GROVE ELECTRONICS
1965 VALUE-PACKED CATALOG NO. 653
4103 WEST BELMONT AVE.
CHICAGO, ILLINOIS 60641

FAST DELIVERY!!

FREE BONUSES!!

TERRIFIC SAVINGS!!

GROVE ELECTRONICS

MIDLAND

TURNER
Communications

CITIZENS
Microphones

GROVE ELECTRONIC SUPPLY COMPANY

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CAT. NO. 653
PHONE: (312) 283-6160

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REVOLUTION IN CB BASE ANTENNAS

ROTATE THE SIGNAL NOT THE ANTENNA

TECHNICAL DATA

THE SCANNER... MODEL M-119
Citizens Band Antenna
(27 Mc.)

MODEL M-119
CITIZEN'S BAND ANTENNA
(27 Mc.)

A copy of the radiation pattern is enclosed. Only a single pattern is in effect at any one time. Determined by the position of control switch. The 7.25 gain achieved by this configuration provides the equivalent of 30 watts of power from a 5 watt unit. Referenced to a standard flat ground plane. The 23 db attenuation to the rear serves to effectively limit unwanted signals and noise.

Construction is durable and compact. "THE SCANNER" has a 3 foot radius and is 17" 6" in height.

"THE SCANNER" consists of three center-fed, half-wavelength, vertical dipoles. They are arranged 120° apart on a three foot radius. A control box located near the transceiver, allows the user to select any one of the dipoles for transmitting (or receiving). When one dipole is selected, the other two become parasitic elements, producing a beam effect in the selected direction. The beam pattern of each dipole is arranged in such a way that, when overlapped, the composite pattern is effectively omnidi-directional.

You can "zero-in" and complete a transmission with "THE SCANNER" faster than an old-fashioned rotator can swing your antenna into position.

CHOOSE ONE FREE BONUS

- 100 ft. RG8u foam cable
- XS-12 CHANNEL SELECTOR 12-pos.
- FS-60 S.W.R. BRIDGE
- SP-99 FIELD STRENGTH METER
- OR-75 ft. of 4-Cond. Cable for SCANNER

GROVE ELECTRONIC SUPPLY COMPANY
BASE STATION ANTENNAS
the antenna specialists co.

Way-out new horizons for your base station signal!

Unprecedented 3.75 db. true omni-directional gain...minimum of 6 db. signal-to-noise improvement...verified in comparative antenna farm and laboratory measurements!

Reach out like you've never reached before with the incomparable new SUPER MAGNUM Base Antenna! Verified omni-directional gain is 3.75 decibels over reference (standard true ground plane antenna)—an actual 10.3% improvement over the best competitive omni antenna on the market! Equally important is the SUPER "MAGNUM" tremendous signal-to-noise improvement of 620 db., giving you the clearest reception possible as well. Easy as a Magnum and that's the easiest to assemble, quick to install, with all the great quality features and lifetime construction that have made it the world's most popular CB base antenna. See the magnificent new SUPER MAGNUM today!

GIVES YOU AT LEAST 10% MORE TRUE GAIN

-CHOOSE ONE BONUS-

$29.35 EA.

CONV. KIT
TURN YOUR MAGNUM INTO A SUPER MAGNUM IN 15 MINUTES...GET 5.75 TRUE GAIN!
Model M-118

ONLY $10.75

GROVE ELECTRONIC SUPPLY COMPANY
COMMUNICATION ANTENNAS
the antenna specialists co. • cleveland 6, ohio

SUPER "MAGGIE MOBILE" CB SERIES!

FEATURING:
- choice of roof mounting types!
- with (or without) stainless steel spring!
- spring kit available separately!

MODEL M-123
Features are the "favorites" found in our famous M-67 (won't repeat hero-people know) but now available with "snap-in", 3/8" hole mount! So simple and quick to install! No "groansack" to bulge the headliner. Cable ends up in easy, solderless connection. By the way, this mounting feature has been used for sometime in other commercial antennas we make. Been very successful! Supplied with 20 ft. RG-58 u cable and PL-259 connector.

$13.46 ea.

MODEL M-124
Now... here's how jazzy the M-67 looks with its "STAINLESS STEEL" (rustproof) spring. Offers extra special whip protection plus professional appearance! Course we supply a slightly shorter whip to make up for the spring (like 36-1/4" long instead of 39-3/4")! Whip adapter makes for extra fine tuning tool! This model has same mount (3/8" hole) as M-67 plus all the fine things people say about our M-67. "Read about the spirit under Model M-126, it's a jewel! Supplied with 20 ft. RG-58 u cable and PL-259 connector.

$15.41 ea.

MODEL M-125
And if it's a combo of a "stainless steel spring and a 3/8" hole, "snap-in" mount, you're after—here 's! Just like the M-123 except for the spring and shorter whip. Of these three new antenna models, we're kinda puttin' our bets on this baby. Seems to offer just about everything that has "people appeal". Supplied with 20 ft. RG-58 u cable and PL-259 connector.

$15.41 ea.

NOTE: Model M-74 (cowl-deck, swivel mount) and Model M-73 (trunk mount) also available with spring feature. Order Model M-128 for spring version M-74. Model M-127 for spring version M-73.

M-127 - $17.15 ea.
M-128 - $18.36 ea.

PLUS CHOICE OF ONE FREE BONUS!!

SUPER-MAGNETIC MICROPHONE HOLDER
MH-3

LAPEL TYPE CRYSTAL MICROPHONE
LM-100

5 POCKET LEATHER TOOL POUCH

MODEL M-126
The Spring Kit for present "Maggie Mobile" owners. (Goes on M-67, M-73, M-74.) The Spring (2-1/2") is taken from our professional line. Rustproof, stainless steel with chromed end bells. Kit includes: whip adaptor, a stud for mating to the transformer, allen wrench, and whip cutting information. Protects whips. Looks great!

only $5.25

THE ELECTRONICS SUPPLY COMPANY
NEW IMPROVED Hy-Gain CLR 2

The World's Finest Base Station Antenna for Citizens Band.

- 8db gain in all directions
- Large signal capture aperture
- Rugged double grip mast bracket
- Unique static arrester
- Taper swaged seamless aluminum tubing
- Quickly and easily installed

Here's the most efficient omni-directional base station antenna ever made for Citizens Band. Hy-Gain's Model CLR 2 is a complete re-design of the history-making CLR Collinear, the world's original gain base station antenna for Citizens Band. The CLR 2 combines Hy-Gain design and production ingenuity with the experience gained from over 80,000 CLR's now in use throughout the world to bring you the highest performance base station antenna made. Every significant electrical and mechanical innovation that has a justifiable application is incorporated in the new CLR 2. How good is it? The CLR 2 is positively guaranteed to outperform any omni-directional base station antenna made for Citizens Band...regardless of claims. Look at these features...

NEW MECHANICAL SUPERIORITY
Structurally, the CLR 2 is rugged. Every component part of the CLR 2 has been subjected to exhaustive and exacting laboratory and field testing to ensure maximum durability.

Rugged Double Grip Mast Bracket
A heavily ribbed, heavy gauge metal mast bracket binds the CLR 2 solidly to the mast. The 12" bracket provides two separate points of support to the bottom 12" of the radiator and the top 12" of the mast. Insures the CLR 2 will stand erect and secure at all times.

Taper Swaged Seamless Aluminum Tubing with Full Circumference Compression Fittings
Advanced technique of tapering tubing reduces diameters within inches as opposed to conventional methods employing several linear feet to accomplish comparable reductions. It vastly decreases wind load and gives added strength to the antenna. Full circumference compression fittings provide corrosion proof stability that defies electrical failures. Reduced wind load plus full circumference compression fittings insure CLR 2 will withstand gale-force winds.

Weatherability
All metal parts are iridite treated to MIL specs. Molded high impact Poly-Styrene insulators impregnated with tough, durable fiberglass are totally impervious to weather. Insulators are mounted under compression, never under tension.

Installs Quickly
The CLR 2 is factory pre-assembled except for telescoping tubing. All tubing is factory pre-drilled and coded -- no measuring required. Only minutes from carton to contact.

NEW ELECTRICAL SUPERIORITY
9.4db circuit gain in all directions
Performance-wise, the CLR 2 delivers an unparalleled 9.4db of omni-directional gain -- DOUBLE the EFFECTIVE RADIATED POWER of the TRANSMITTER.

3.4db Gain in Measured Field Strength Intensity
3.4db of omni-directional gain in measured field strength intensity is achieved through using maximum legal aperture (greatest possible signal capture area). By using maximum legal height for the radiator (19' 10"), the radiator is electrically extended to % wavelength. Full 9/16 wave length of horizontal radials provide a ground plane system. The % wavelength radiator working against the 9/16 wavelength ground plane system produces the lowest possible angle of radiation and directs the maximum amount of energy along the horizon for greatest possible range.

6-20db Gain in Improved Signal-to-Noise Ratio
6db gain in improved signal-to-noise ratio is accomplished with Hy-Gain's unique built-in static arrester. Prevents static build-up and greatly reduces atmospheric noises in the receiver. Reduction in static build-up results in gains in signal-to-noise ratio of 6 to 20db. Additionally, the static arrester minimizes lightning hazard to the antenna and your equipment.

New Solid State Matcher
New moistureproof Solid State Matcher is permanently weather protected. Recessed 50 ohm coax cable connector is imbedded in a moisture-safe housing to insure against electrical failure. SWR is less than 1.2:1.

YOUR CHOICE OF ONE FREE BONUS!!

- 50 ft. RG8u foam cable
- X5-12 CHANNEL SELECTOR
- LIGHTNING ARRESTER
- for coaxial cable

GROVE ELECTRONIC SUPPLY COMPANY (11)
**MODEL-115B**

$69.95

**Hy-Gain’s Fabulous Model 115B “Long John”**

*The Most Powerful Antenna Ever Built for Citizens Band*

- 12.7 db Forward Gain
- Multiples Your Power 10 Times
- Tremendous Range
- Rotates with Heavy-Duty TV Rotator

Base Station to Mobile or point-to-point, the Model 115B Long John will multiply your power 10 times... will give your CB transceiver the effective radiating power of a 50 watt rig. It’s by far the highest gain directional antenna system ever manufactured commercially for Citizens Band. The 115B develops up to 12.7 db forward gain. Front-to-Back ratio of 25 db and Front-to-Side ratio of 40 db to effectively eliminate unwanted signals from the back and sides. It may be installed either vertically or horizontally. Construction of heavy-wall aluminum, elements on the 115B are optimum spaced on the 2” OD boom to insure maximum theoretical gain. Insulators are molded of high impact cycloc plastic and all steel hardware is iridium treated to MIL specs for maximum weatherability. Th Long John features Hy-Gain’s exclusive Beta Mate and is factory pre-tuned for 50 ohm feedline. Th driven element is at DC ground for improved signal-to-noise ratio and lightning protection. It rotates easily with a heavy duty TV rotator and gives you the cleanest, clearest, most far-ranging signal on Citizens Band. Comes with all parts pre-drilled and clearly marked for fast, easy assembly. Model No. 115B $69.95 CB Net

**SPECIFICATIONS:**

**Electrical:**
- Forward Gain over Tuned Dipole: 12.7 db
- Front-to-Back Ratio: 25 db
- Front-to-Side Ratio: 40 db
- SWR (at resonance): 1.05
- Nominal Impedance: 50 ohm

**Mechanical:**
- Boom Length: 24 ft
- Longest Element: 18 ft
- Turning Radius—Vertical: 12 ft
- Horizontal: 15 ft
- Maximum Wind Survival: 80 mph
- Net Weight: 30 lb

**YOUR CHOICE OF ONE FREE BONUS!!**

- XS-12 CHANNEL SELECTOR
- 100 ft. RG8u foam cable
- SP-99 PAGING SPEAKER
- S.W.R. BRIDGE
- AND FIELD STRENGTH METER

**ELECTRONIC SUPPLY COMPANY**
COMMUNICATIONS ANTENNAS FOR CITIZENS

MODEL 113-BA

$31.50

SPECIFICATIONS:

Electrical:
- Forward Gain over Tuned Dipole: 9db
- Front-to-Back Ratio: 25db
- SWR (at resonance): 1.05:1
- Nominal impedance: 50 ohms

Mechanical:
- Boom Length: 12 ft.
- Longest Element: 18 ft.
- Turning Radius—Vertical: 4.5 ft.
- Horizontal: 9.2 ft.
- Maximum Wind Survival: 80 mph
- Net Weight: 15 lbs.

Redouble Power by Stacking
Get 3db Additional Gain

For 3db of additional gain... effectively redoubling power...Model 113BA's may be stacked vertically or horizontally making the effective radiated power of a 5-watt Citizens Band transmitter equivalent to approximately 80-watts input. Instructions are furnished with each Model 113BA for easy construction of a stacking harness using coaxial cable.

WHERE SPACE IS A FACTOR...
Choose Hy-Gain's Model 113BA 3-Element Beam

- 9db Forward Gain
- Multiplies Your Power 8 Times
- Rotates on Standard TV Rotator
- Vertical Turning Radius Only 4 1/2 Feet

Base Station to Mobile or point-to-point, the Model 113BA will multiply your power 8 times...will give your CB transceiver the effective radiating power of a 40-watt TR. The Model 113BA's works equally well in receive function delivering tremendous increased range. Front-to-Back Ratio of 25db and front-to-Side Ratio of 40db make it very effectively discriminate against unwanted signals from the rear and sides. Constructed of heavy-wall aluminum elements on the 113BA are strategically spaced on the 2" OD boom to insure maximum gain. Insulators are molded of high-impact, cycloal plastic and all metal hardware is iridite treated to MIL specs for maximum weatherability. The 113BA features Hy-Gain's exclusive Beta Match and is factory pre-tuned for 52-ohm feedline. The driven element is rigidly mounted at DC ground for improved signal-to-noise ratio and lightning protection. It rotates easily with a standard TV rotator and delivers the utmost in outstanding performance attainable from a beam of its size. Comes with all parts pre-drilled and clearly marked for fast, easy assembly.

GROVE ELECTRONIC SUPPLY COMPANY
Model PH-1

Phase 'Em For Greater Range

$14.95

Hy-Gain's Standard Split Ball Body
Mount Model RDYS
Some as Model BDY above except furnished in beautiful natural finish. Net weight, 1 lb. $3.03

Hy-Gain's Deluxe Split Ball Body Mount
Model BDY
Heavily chrome-plated split-ball type body mount with molded cymbal base and rubber body washer. Easily installed from top side of any single or double wall body panel. Accepts standard ¾" x 24. thread fittings. Designed for use with whip or spring and whip. Net weight, 1½ lb. $4.77

Hy-Gain's Deluxe Split Ball Body Mount with Heavy Gauge Back-Up Plate Model BDYP
Heavily chrome-plated split-ball type body mount with molded cymbal base, rubber body washer and heavy gauge metal back-up plate. Extra-sturdy installation requires no separate attachable part. Accepts standard ¾" x 24 thread fittings. Designed for use with whip or spring and whip. Net weight, 2 lb. $4.77

Hy-Gain's Standard Split Ball Body Mount with Heavy Gauge Back-Up Plate Model BDYP
Same as Model BDYP except furnished in beautiful natural finish. Net weight, 1½ lb. $3.03

Hy-Gain Whip Gutter Clip
Chrome-plated gutter clip securely holds Whip for low ground. Mounts on gutter of car with single screw. Net weight, 1 lb. $0.75

Model GC $0.75

Get Up To 4.5db ADDITIONAL GAIN with
Hy-Gain's revolutionary CO-PHASER

With Hy-Gain's revolutionary Co-Phaser, phased collinear antennas will virtually double your effective radiating power in a multi-directional pattern. This handsome little gray box of magic produces additional gain as it should be produced...by combining the natural optimum performance characteristics of two phased collinear antennas and discriminatingly directing their power to where you want it. Just a flip of the compass rose calibrated dial on the Co-Phaser transfers you from 3.86db additional broadband gain to 4.5db additional "end-fire" gain off of either end of your phased array. The Co-Phaser also cuts out co-channel interference...sheds unwanted signals and gives you a stronger and clearer signal just exactly where you want it. It requires no external power...has no tubes or circuitry to introduce additional noise or interference...eliminates the need of expensive rotators. It's very easy to install. Overall dimensions...4½ x 8½ inches oval, 5 inches deep. Net weight, 1½ lb. Model No. PH-1 $14.95 CB Net

Plus Choice Of One Bonus With PH-1

Super-Magnetic Microphone Holder
MH-3

Bonus LM40 Klear-Pix
eliminates CB interference

Grove Electronic Supply Company (16)
The Hallmark 1250 CB Transceiver is a compact unit featuring rugged, hard-wire construction. Small enough for any vehicle, the 1250 is a complete, 12-channel, crystal-controlled 5-watt unit with many design features usually found only in 15-watt units. A silicon rectifier full-wave bridge easily provides the power for maximum output and modulation. A weatherproof front speaker gives audio output more than 4.5 times the conventional speaker. A high gain RF amplifier means low receiver noise. Other design features include electronic switching (no relay noise), ultrasonic squelch and built-in "S" meter. Smart contemporary design with fluted aluminum face plate and grille. Case is heavy gauge steel with black baked enamel finish. Four sturdy snips allow instant accessibility of all crystals or routine maintenance.

Model 1150 Suggested List Price $149.50

SALE
PLUS FREE BONUS!!

SALE $119.95

The sensational new Hallmark 1250

GROVE'S FANTASTIC SALE PRICE

110 VOLT

SALE

65-120

& 12 VOLT

GROVE ELECTRONIC SUPPLY COMPANY
**Midland Model 13-110**

What makes the Midland Model 13-110 the best value on the market today!

- **Two Channel Operation:** The 13-110 is supplied with selected Channel 7 (27.035 MC) crystals installed. Crystals for the second channel are optional extra and may be added at any time for maximum versatility. A convenient channel selector switch allows quick selection of the operating channel. Changing channels for private communication or switching to a quieter channel is easily accomplished with the 13-110. Plug-in crystals are used and the frequency of either channel may be changed by changing crystals.

- **Power:** The input power to the final amplifier falls within the 100 milliwatt classification of the Federal Communications Commission (F.C.C.), and is modulated 100%. A high 80% efficiency in converting the input power to actual radiated power is the secret of the 2 Ch. 13-110 to transmit a stronger signal.

- **Highest Intelligence:** In the transmit position, the speaker becomes the microphone. The audio in the transmitter is restricted to the voice frequencies resulting in high intelligibility and lower battery consumption. This feature is particularly noticeable in noisy locations or in poor reception areas.

- **Noise Limiter:** Ignition noise, electrical interferences, etc., are reduced to a minimum while voice frequencies are unaffected. The 2 Ch. 13-110 can receive and transmit intelligence despite interference.

- **Class B Modulation:** The power drawn from the batteries is directly proportional to the modulation applied to the final amplifier. Maximum current is drawn only on voice peaks. This results in extended battery life.

- **Superheterodyne Receiver:** All transistors, plus a sensitive thermometer bias stabilizer, and a dual diode used in the receive position are specially selected. High sensitivity is achieved and the receiver is sharp enough to reject most unwanted noise.

- **Rugged Design:** A dark grey, wrinkle-finished aluminum case combined with a highly polished die cast speaker grill makes this unit both attractive and durable. A heavy duty push-to-talk switch, durable antenna, and a hand-soldered circuit board requires an absolute minimum of service.

**Specifications:**

1. Frequency: 27.035 MC (Channel 7), Second Channel Optional
2. Receiver Circuit: Crystal-controlled superheterodyne receiver.
3. Transmitter Circuit: Crystal-controlled oscillator.
4. Transistor Components: 10 transistors, plus 1 thermometer bias stabilizer, plus 1 dual diode.
5. Antenna Length: 49", 13 sections.
8. Weight: 16 ounces.
9. Power Source: 6 inexpensive penlite cells (1.5 Volts x 6), NEDA 815, Eveready 915, Burgess Z, Midland 20-815.
10. Range: 1 to 7 miles (depends upon terrain, obstacles, etc.).

The 2 Ch. 13-110 serves many uses:
- Construction: Factories, Homes, Hospitals, Farming, Ranching, Stockyards
- Rail-Yards, Sporting Events, Boating
- Hunting, Fishing, Camping, Police
- Firemen, Civil Defense, Public Affairs
- Surveying, Exploration, and many others.

**NOW! You get 2 channels in this rugged, top efficiency walkie talkie.**

- 10 transistors plus 1 thermometer bias stabilizer
- Plus 1 dual diode plus 2 crystals
- No license required
- Limiters plus long range communication
- Automatic noise limiter
- Sale only $29.95

This Walkie-Talkie is a rugged and reliable unit designed to meet the toughest demands. It is pocket size and powerful. No warm up time is required. Just turn on the switch and you have constant communication at distances up to 7 miles, depending upon the terrain and obstacles. It's your option to use either the private listening earphone supplied with each unit, or the built-in loudspeaker.

Efficient 13-section, 49" whip antenna telescopes out of sight when not in use. Push-pull audio amplifier delivers excellent sound. Extra sensitive crystal controlled superheterodyne receiver combined with 100% modulation in the transmitter provide an unbeatabled combination. No license of any kind is required.

A handomely styled durable metal case houses and protects the precision engineered chassis. Both the receiver and transmitter are controlled by plug-in crystals. Ten carefully selected transistors are used to provide the listening quality and transmitting power needed. The conveniently located push-to-talk switch allows fast conversion from receiver to transmitter, and a carefully designed noise limiter switch is provided for reducing ignition noise and high line interference. Unit is powered by 8 easy-to-get penlite batteries.

Comes complete with Channel 7 crystals, genuine leather carrying case, shoulder strap, earphone pouch, earphone and instruction manual. The metal case measures only 7" high x 2-1/8" wide x 1-3/4" deep. Weight 16 ounces.

**Model 13-110**

**Grove Electronic Supply Company (25)**
SPECIFICATIONS

1. Frequency: On F1 (frequency 1) plug-in crystals are on Channel 7 (27.035 mc). On F2 (frequency 2) the channel is left open.
2. Receiver Circuit: Crystal controlled, superhetentype receiver with tuned RF stages, four IF stages, variable squelch, AVC and automatic noise limiter.
3. Transmission Circuit: Crystal controlled, full 1-watt final RF input.
4. Transistor Complement: 13 transistors plus 1 diode plus 1 transistor plus 1 capacitor.
7. Controls: Conveniently located volume control and on-off switch. Manually operated squelch control and two position channel selector slide switch are provided.
8. AC Adapter: Unit can be operated on 110-volt AC with the use of an AC adapter (optional accessory Model 18-140).
9. Power Source: 8 penlite cells (1.5 Volts each) Eveready 915, NEDA 215 or Midland 20-815. A genuine leather power pack, which will accommodate 8 "D" flashlight cells, can be purchased as an optional accessory Model 18-127.
10. Special Features: Earphone Jack, AC jack, external microphone jack and external antenna jack.
11. Range: Up to 15 miles (depends upon terrain, obstacles, climate conditions, etc.).
12. Size: Only 8.75" H x 4" W x 2.25" D.
13. Weight: 36 ounces.

Compact size...rugged design plus features found only on large base station and mobile transceivers

MIDLAND

FULL 1 WATT TRANSCEIVER

Your MIDLAND Model 13-133 1-watt transceiver is a fine piece of high-frequency electronic equipment using tuned RF and four IF stages for greater sensitivity and range. Incorporated in this unit is push-pull audio output for better voice response and tone. Automatic volume control (AVC) eliminates fading and bleeding. A variable squelch reduces background noise and keeps the speaker silent between calls. An automatic noise limiter reduces ignition and other undesirable noises. This unit has a full 1-watt RF input and a precision engineered conversion system to assure you of maximum radiated output power.

The operation range between two Model 13-133 walkie-talkies can be up to 15 miles depending upon the terrain, obstacles, climatic conditions, etc. By using a Model 13-133 transceiver with a base station or mobile unit this range can be greatly increased.

This new MIDLAND transceiver will operate on any of the 22 Citizens Band channels. It is provided with 2 sets of crystal sockets and a conveniently located channel selector switch. One set of plug-in crystals on Channel 7 (27.035 mc) is supplied with each unit. Additional crystals for other channels can be easily obtained and the frequency can be changed to another channel by changing crystals.

Power source: 8 penlite batteries, or 8 "D" cell batteries, or 110-volts.

Accessories:
- 18-135 Desk stand.
- 18-137 Heavy-duty, all-leather power pack which is designed to use 8 "D" cell batteries.
- 18-138 External microphone.
- 18-139 Telescoping base station antenna with hardware.
- 18-140 110-volt AC adapter.

OPTIONAL ACCESSORIES

$19.95

$14.95

$4.88

$14.97

$4.49

$7.77

GROVE ELECTRONIC SUPPLY COMPANY (230)
**MODEL BR-21**

**LINEAR AMPLIFIER**

- FCC Type Accepted
- Parts: 10-31-18
- Grounded Grid—Class B operation
- Forced air cooling system
- Increased range for low power stations
- Operates with 1-10 watts R.F. drive power (1-30 watts Amateur)
- Automatic Standby/Transmit keying
- Either AM or FM transmitters can be used
- Covers 25-50 mc Business Band, 10 or 6 meter band
- Small, compact, all aluminum construction
- Driver/Transmitter may be normally operated (Electronic switching)

**BR-21 LINEAR AMPLIFIER**

**SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Frequency</td>
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<td>Frequency</td>
<td>25-50 mc (Business Radio)</td>
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<td>Emission</td>
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<td>Duty</td>
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<td>Weight</td>
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<td>Size</td>
<td>4 1/4W x 8 1/4H x 10 1/4D</td>
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<td>1-12AT7, 4-6U6</td>
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<tr>
<td>Rectifiers</td>
<td>4 Silicon, 600 P.I.V.</td>
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**PLUS YOUR CHOICE OF BONUS FREE!!**

- **BANDSWITCHING FIELD STRENGTH METER**
  - Factory wired
  - Has a broad tuning range that covers from 1.6 to 150 mc for all bands or follow-up.
  - Band A to 6.5 mc; Band B 6.5 to 24 mc; Band C 24 to 50 mc; Band D 50 to 150 mc.
  - Sensitive field strength meter for frequency check, decay check, and signal level.
  - Price: $40

- **Philmore VHF/SHF TRANSISTORIZED WIRELESS INTERCOM**
  - Price: $100

- **S.W.R. BRIDGE AND FIELD STRENGTH METER**
  - TC2
  - Price: $60

- **PAGING SPEAKER**
  - SP-99
  - Price: $99

**GROVE ELECTRONIC SUPPLY COMPANY**

(30)
Heavy Duty Antenna Rotor Systems

ROTORS FOR TV, COLOR TV, FM & FM-STereo

Previously considered necessary only for deep fringe area reception, antenna rotors are now required in nearly every location due to the more demanding performance requirements of color TV and FM stereo broadcasting. The Cornell-Dubilier antenna rotors are the only heavy duty TV-FM antenna rotors available. They are designed to support the heaviest antennas and provide reliable performance under the most severe conditions. All CDE TV-FM antenna rotors are supplied with the heavy duty weatherproof bell casting motor unit illustrated. This unit provides four to five times the turning and braking torque of competitive models, features a 6" diameter built-in thrust bearing, and utilizes heavier gears and construction throughout. Coupled with the wide selection of control boxes offered, the CDE rotor is clearly the outstanding buy in antenna rotors.

MANUAL COMPASS PATTERN MODEL

Model TR-2C

$26.41 ea.

PLUS FREE BONUS!!
100 feet of 4-COND. ROTOR CABLE!

MANUAL METER MODEL

Model TR-4A

$26.41 ea.

PLUS FREE BONUS!!
100 feet of 4-COND. ROTOR CABLE!

AUTOMATIC MODEL

Model AR-22

$31.31 ea.

PLUS FREE BONUS!!
100 feet of 4-COND. ROTOR CABLE!

NOTE: TA-6 THRUST BEARING for TR11A rotors- $2.95 ea.

GROVE ELECTRONIC SUPPLY COMPANY (36)
BASE STATION COMMUNICATIONS

MODEL 454X
Outstanding base station microphone. Single sideband (Limited to voice) frequency response of 300-3000 C.P.S. Attractive telephone black satin finish on all metal alloy case. May be wired for VOX. Comes wired for push to talk. Has extra lock-on switch for continuous transmission. Complete with coiled cord (Three conductor—one shielded). Output level is —46 db. List Price $20.50

MODEL J-454X
Same as Model 454X except with an extra set of contacts for electronic switching. List Price $29.50

MODEL 454C
Same as Model 454X except with heat and humidity proof ceramic element. Output level —52 db. List Price $26.50

MODEL 254X
The most popular base station microphone in use today. The number one favorite of CB's. Excellent for inexpensive P.A. systems as well. It features push to talk from touch bar or locking on-off lever switch. Comes wired for relay operation. Deluxe light grey hammertone finish. Extra high output. Level of —48 db for increased signal strength. The response is 100-8000 c.p.s. Cable is 7' three conductor (shielded). Size is 7/4" in height x 5/8" in depth. Shipping weight: 3 lbs. List Price $32.50

MODEL 254C
Same as 254X except with famous 21C ceramic interior. Output level of —64 db. List Price $32.50

MODEL J-254C
Same as Model J-254X except with Ceramic interior. Output level is —54 db. List Price $26.50

MODEL J-254X
A special model for Electronic switching. The "J" Model has an extra set of contacts which will allow you to wire into any CB rig manufactured that has a high impedance input. Response is 80-7000 C.P.S.; output level is —48 db. List Price $26.50

MODEL 254R
A CB base station microphone with carbon element for Kaar, Bendix Pacific, RCA marine sets, Dulmont and many others. Impedance: 40 ohms nominal DC resistance. Output level: —38 db. Cable is 7 foot, 4 conductor (unshielded). Operates by touch bar on-off switch and Lever-Lock on-off switch. List Price $1.70

MODEL 254D
Now 600 ohm base station model. Dynamic interior for smooth response of 300 to 6000 C.P.S.; output level is —66 db. (—50 db. RE Hi impedance). Comes with 7' cable terminated in 91-MPAM plug. List Price $23.50

PLUS YOUR CHOICE OF BONUS FREE!!
(choose one below)

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<tr>
<th>BONUS LM40</th>
<th>BONUS C44</th>
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<td>KLEAR-PIX</td>
<td>SUPER-MAGNETIC</td>
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<td>eliminates CB interference</td>
<td>MICROPHONE HOLDER</td>
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GROVE ELECTRONIC SUPPLY COMPANY (52)
MOBILE COMMUNICATIONS

MODEL 333 (NOISE CANCELLING)

New, classic mobile microphone for those who insist on the very best. 200-5,000 c.p.s. voice frequency response. Noise cancelling. All the top features "CLS" and "Hams" insist upon. Top quality built by "Kohoh, Koral, etc." Ocular filters come 4 to 1. Wired for Raceline output ceramic ceramic for PLUS modulation and protection against fuel and humidity. If you want the very best, ask for the new Turner 333. Shipping weight: 1 lb.

List Price: $21.50

MODEL 350-C

Most used mobile equipment. This low-cost ceramic microphone with on/off switch is familiar to most mobile radio operators. More 350's are in use than any other microphone. New exclusive speaker (carbon) with one year service. Rugged ceramic design allows you to use the 350 in any climate. Complete with handle and standard dash bracket for easy mounting. Equipped with 11" retractable, fiber-etched, wired cord. Ideal for mobiles, trucks, buses, or any other use. Mobile and Paging rated for relay operation. Response: 50-18,000 c.p.s. Output level: +4 db. Complete installation instructions included. Shipping weight: 1 lb.

List Price: $15.50

MODEL SR-90

The Model SR-90 is available in two popular versions—the "F" (pressure operated) dynamit and the "R" for carbon. Both feature the 304 stainless steel face plate alloy case with the Turner exclusive front hanger mount. Both come in same complete units.

Dynamic models are available in two impedances, 6 or 300 ohm. Relay monitoring is standard. Three condenser (one switched) 11" retractable feature covers the entire amateur radio frequency range and a condenser (two switches) on 300 ohm units. Output is 400-0 c.p.s. at 6 ohm impedance. Response is 50-18,000 c.p.s.

Model SR-90F is equipped with a relay. Quality telephones are made in output and high stability as well. Same general appearance and features as Model SR-90R. Specifications are: 40 db output level response 200-6,000 c.p.s. Choose the Model SR-90R wherever maximum output with a minimum of distortion is specified—transceivers, phone, etc. Shipping weight: 2 lbs.

List Price: $47.50

MODEL 355-C

High style transistored mobile microphone with gooseneck honeycomb. The easiest, most convenient switch function on today’s market. More cost-effective to build-in than ceramic microphones to use. The .50 features an output level of +4 db. It's extra hot for a "high gain signal." Response 50-18,000 c.p.s. Complete installation instructions included. Shipping weight: 1 lb.

List Price: $14.70

MODEL 358-D

Ceramic mobile microphone. 400 ohm impedance, designed for use with transistorized CIR transistors. Standard 350 type plug and external switch. Pneumatic seal, seal design. Output level: +4 db. (-45 db re: 6 ohm impedance; frequency response 200 to 6,000 c.p.s). Shipping weight: 1 lb.

List Price: $24.99

44 SERIES

IN Prozent A NEW PUBLIC ADDRESS SERIES... all the quality microphones from Turner. Exclusively designed to give you the best in multi-system printed Dynamic, Crystal and Ceramic microphones.

MODEL 44D - DYNAMIC

- 100 input Dynamic Element
- Available in 6 or 4 input impedance

MODEL 44X - CRYSTAL

Same as Model 44D except with hi output crystal interior for extra gain and sensitivity. Response is 50-18,000 c.p.s. Output level: +4 db.

List Price: $26.47

MODEL 44C - CERAMIC

Same as Model 44D except with Turner's famed ceramic interior. Response is 50-18,000 c.p.s. Output level: +4 db.

List Price: $25.67

GROVE ELECTRONIC SUPPLY COMPANY
CRYSTAL, DYNAMIC, CONTACT & GUITAR MICROPHONES

DYNAMIC MICROPHONE

STUDIO TYPE

Omni-directional studio type crystal microphone, suitable for conference groups, PA, tape recordings, etc. Dual phased crystal units, vertically mounted, mounting thread 5/8"-27. Supplied with 4 feet plastic covered microphone cable.

Sensitivity: -52 db
Impedance: 500 Ohms
Frequency Response: 60 to 8000 CPs
Finish: Chrome and black
Dimensions: Width 3" x Height 7"
Weight: 11 ounces

No. M18 Net Price: $5.95

DYNAMIC MICROPHONE WITH STAND

With Swivel Stand

Desk type, omni-directional. Suitable for tape recording, voice, instrumentalists, and broadcasting, public address etc. Supplied with swivel base desk stand, and 8 foot plastic covered microphone cable. Base has rubber ring to protect table surfaces.

Sensitivity: -70 db
Impedance: 50 Ohms
Frequency Response: 60 to 12000 CPs
Finish: Blue or metallic lacquer with chrome trim
Dimensions: Width 2" tapered x Height including stand 9"
Weight of Microphone: 1 lb. 3 ounces
Weight of Stand: 2 lbs.

No. DM7 Net Price: $16.65

DYNAMIC MICROPHONE

WITH SWIVEL STAND

Microphone only.

Sensitivity: -70 db
Impedance: 50 Ohms
Frequency Response: 100 to 12000 CPs
Finish: Chrome and black
Dimensions: Width 1" x Height 7"
Weight of Microphone: 10 ounces
Weight of Stand: 1 lb.

No. DM15 Net Price: $12.95

DYNAMIC MICROPHONE

WITH STAND

With Swivel Stand

Sensitivity: -85 db (1000 cp's at 3 Mv)
Frequency Response: 100 to 12000 CPs
Finish: Chrome and black
Dimensions: Width 1-3/8" Dia. x 3 1/2" long

No. DF-1 Net Price: $8.25 each

MINIATURE DYNAMIC MICROPHONE

Suitable for tape recording, P.A. applications and Communications equipment. Supplied with spring type desk stand, and 6 foot Gray plastic covered shielded cable.

Frequency Response: 60 to 15,000 CPs
Sensitivity: -40 db
Finish: Two-tone gray plastic with gold grille.
Impedance: 2K Ohms
Dimensions: 1-3/8" Diameter x 1-5/8" long
Weight: 3-1/2 oz.

No. DM175 Net Price: $4.60

CRYSTAL MICROPHONE

Omni-directional studio type crystal microphone, suitable for conference groups, PA, tape recordings, etc. Dual phased crystal units, vertically mounted, mounting thread 5/8"-27. Supplied with 4 feet plastic covered microphone cable.

Sensitivity: -52 db
Impedance: 500 Ohms
Frequency Response: 60 to 8000 CPs
Finish: Chrome and black
Dimensions: Width 3" x Height 7"
Weight: 11 ounces

No. M18 Net Price: $5.95

DYNAMIC MICROPHONE

STUDIO TYPE

Clamshell directional. Suitable for tape recording orchestras, vocal, conference groups and wherever wide range sensitive pickup is required. Mounting thread 5/8"-27. Supplied with 4 feet plastic covered microphone cable.

Sensitivity: -71 db
Impedance: 50K Ohms
Frequency Response: 70-9000 CPs
Finish: Chrome and Metalized Grey
Weight: 11 ounces

No. DM17 Net Price: $13.00

DYNAMIC MICROPHONE WITH STAND

Wand type, omni-directional. Suitable for tape recording, voice, instrumentalists, and broadcasting, public address etc. Built-in on-off slide switch. Supplied with weighted desk stand, chrome finished swivel mike holder, and 4 foot removable plastic covered microphone cable.

Sensitivity: -70 db
Impedance: 50K Ohms
Frequency Response: 70 to 9000 CPs
Finish: Chrome and black
Dimensions: Width 1 1/2" x Height 7/8"
Weight of Microphone: 10 ounces
Weight of Stand: 1 lb.

No. DM15 Net Price: $12.95

GUITAR MICROPHONE

Professional type, complete with separate volume and tone controls. Mounts easily under strings without special attachments. Metal parts are chrome plated. Supplied with 8 foot cable and standard phone plug, for connecting to amplifier. High Impedance.

No. 1710 Net Price: $7.40

CONTACT MICROPHONE

A high impedance crystal contact microphone, complete with 8 feet of shielded cable and clamp bar. Ideal for amplification of guitars, banjos and other stringed instruments.

No. 1709 Net Price: $1.45 each

GROVE ELECTRONIC SUPPLY COMPANY (86)
The all new EICO "Sentinel-23" (Model 779) Transceiver is truly extraordinary -- from features to price.

- Dual Transistor F8 -- 117 VAC, 12 VDC
- Full 23 CB Channel Frequency Synthesizer
- 3.5 Watt P. A. System
- Dual conversion superhet receiver
- All crystals supplied for crystal-controlled transmit and receive on all 23 CB channels
- Dual power supply -- 117 VAC and 12 VDC transistorized
- 23-Channel Frequency Synthesizing Circuit

EICO "Sentinel 23" Model 779 23-Channel Crystal-Controlled Dual-Conversion 5-Watt CB Transceiver

The EICO 779 "Sentinel 23" is a full 5-watt input (input limit) CB Transceiver. It incorporates a 23-crystal frequency synthesizer for crystal-controlled transmit and receive on all 23 CB channels (22 additional crystals are included). A single control selects transmit and receive channels simultaneously with channel numbers 1 through 23 appearing in an illuminated window.

The receiver is a dual conversion superhetrone with one 6AS7 and three 455ka IF's to achieve the very broad passband. Sensitivity is rated at 0.25 microvolts for 10% signal-to-noise ratio. Excellent adjacent channel rejection is achieved without excessive narrowing of the desired channel bandwidth since the fifth down points are 250 from the carrier. A bandwidth control on the front panel permits 23% adjustment for selecting a transmitting slightly off frequency, primary image rejection is better than 60 db. The illuminated dual-function meter serves as an "S" meter in receive.

The wide dynamic range of the AGC circuit prevents overloading on strong local signals. Both an automatic imput noise limiter and adjustable squelch are provided. A standby switch puts the internal squelch circuit while drawing only the required filament current. In addition to a built-in 4-inch loudspeaker, headphones (or an external speaker) may be connected to the unit through a front-panel phone jack which automatically advances the built-in loudspeaker when a phone plug is inserted.

The efficient 5-watt input transmitter provides more than 3 watts output. High modulation level, up to 100%, is obtained without excessive distortion by the 3.5 watt modulator.

The model 779 is complete with 50-ohm match and factory pre-tuned complete with a 8X power gain!! The "hugain" indication is provided by a front-panel neon lamp. The meter serves as a relative RF power output meter in transmit. A noise cancelling, ceramic element push-to-talk switch with a coiled cord is included.

A variable "pi" network in the transmitter output permits matching adjustment for antenna systems from 30 to 100 ohms. An adjustable TV filter permits elimination of harmonics that might otherwise interfere with television reception at the transmitter output.

A PA/CB switch permits the receiver's audio amplifier to serve as a 3.5 watt PA (Public Address) amplifier with an external speaker or bullhorn plugged into a rear receptacle. In the PA position, PA voice is obtained by depressing the mike PTT button, with mike button up, incoming signals on the selected channel can be heard over the PA speaker. In base station applications, this permits incoming messages to be heard at remote points in the base station area; in mobile applications it permits incoming messages to be heard while the operator is out of the vehicle.

The EICO 'Sentinel 23' employs a transistor switching power supply and can be operated either directly from 117 volts AC or efficiently from 12 volts DC in negative ground vehicles, only (most domestic) makes since 1963). Individual power cords for 117 volts AC and 12 volts DC operation are included.

Brackets are provided for convenient mobile mounting. The steel case is deeply lined in multi-foil vinyl for maximum durability; the panel is heavy-gage extruded aluminum-brushed polished and epoxy coated. Size (HWD) is 4½ x 12½ x 7½ inches and the weight (net) is 14 pounds.
Now, for the first time, a complete line of low-cost CB antennas designed to deliver "top drawer" electrical performance...Hy-Gain’s ECONO-LINE. New ECONO-LINE antennas are constructed of quality materials and embrace many of the unique features found only in Hy-Gain’s world famous, extra-rugged Standard Line CB antennas. Although new ECONO-LINE antennas are constructed of lighter weight materials designed to meet the day-to-day environments that exist almost anywhere in the United States, Hy-Gain superior electrical performance is uncompromised in all models. For the CB'er looking for a value-priced antenna—base station or mobile—specify Hy-Gain ECONO-LINE...the only high performance budget priced antenna on the market today!

**ECONO-LINE**

**Model CB3**
3-Element Beam
- Delivers 8db Forward Gain
- Taper-Swaged Seamless Aluminum Construction
- Rotates with Standard TV Rotator
- Iridite Treated Hardware

The Model CB3 is an outstanding performer...delivers 8db forward gain, 20db average F/B ratio, and 50db F/B ratio. Feeds with 82 ohm coax. Full sized ¼ wavelength taper-swaged, seamless aluminum elements on an 8’ 1¼” OD seamless aluminum boom. All steel hardware multi-color iridite treated for maximum weatherability. Rotates with standard TV rotator. Electrical performance equivalent to better antennas selling for $31.00 and more.

Model CB3 $19.95

- Designed for Simple Installation
- Built to Withstand 80 MPH Winds

**ECONO-LINE**

**Model CBP**
All Purpose 1/4 Wave Ground Plane
- Beta Matched for Optimum Energy Transfer
- Taper-Swaged Seamless Aluminum Construction
- Iridite Treated Hardware

Econo-Line Model CBP is a ¼ wavelength unity gain ground plane constructed of heavy gauge, taper-swaged seamless aluminum tubing. Entire antenna is at DC ground for low noise level and lightning protection. Hy-Gain’s unique beta match provides maximum transfer of energy to the antenna from 82 ohm coaxial feedline. Multi-color, iridite treated hardware. Electrical performance equivalent to other antennas selling for $6.95 and more.

Model CBP $9.95

- Uncompromised High Performance
- Heavy Gauge Construction

**ECONO-LINE**

**Model CBV**
Omni-Directional Gain Antenna
- Delivers up to 66db Omni-Directional Gain
- Entire Antenna at DC Ground for Low Noise Level
- Taper-Swaged Seamless Aluminum Construction
- Iridite Treated Hardware

The Model CBV is an endless ¼ wavelength antenna that delivers up to 66db of omni-directional gain. The entire unit is at DC ground to provide lowest possible noise level and maximum lightning protection. 16” radiators and 14” radials are of heavy gauge taper-swaged, seamless aluminum tubing. All steel hardware is iridite treated for maximum weatherability. Feeds with 62 ohm coax. Electrical performance equivalent to other antennas selling for $29.95 and more.

Model CBV $19.95

**GROVE ELECTRONIC SUPPLY COMPANY (118)**