTH HOLLYWOOD, CALIFORNIA - STanley 7-2113 - POplar 6-8668
OPEN 9 TO 9 WEEKDAYS - SAT. 9 TO 6

## OUR FACILITIES INCLUDE CERTIFICATION MIL SPEC PACKING. TECHNICAL INFOPMATION

## TA-2J



TA-2J- 100 Watt 8 Channel Crystal Controlled Transmitter Covers $300-600$ and $2.9-15 \mathrm{mc}$. Motor switching Can be remote controlled.
P.U.R.

$\mathrm{BC}-728$ portable superhet receiver- covers 2-6 mcs. preset channels, 4 push buttons. Powered by selfcontained 2 volt wet batty. (not supplied) Exc. cond.
\$ 9.95
Less tubes or spkr $\$ 7.95$
We will ship what is available


The reliable military field telephone. Operates up to 5 miles using self contained flashlite batteries. Complete with lever actuated Handset in leather or canvas carrying case. Exc. cond.

2 FOR $\div 25^{\circ}$


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

$$
A \geqslant B \Delta A D A D
$$

Airborne Search Radar, complete for use in planes or boats. "X" band. Lightweight.
P.U.R.


BC-603 20-27 mc FM Recvr 10 channel push button, w/spkr all tubes, less dyn. new $\$ 12.95$
BC.603


SCR-578


SCR-578 Lifeboat Transmitter used for sending S.O.S. for rescue planes or boats.

> AN/CRT-3A C.A.A. approved model of above.
P.U.R
RTA-IB

RTA-1B- Bendix 50 Watts output, 2500-13000 kcs. 10 channel, motor switching. Receiver and Transmitter with self-contained dynamtor supply. P.U.R.

## AN/UPM-30

AN/UPM-30 TEST SET Consists of TS-545/UP Echo Box and accessory kit. Covers 1150 to 1350 mcs Hand tuned. Input 50 ohms Brand new. $\$ 25.00$


TCS Complete Station
$1.5-12 \mathrm{mcs}$. VFO
input power 50 watts phone crystal control, 4 channels. choice of power supply. 115 volt a.c. or $12,24,115$ volt d.c. Complete with control box, speaker, cables, antenna loading coil. Receiver, Transmitter, all tubes, less crystals. P.U.R

## 

BC-611 Handie Talkie Parts All New
Mike or earphone cover caps 39 C pr FT-501A "A" batt. holder 59¢ $2 / \$ 1.00$ Ant. Assy $594 \quad 2 / \$ 1.00$
Coil \& Crystal Set 3525 kc . \$2.95

Crystal Set 80 each Brand New FT-241 Holders from 370.370 kc to 516.667 includes 400 $\mathrm{kc}, 455,556,500 \mathrm{kc}$.

Complete Set $\$ 5.95$

Coax Cable
RG-59/U 72 ohm 6$\}$ ft \$4.95/100
RG-58/U 52 ohm $6 ¢$ ft $\$ 4.95 / 100$

12 V d.c. @ 30 amp . Generator
Compact unit makes fine auxilary generator for your car.

Brand New. \$3.95

60 mes Hi-Gain I. F. Strip Model AM-259/ARR-27, uses 8 ea. 6AK5, p/o ARR-27 exc. less tubes While they last! \$1.49

MC-385-C Hi-lo Adapter 600 ohm to 4 K ohm. Can be reversed $39 ¢$ ea. $3 / \$ 1.00$
FL-8 1020 cps QRM filter good cond. $\$ 1.95$ ¢

Standard Telephone Dials
3 for $\$ 1.39$ exc conc. $49 ¢$

## A/R FORCE TRAINING BOBENE

Air Force Training Books 100 to 200 pages each, Bound fully illustrated.

Advanced Circuits AF-52-18 Antenna Systems
Sheet Metal Maintenance Shoran Ground Station Aircraft Engine Conditioning Airborne Shoran
Your Body in Flight
Advanced Circuits
Aerial Photo Reconnaissance
$8 \frac{1}{2}$ " $\times 11^{\prime \prime}$ smooth paper
bound with covers.

## Your Choice 5715

Headsets
HS-23
eadsets
HS-33 used lo-imp
$\$ 3.95$
new
\$3.95
$\$ 5.50$

6 ft. retractable Cord Assy on metal reel. Install as a trouble lamp in your car.
$19 ¢$ ea. $6 / \$ 1.00$

Electrolytic Condensers $1000 \mathrm{mfd}-15 \mathrm{v}$. d.c. Round Can new 35 ¢ ea. 4 for $\$ 1.00$

Counter Dial Assembly From BC-191 \& BC-375 new $\$ 1.49$

Carbon Pile Voltage Regulator

BC-604 XMTR $20-28 \mathrm{mc}$.
Brand New less tubes, one
input xfrmr, top, bottom panels.
Contins wealth of parts, inc
(a $1.2 \mathrm{ma} 2^{\prime \prime}$ meter) each $\$ 2.95$ Two for $\$ 5.00$

All Types of Control. Boxes In Stock
write us your needs

12 v . d.c model mfd by Eclipse Complete with field rheostat

Brand New \$1.49 ea.
4 mfd @ 600 v. d.c. 39 C
5 mfd @ 600 v. d.c. $45 ¢$
$6 \mathrm{mfd} @ 600 \mathrm{v} . \mathrm{d} . \mathrm{c} .49 \mathrm{c}$
$7 \mathrm{mfd} @ 600 \mathrm{v}$. d.c. $59 ¢$
$10 \mathrm{mfd} @ 600 \mathrm{v} . \mathrm{d} . \mathrm{c} . \quad 89 \mathrm{c}$
30 mfd @ 600 v. d.c. $\$ 1.95$
$4 \mathrm{mfd} @ 1000 \mathrm{v}$. d.c. $95 ¢$
$4 \mathrm{mfd} @ 2500 \mathrm{v}$. d.c. $\$ 2.95$

GN-39F Generator for BC-191 self-excited.
output 1000 v. d.c. @ 350 ma .
14.6 v . @ 25 amps .
speed 2700 rpm . pulley drive. size $8^{\prime \prime}$ dia. x $16^{\prime \prime}$ long
shpg. wt. 125 lb . BRNN $\$ 8.95$

TBY Vibrator Pack
New Oil Condensers New On Condensers

[^0]BC-604 Transmitter 30 watts 10 channel push button FM crystal controlled. $20-27 \mathrm{mcs}$. A deal for the new Citizens Band. like new complete with tubes, less dyn. \$7.50

BC-684 27-39 mcs. FM 10 channel push button With tubes, less dyn.

Exc. cond. $\$ 7.50$

## Dynamotors

Eicor 6v input- $425 \mathrm{v}-375 \mathrm{ma}$. exc. cond. $\$ 7.95$

DM-25 12v input-250 v d.c. @ 50 ma . new $\$ 2.49$

RAX Rec. Dyn. 24 v input output 166 @ 90 ma . used \$2.95

Desk type Telephones With handsets.
Complete with dial $\$ 4.95$ less dial \$3.95

# COLUMBIA ELECTRONIC SALES MAIL ORDER DEPT. 

WHOLESALE - RETAIL STORE 2251 WEST WASHINGTON BLVD.

SAN FERNANDO VALLEY RETAIL STORE and WHOLESALE WAREHOUSE 4900 LANKERSHIM BLVD.

## EDUCATIONAL ELECTRONICS



## TRANSISTOR SET

Have fun with Electronics. . . This new easy-to-use Transistor Set enables you to
build and rebuild nine (9) different radio sets. A complete working radio can be built in less than 10 minutes.
"Plug-In" features mean safe, simple, fast building of sets - with no soldering or tools. From ages 8 to 21 , a set which will delight, teach, and be a lasting fascination. Asingle flashlight battery runs this set for thousands of hours.
With this set, you can build: A Voice Transmitter; Code Transmitter; 6 Procrystal radio, to a transistor radio, to a powerful regenerative long range radio; a Code Blinker Set. Contains all necessary components, plus a complete instruction manual. No knowledge of electricity is needed, but a lasting interest is practically assured. ${ }^{\text {Shpg. Wt, }} 5 \mathrm{lbs}$.

Erectronic Model T-175 Two-Transistor
Receiver and Broadcast Set
Builds and rebuilds 10 Sets
5 Radio Receivers
2 Voice Transmitters
1 Code Transmitter
1 Musical Tone Producer
1 Code Practice Set
No Tools or Soldering Easy to Do!!


ERECTRONIC

## Vacuum Tube Set

Builds and rebuilds 15 different radio sets. No soldering or tools needed. Exclusive "Plug-In' features and paint-by-number system of assembling -mean fast, safe construction. Circuits can be built over and over, and additional parts can be added later, to build even more sets.
Operates on 2 batteries ( $1 \frac{1}{2} \mathrm{~V}$. flashlight cell and a 45 V . "B"). All the parts are furnished for building:
A Shortwave Radio, Code Transmitter, Voice Transmitter, 2 Crystal Sets, Six Crystal and Tube Radios, 2 Pentrode Tube Super Radios, and a Code Practice Oscillator Set. A detailed construction manual is furnished.
Approved by educators -now in use in over 400 schools. Shpg. Wto, 5 lb

## Be Sure to Read These NEW GERNSBACK LIBRARY Books

43-MODEL CONTROL BY RADIO. Remote con trol of model planes, boats, autos. Theory and construction of coders, transmitting and receiving systems, decoders, power control circuits, servomotors, control systems. 112 pages. $\$ 1.00$
44-BASIC RADIO COURSE. 26 chapters on radio theory as easy to read as a novel. Describes the action of radio circuits in a quick-to-grasp manner. Hard cloth cover. 176 pages. \$2.25

45--RADIO TUBE FUNDAMENTALS The first low priced book to give a complete understanding of radio tubes. 96 pages
$\$ 1.00$
46 - TELEVISION TECHNOTES. Case histories of TV troubles. Describes and solves over 600 tough TV servicing problems. 128 pages. $\$ 1.50$

47-RADIO \& TV HINTS. Hundreds of shortcuts The hints and kinks in this book are practical, and can be put to work by you. 112 pages. $\$ 1.00$ 48-HIGH FIDELITY Maximum information on audio design, construction, measurement tech niques. Complete section on building amplifiers. 128 pages
$\$ 1.50$
49-RADIO AND TV TEST INSTRUMENTS. Build 22 instruments: Picture Tube Circuit Analyzer, Picture Tube Tester, Three-Inch Scope, Portable Generator, Signal Tracer, Practical V.T.V.M., Marker Generator, etc. 128 pages. $\$ 1.50$ 50-TV REPAIR TECHNIQUES. How to do signal tracing, service TV in the home, overcome high voltage troubles, picture-tube circuit difficulties, service horizontal lock, cure TVI, intercarrier buzz, brightness troubles, etc. 128 pages. $\$ 1.50$ 51-TRANSISTORS.THEORY AND PRACTICE Semi-conductor theory, transistor characteristics equivalent circuits, transistor amplifiers, oscilla tors. Gives data on practical transistor circuits. tests and measurements. 144 pages. $\$ 2.00$

52-THE OSCILLOSCOPE. Chapters on wave forms, the cathode-ray tube, sweep systems, typical scopes, alignment techniques, tests, meas urements, experiments. 192 pages. $\$ 2.25$
53-RADIO-CONTROL HANDBOOK. For all hob byists interested in radio control for planes, boats, trucks, tractors, etc. Practical construction ideas and suggestions. 192 pages. \$2.25 54-PROBES. Explains how probes are used Describes crystal-demodulator; voltage-doubler balanced; low capacitance; high-voltage; isola tion and direct probes, including a transistorized type. 224 pages.
\$2.50

55-SWEEP \& MARKER GENERATORS for TV and Radio. Complete theory and use of sweep and marker generators. 224 pages. 56 HIGH FIDELITY CIRCUIT DESIGN. Feedback. drivers, inverters, power supplies, attenuators, filters, equalizers, speaker systems. Hard cloth cover. 304 pages.
$\$ 5.95$
57-THE V.T.V.M.-how it works-how to use it. Written by an RCA engineer, supplies full information on the theory and practical operation of the vacuum-tube voltmeter. 224 pages. $\$ 2.50$ 59-SERVICING RECORD CHANGERS. Excellent source of profit for the service technician. Detailed drawings show how to make repairs. Full servicing information. 224 pages. $\$ 2.90$ 60-RAPID TV REPAIR. Alphabetical listing of hundreds of TV troubles - symptoms and spe. cific information on repair. 224 pages. $\$ 2.90$ 61-TRANSISTOR TECHNIQUES. A useful guide on how to work with and test transistors; how to make transistor measurements; also supplies practical building projects. 96 pages.
$\$ 1.50$
62-TV-IT'S A CINCH! Snappy conversational style with hundreds and hundreds of drawings help you breeze through TV. 224 pages. $\$ 2.90$ 63-TRANSISTOR CIRCUITS. Over 150 practical circuits using transistors only. A guide for the experimenter interested in getting the most out of transistors. 160 pages.
\$2.75
64-UNDERSTANDING HI-FI CIRCUITS. A new approach to audio. Explains how modern audio circuits work and what you can expect from them. 224 pages.
\$2.90
65--SERVICING COLOR TV. How to repair color receivers. Illustrated with photos, drawings and troubleshooting charts. 224 pages

66 - BASIC AUDIO COURSE. Fundamental audio concepts; describes theory and operation of microphones, equalizers, amplifiers, speakers, en closures. 224 pages.
\$2.75
67-ELEMENTS OF TAPE RECORDER CIRCUITS. Complete coverage of the electronic portion of tape recorders. For technicians and audiophile. 224 pages.
\$2.90
68-TV AND RADIO TUBE TROUBLES. Service TV and radio receivers by understanding tube troub. les. Explains how to recognize symptoms quick. ly.
$\$ 2.90$
69-ELECTRONIC HOBBYISTS HANDBOOK. Scores of circuits for the experimenter and hobby. ist. 160 pages
$\$ 2.50$

## zkitcraftz <br> Educational Electronic Devices •For Juniors

Kitcraft Model \#130
Ready built Radio with
Germanium Diode
$\$ 2.99$
Kitcraft Model \#300 Radio Transistor Kit
with Diode
$\$ 3.99$

Kitcraft Model \#200 | Kitcraft Model \#400
Radio Miniature Tube Kit With Tube

## Transistor Code Oscillator

 Kit \$3.99

> COLUMB/A electronic sales 2251 W. WASHINGTON BLVD. LOS ANGELES 18,CALIFORNIA

FORM 3547 REQUESTED
John D Martin 2405 - and Ave North
Billings, Mont

$$
s^{2} 512 l \text { ton }
$$


[^0]: