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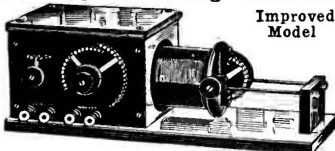
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Large Stocks—Prompt Shipments

We have large stocks and can make prompt shipment upon the receipt of your order. Keep this issue of Radio News and order direct from these pages. Prices are guaranteed against advance until Feb. 1st, 1922. Write your order on any plain piece of paper. We guarantee safe delivery.

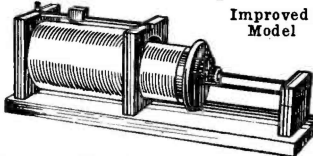
Montgomery Ward & Company was the first institution to adopt the guarantee of Satisfaction or Your Money Back. This guarantee applies to all radio goods shown on this and the following pages. Order any of the apparatus on these pages and give it a 5 day examination. If at the end of 5 days it is not what you expected it to be, return it to us and we will promptly return your money together with the transportation charges you have paid.

Navy Type Receiving Transformer



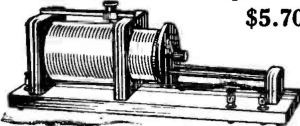
63R600—A very selective instrument for the more advanced stations. Primary inductance is controlled in steps by units and tens switches. Secondary has 12-point control. Has wave range up to 4,000 meters. Formica panels. Metal parts of brass polished nickel finish. Single silk covered windings. Mahogany finished wood work. Base is 18 inches long, 6 1/2 inches wide. Shipping weight, 25 lbs. **\$17.50**

Arlington Type Receiving Transformer



63R601—An efficient high-grade, long wave tuner. Has same winding as our Navy type. Will receive all government time stations such as Arlington and Key West. Works up to 4,000 meters. Primary controlled by slider. Secondary inductance varied by a 12-point switch mounted on Formica, silk covered wire windings. Brass metal parts polished and lacquered. Mahogany finished wood work. Base, 18 inches long, 6 inches wide. Shipping weight, 14 lbs. **\$17.50**

Junior Loose Coupler



63R5103—A fine instrument for 200 to 600 meter work. Primary controlled with slider, secondary by 5 point switch. Metal parts brass, polished and lacquered. Woodwork mahogany finish. Base 12x3 1/2 in. Ship. wt. 6 pounds. Price **\$5.70**

Two Slide Tuning Coil



63R5104—Machine spaced enameled copper wire winding. Non-shrinkable tube. Control is by means of two smooth working sliders. Mahogany finished end pieces. Range up to 1,000 meters on average antenna. Length, 8 1/2 in. Ship. wt. 4 pounds. Price **\$3.45**

Loading Coil

63R5105—Essentially the same as two slider tuning coil, but has only one slider. Will add about 300M range to any set. Shipping weight, 3 lbs. **\$3.20**

Universal Detector

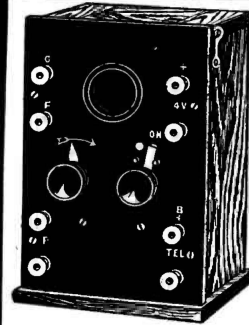
63R5304—A detector of correct construction. Permanent adjustment. Galena, silicon and other minerals can be used. Moulded base and adjustment knob. Metal parts of brass, polished nickel finish. Tested piece of silicon included. Base size, 2 1/2 x 3 1/2 in. Ship. weight, 1 lb. Price **\$1.55**

Murdock Detector Stand

63R5302—A good low priced detector stand. Will do very satisfactory work. Moulded black composition base. Adjustable cup and contact. Nickel plated binding posts. No crystals included. Size, 2 1/2 x 1 1/2 x 2 in. Shipping weight, 4 oz. **65c**

Mica Grid Condenser

For use in grid circuit of vacuum tube. Cap. .0005 M.F. Weight, 8 and 2 oz. **63R5330**—Mounted in mahogany base. Price **65c**
63R5331—Unmounted. Price **33c**



Vacuum Tube Control Detector Cabinet

An efficiently arranged fine looking detector cabinet. The best value and the highest grade instrument we have found. Standard V.T. base mounted on back of panel. V.T. may be observed through window. Filament control rheostat. Grid condenser. Nickel plated binding posts with marked connections. Fine quality cabinet, weathered oak finish, hinged at top so that interior is easily accessible. Bakelite Panel size 7 1/2 x 5 1/4 in. Shipping weight, 8 pounds. **\$11.65**

Vacuum Tube Amplifier Cabinet

Arranged to work in conjunction with any V.T. detector cabinet. Being of the same size and construction as our special detector cabinet the two make a desirable combination. Standard V.T. base mounted on back of panel. V.T. may be observed through window. Filament control rheostat. Improved amplification transformer. Nickel plated binding posts with marked connections. Fine quality cabinet, weathered oak finish, hinged at top so that interior is easily accessible. Bakelite Panel size 7 1/2 x 5 1/4 in. Ship. wt., 7 lbs. **\$15.95**

Radiotron Vacuum Tube Detector

63R5194—This is a "soft" tube especially suited for detector use and is also an excellent audio frequency amplifier. It produces excellent results in regenerative circuits. Has the familiar hissing point and low B battery potential requirements. Standard four-prong mounting. Shipping weight, 1 lb. **\$4.65**

63R5620—4000 ohm potentiometer graph-ite. Often used with soft vacuum tubes. Price **69c**

Improved V. T. Socket

63R5343—Improved long flat spring contacts insure positive contact on any standard tube base prongs. Glossy black composition base. Nickered tube. Marked screw connections. May be used and wired in any position. Shipping weight, 8 ounces. **95c**

Grid Leak

63R5341—Pencil mark type variable high resistance. When shunted across, stopping condenser keeps potential of grid of rotary plates at zero. Is permanent and most efficient results are obtained. Ready to mount on panel. Ship. wt., 3 oz. Price **56c**

Vacuum Tube Control Panel

63R5108—A compact, handy V.T. panel. Standard socket, rheostat, grid condenser, grid leak and binding posts all mounted on moulded bakelite panel. Metal parts polished nickel finish. A high grade, inexpensive instrument that will do as good work as the highest price cabinet. Base size, 3 1/2 x 5 in. Shipping weight, 2 1/2 lbs. **\$5.65**

Weatherproof Detector

63R5303—Very rugged. Perfect easy adjustment. Phosphor bronze contact spring can be set and locked in any position. In Wood's metal is mounted inside dust and moisture proof enclosed glass cylinder. Formica base, 2x2x 3/4 in. Ship. wt. 1 lb. Price **\$2.45**

Standard Galena Detector

63R5305—A popular detector. Tested piece of galena is mounted in cup which can be rotated. Crystal contact of phosphor bronze wire coiled and pointed and soldered on flat spring. Very fine adjustment obtainable with screw. Moulded base and adjustment knob. **\$1.43**
Base, size 3x3 in. Ship. wt., 1 1/4 lbs. Price **\$1.43**

Detector Crystals

Genuine Arlington Tested Minerals. Absolutely the best crystals that can be purchased for any price. All are thoroughly tested and guaranteed. Extremely sensitive. Packed separately in sealed boxes. Shipping weight about 3 ounces.
63R5320—Supersensitive Galena. Per crystal **22c**
63R5322—Supersensitive Silicon. Per crystal **22c**
63R5324—"Radioctoe." Per crystal **18c**

Radiotron Vacuum Tube Amplifier Oscillator

63R5192—A high vacuum amplifier and detector. Requires no critical adjustment. Designed for amplification and undamped wave reception by the regenerative method. May be used singly for receiving continuous waves or in cascade as a two or more step amplifier. Ship. weight, 1 lb. Price **\$6.25**

Socket for Vacuum Tube

63R5342—Socket is mounted on bakelite sheet. Four binding posts for connections. Screw holes for flat mounting, screws in side of base for panel mounting, permitting either upright or vertical position of tube. Shipping weight, 8 ounces. **\$1.35**

Variable Condenser for Panel Mounting

63R5173—The best value in high grade variable condensers. Rugged, durable construction. 13 aluminum stationary plates, 12 rotary plates. Overall dimensions 4 1/2 in. high, 3 in. wide, 3 in. long. Bakelite knob. Etched scale. Cap., .0005 M.F. Shipping weight, 1 pound. Price **\$6.25**

Murdock Variable Condenser, Enclosed Type

63R5175—Murdock No. 367. Polished black composition top and bottom with transparent enclosing cylinder, 23 stationary plates, 21 movable plates. Cap. .001 M.F. Diam. 3 1/2 in. Height, 3 1/4 in. Binding posts and arrow pointer are nickel plated. Degree engraved scale. Shipping weight, 2 1/2 lbs. **\$4.20**

63R5177—Murdock 368. Same as above but has 12 stationary plates and 11 movable. Capacity .0005 M.F. Shipping weight, 1 1/2 pounds. Price **\$3.78**

Murdock Panel Type Variable Condenser

63R5179—Twenty-three plate .0005 M.F. capacity. Ruggedly assembled for panel mounting. Complete with mounting screws, knob, pointer, engraved 180 degree scale and anti-capacity handle. 1/4 in. shaft. Any standard knob or dial may be used. Requires space 3 1/2 in. wide, 2 in. deep for mounting. Shipping weight 1 1/2 lbs. **\$3.38**
Murdock No. 3681. Price **\$4.10**

63R5181—Forty-three plates. Capacity .001 M.F. Complete as above. Requires space 3 1/2 in. wide, 2 1/2 in. deep for mounting. Ship. wt., 2 1/2 lbs. **\$4.10**
Murdock No. 3661. Price **\$4.10**

Knocked Down Variable Condenser

Furnished complete but unassembled. Intended for panel mounting and are complete with scale pointer and knob. Formica tops and bases. Shipping weight, 1 1/2 lbs.
63R5183—Capacity, .001 M.F. 41 plates. **\$3.20**
Price **65c**
63R5185—Capacity, .0005 M.F. 21 plates. **\$2.25**
Price **65c**

Montgomery Ward Co.

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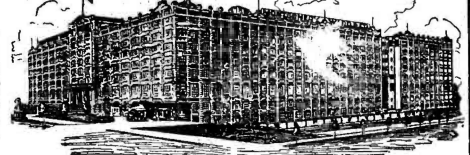
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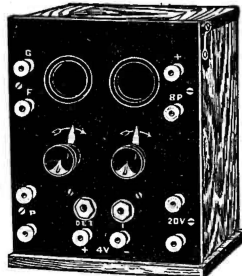
Send for Our Big Catalog

We show a complete line of electrical goods in our New General Catalog. If you are interested in motors either large or small, wiring materials, lamps, transformers, meters, etc., you should have a copy of this new book. In addition to electrical goods it contains a complete line of tools, automobile accessories and merchandise of all kinds which will be of interest to the entire family. A copy will be sent free on request. Kindly mention Radio News.



Combined Detector and Amplifier

This instrument in connection with a set of inductance coils, two variable condensers, batteries and a good aerial will permit of the reception of all classes of radio signals over an extremely broad range. Used in conjunction with our Regenerative set you have a receiving outfit that can only be excelled by adding additional stages of amplification. Detector and amplification tubes mounted inside of cabinet and are provided with rheostat control. Detector provided with grid condenser. High efficiency amplification transformer between detector and amplifier circuit. Jacks are wired in detector and amplifier circuit and a plug supplied for phones permitting use of detector or amplifier as desired. Dull finish bakelite panel, 7 1/2 in. high, 6 3/4 in. wide. High grade weathered oak finish cabinet with hinged top, making interior easily accessible. Binding post connections for batteries and couplers. No tubes, batteries or phones included. Brass metal parts. Binding posts oxidized finish. Shipping weight, 12 pounds. **\$23.95**



63R612—Price

Amplifying Transformer

63R5140—Will positively increase the strength of incoming signals up to twenty times the original audibility. Scientifically designed to work with the vacuum tubes supplied for amateur use. One of the best devices in its class. It is of the iron core type and is supplied with binding posts and lugs for mounting. Height, 2 1/2 in. Shipping weight, 1 pound. Price **\$3.75**



63R5141—Same as above but not mounted. Price **\$2.95**

General Radio Amplifying Transformer

We believe this to be the most efficient, best designed and best constructed amplification transformer on the market. Panel is of bakelite. Binding posts are polished nickel finish. Supports are black enamel finish. Size, 2 1/2 x 2 1/2 x 2 1/4 in. Ship. wt., 1 lb. Price **\$6.75**

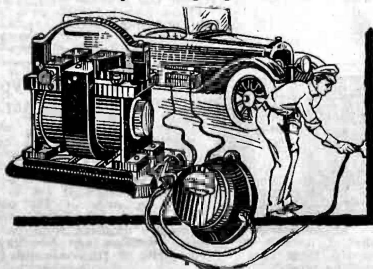
63R5188—As illustrated. Price **\$6.75**
63R5190—Same, not mounted, but with supports for mounting. Price **\$4.95**

"A" Storage Battery

63R498—Six volt, 60 amp. hour storage batteries for filament circuit. This is a high grade battery and will give long, satisfactory service. Weight, 30 lbs. **\$14.85**



Battery Charging Rectifier



For charging exhausted batteries or boosting low batteries. The largest starting and lighting battery can be charged for a few cents—usually less than 10 cents even on high rates. Just screw plug into the light socket, attach leads to battery and turn on current. Large connecting clips make it easy to hook on to any battery.

Note: These rectifiers are for use only on 105 to 115 voltage 60-cycle alternating current, which is the usual city lighting current. Will not work on direct current nor 25-cycle currents.

Prices include 10-foot connecting cord with socket plug, ammeter, battery leads and two clips. Length, 7 inches, width, 5 inches, height 7 inches.

63R6193—Charges 6-volt battery at 7 amperes rate. Shipping weight, 10 pounds. Price delivered, **\$13.95**

each
63R6191—Charges 12-volt battery at average rate of 5 amperes. Shipping weight, 14 pounds. **\$13.95**
Price delivered, each

Vacuum Tube Plate Circuit Battery

Composed of 15 cells in series—22.5 volts. Each cell separately insulated and the whole unit compactly assembled and sealed together. Flexible leads from end cells. Polarity plainly marked. **63R5618**—Signal corps standard size, 2 1/2 lbs. Shipping weight, 2 lbs. **98c**
63R5621—Navy standard, size, 6 1/4 x 4 x 3 in. Shipping weight, 5 lbs. Price **\$1.65**



Porcelain Base Rheostat

German silver winding on threaded fibre strip imbedded in porcelain base. Smooth easy action. Moulded knobs, 1 1/4 in. diameter. Resistance, 11 ohms. Capacity, 3 amperes. Diameter, 4 inches. Shipping weight, 1 1/2 lbs. **88c**



Panel Mounting Rheostat

63R5316—An ideal rheostat for filament control. Enameled resistance wire wound on bakelite form. Resistance 5 ohms. Capacity 2 amperes. Complete with knob, shaft, nuts and pointer. Ship. wt., 3 oz. **\$1.05**



Combination Rheostat

63R5318—For either panel or table mounting. Especially desirable for panel mounting. Requires space only 2 1/2 in. diam. and 7/8 in. deep. Moulded condenser base and knob. Smooth operation. Easy connecting and assembling. Resistance 6 ohm. Capacity 1 1/2 amperes. Shipping weight, 8 oz. **\$1.42**



Unmounted Honeycomb Inductance Coils

High grade efficient inductance coils at attractive prices. Claimed by many users to be the best on the market. Made firm by varnish impregnation. Shipping weight, 4 to 16 oz. Wave length is in meters with .001 M.F. condenser. Not mounted.



Article Number	Number Turns	Approximate Wave Length Range	Price
63R5470	25	130—250	39c
63R5471	35	180—450	42c
63R5472	50	250—700	48c
63R5473	75	400—900	55c
63R5474	100	500—1,000	59c
63R5475	150	600—1,200	62c
63R5476	200	1,000—2,500	65c
63R5477	300	1,500—4,500	70c
63R5478	400	2,000—6,000	78c
63R5479	600	4,000—10,000	98c
63R5480	1,000	8,000—15,000	\$1.38
63R5481	1,250	10,000—20,000	1.72
63R5482	1,500	16,000—25,000	2.17



Test Buzzers

63R5345—Watch case buzzer. Operates on one dry cell. Nickel plated cover and base. 1 inch high. 2 1/2 inches diameter. **85c**
Ship. wt., 3 oz. Price

Receiver Cord

63R5385—Double receiver green mercerized cord, 6 feet long, for use with any standard receiver. Price. **.70c**

Century Buzzer

64R5346—Used by the Army and Navy and commercial wireless stations. For adjusting crystal detectors. Operates on one or two dry cells. Base is hard rubber with black enameled brass cover. Two thumb screws provide for adjustment of the armature to regulate the tone to desired pitch. Genuine Platinum Contacts. Diameter of base, 2 in. Ship. wt., 6 oz. **\$1.65**



Test Buzzer Push Button

64R5137—For use with test buzzer. Nickel rim with pearl center. Held firmly in 3/8 inch hole by small spring clips. Ship. wt., 4 oz. **25c**



Murdock No. 55 Head Sets

These sets have given excellent service to thousands of users. Thin extra responsive diaphragms, fine quality permanent steel magnets, enameled copper wire windings. Nickel silver adjustable headband, complete with 5-foot cord. Ship. wt., 1 1/2 lbs.



63R5370—Double set, 2000 ohms (total). **\$4.25**
63R5371—Double set, 3000 ohms (total) **\$5.20**

Brandes High Grade Receivers

The Brandes line of receivers is the very finest. They are used throughout the world and are famous for their excellent workmanship, durability and extreme sensitiveness. All have the new Brandes type head band, which is comfortable, easily adjusted, very light and will not catch the hair. Fitted with 6-ft. polarity indicating cord. The phones of each set have carefully matched tones. Ship. wt., 2 lbs. per set.

63R5380—Superior type, total res. 2000 ohms. **\$7.70**

Complete. Wt., 14 oz. Price

63R5381—Transatlantic type, total res. 2800 ohms. Complete. Wt., 11 oz. Price **\$11.20**

63R5382—Navy type, total res. 3000 ohms. Very sensitive. Complete. Wt., 9 oz. Price **\$13.10**

Learner's Head Set

63R5383—Scientifically constructed for radio use. Should not be confused with ordinary telephone receivers sometimes furnished. These sets are just the thing for those who wish a low priced sensitive radio head set. Res. 1000 ohms. Ship. wt., about 1 1/2 lbs. Price—**\$2.45**



Watch Case Receiver

63R5384—Regulation watch case type telephone receiver. Moulded composition case. Bipolar. Resistance, 80 ohms. **\$1.05**
Ship. wt., 12 oz. Price, each.

Fixed Receiver Condenser

A necessity on every receiving set. Used as "stopping" condenser or for shunting across telephones. Moulded composition bases. Nickel plated binding posts. Ship. wt., about 8 oz.

63R5362—Capacity, .01 M. F. Price **85c**

63R5364—Capacity, .005 M. F. Price **.65c**

Knife Switches

Porcelain base switches. Contacts and blades made of heavy copper. Intended for low voltage currents, but can be used on 125 volt current to carry load not over 15 amperes.

63R2684—Single pole single throw switch. Base, size, 1 1/2 x 3 1/2 in. Ship. wt., 6 oz. **22c**



63R2686—Single pole, double throw switch. Base size, 1 1/2 x 3 1/2 in. Ship. wt., 10 oz. **30c**

Each

63R2687—Double pole, single throw switch. Base, size 2 x 2 1/2 in. Ship. wt., 10 oz. Each. **39c**



63R2689—Double pole, double throw switch. Base, size, 2 1/2 x 4 in. Ship. wt., 1 lb. **48c**
Each

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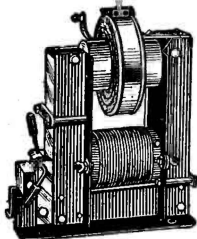
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Wireless Transformers



Thordarson Type R

For use on 108 to 115-volt alternating current, 60 cycles. Generally accepted as the standard transformer for amateur transmitting. Provided with adjustable magnetic leakage gap which controls primary input giving a wide range of amperage and permitting easy adjustment to point of resonance. No impedance or choke coil necessary in primary circuit. Ship. wt., 35 and 55 lbs.

Art. No.	K. V. A.	Amp.	Sec. Volt	Price
63R630	1/2	1 to 5	10,000	\$21.00
63R632	1	2 1/2 to 14	25,000	\$38.00

Thordarson Type R. S. Transformer

This type differs from the well known model shown above only in that it does not have the adjustable magnetic shunt. All other features of sturdy, compact construction and correct electrical characteristics are the same. For use on 105 to 120 volt 60 cycle alternating current.

Art. No.	K. V. A.	Sec. Volts	Ship. wt.	Price
63R633	1/2	3,000	15 lbs.	\$10.00
63R634	1	10,000	25 lbs.	19.00
63R635	1 1/2	15,000	35 lbs.	28.50

Kick Back Preventer

63R5356—Prevents high frequency surges from discharging back into power line. A necessity when power transformer is supplied from city mains. Two 1000-ohm resistance rods. Mahogany finished base. Connections of strip copper. Ship. wt., 4 lbs. Price.....\$4.80

Variable Transmitting Condenser—Oil Immersed

63R620—An oil immersed variable condenser for use with all makes of transformers up to 1 K. W., 25,000 volts. Phenol fibre dielectric, corrugated aluminum separators allow circulation of oil to keep down heating. Flat aluminum sheet electrodes with rounded corners. Variable in ten steps of .0009 M. F. each from .0018 M. F. to .009 M. F. Especially designed to prevent corona losses and brush discharge. Oil included. Ship. wt., 6 lbs. Price.....\$25.00

Wireless Spark Coils

For use on dry cells or storage batteries. Properly adjusted the half-inch coil has a sending range of from 2 to 5 miles, the one-inch coil 5 to 10 miles. Ship. wt., 6 and 8 lbs.
63R5126 — Half inch \$3.65
63R5127—1 inch coil..... 5.95

Spark Coil Transmitting Condenser

63R5348—Designed for use with spark coil sets, dielectric of 5—size, 5x7 photo plates. Mahogany finished case. Permits working on 200 meter wave. Ship. wt., 3 lbs. Price.....\$1.48

Murdock Improved Antenna Switch

63R5113 — A large, sturdy, well built "change over" switch suitable for use on sets up to 1 K. W. Mahogany finish base. Improved support, copper blades. Fitted with third blade to disconnect receiver when sending. Ship. wt., 2 1/2 pounds. Price.....\$4.30

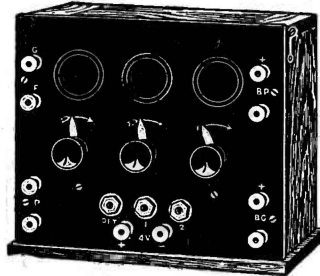
Zinc Spark Gap

63R5350—For use with spark coil transmitters. Base is moulded composition. Metal parts are plated and polished. Can be used with coils up to 4 inches. Ship. wt. 2 pounds. Price.....\$1.10

Radiator Spark Gap

63R5351—Micrometer adjustment. Electrodes of zinc. Cooling vanes aluminum. Metal parts nickel plated. Base glazed porcelain. Will handle over 1 K. W. Weight, 2 lbs. Price.....\$2.30

Combined Detector and Two Stage Amplifier



This instrument with the proper accessory instruments has the broadest possible range. So sensitive is it that even with an indoor aerial such as our loop antenna 63R650 messages may be received from stations hundreds of miles distant. Combined with our Regenerative set and two variable condensers and the proper couplers and loaders with a good outdoor aerial, its range is increased to equal the best commercial stations. Has one detector and two amplifier circuits. Standard tube sockets, grid condenser in detector circuit, two amplification transformers, three jacks and one plug so that any desired circuit may be used. Bakelite panel 7 1/4 in. high, 8 3/4 in. wide. High grade weathered oak finish cabinet with hinged top making interior easily accessible. Binding post connections for batteries and couplers. Binding posts black oxidized finish. No tubes, batteries or phones included. Shipping weight, 18 lbs. 63R615—Price.....\$93.50

Commercial Type Oscillation Transformer

63R648—Designed to give wave ranges both above and below 200 meters. Solid copper windings on "Formica" supports 10 1/2 in. diam. primary of six turns No. 3 wire 6 1/2 in. diam., secondary of twelve turns No. 5 wire. Mahogany finished woodwork. Two helix clips included. Ship. wt., 26 pounds. Price.....\$16.50

Murdock Oscillation Transformer

63R5155—Permits sharp tuning on 200 meter wave. Can be used on sets up to 1 K. W. Primary and Secondary windings of edge-wise wound copper ribbon. Coupling varied by hinge. Shipping weight, 8 lbs. Price.....\$4.75

Universal Spark Gap Motor

63R5624—A rugged high grade motor for spark gaps, running sewing machines, fans, small lathes, buffers, emery wheels, etc. Running idle will make 8,000 R.P.M. Will make about 4,500 R.P.M. with electrode shown below. Will operate on 100-125-volt A. C. or D. C. current. Black enamel finish. Height, over all, 5 1/2 in. 1/4 in. shaft, extends 7/8 in. Will develop about 1/20 H. P. Supplied with 1-in. grooved pulley. Ship. wt., 8 lbs. Price.....\$9.50

Spark Gap Electrodes

63R5625—Saw tooth rotor, 5 1/2 in. diam., of machined cast aluminum with bakelite center and brass bushing to fit 1/4-inch shaft. Two adjustable stationary electrodes. This set together with universal motor listed above, mounted on a substantial base will make a high grade rotary spark gap. Ship. wt. \$4.50 1 1/2 lbs. Price, set.....\$4.50

Improved Model Rotary Spark Gap

Flat pure copper electrodes avoid pitting. Width of break adjustable. Strong breeze generated by rotary electrode quickly quenches spark, thereby allowing transmission of wave of low decrement. All conducting metal mounted on Formica. Easily handles 40,000 volts without endangering motor windings. Constant steady speed. Ship. wt., 10 lbs. Shipped from stock at Chicago.
263R5142—1/2 K. W. size, 1/20 H.P. Universal motor. For 108 to 115-volt current. Speed 4,000 R.P.M. Price.....\$14.80
263R5143—1 K. W. size, 1/12 H.P. Universal motor. For 108 to 115-volt current. Speed 5,000 R.P.M. Price.....\$16.95

Ground Switch

63R5359—600 volt, 100 ampere double throw single-pole switch on insulating base. For grounding aerial when not in use. Ground wire should be 4 gauge. Ship. wt., 5 lbs. Price.....\$3.78

Ground Rod

63R1031—Iron Ground Rod; length, 6 ft. Heavily galvanized. A ground rod is necessary with every Radio outfit to insure a perfect ground contact. Shipping weight, 4 lbs. Price each.....43c

Double Action Wireless Key

63R5356—Double action which makes for speed. Will improve your sending and lends individuality. Large standards, formica knob, heavy silver contacts suitable for use up to 2 K. W. Mounted on durable and heavy formica base. Metal parts nickel plated. Ship. wt., 1 1/4 lbs. Price.....\$4.65

Standard Wireless Key

63R5352—A high grade key made of heavy lacquered brass. Formica base. Contact points. Ship. wt., 1 lb. Price.....\$3.48

Steel Lever Keys

Shipping wt., 14 oz.
63R1739—Leg Key with legs to go through table or desk. Price, each.....\$1.85
63R1741—Legless key to screw to top of table or desk. Price each.....\$1.97

Wireless Practice Set

Beginners! Learn the Code!
Anyone learning wireless must know the code. Without it, it is impossible to understand the signals for a wireless practice set and see how easy it is to learn the code. Set consists of a key and buzzer mounted on a polished wood base. Buzzer reproduces accurately the high pitched sounds of wireless stations. Connect a dry battery to the binding posts on the set by means of a short piece of wire, press the handle of the key and buzzing sound will be produced. In a very short time your ear will become accustomed to the various combinations of dots and dashes representing different letters and numerals. Practice until you can understand the signals at the speed sent by average stations and you have completed the most difficult part of wireless telegraphy. A very good way to learn the code quickly is to place two of these sets in separate rooms with an operator at each set and practice sending signals back and forth. Chart included with each set. Base size, 7x4 1/4 inches. Shipping weight, 3 pounds. 63R1750—Wireless practice set.....\$2.10



Standard Type Transformer

Operates only when connected onto alternating current line of 100 to 125 volts, 60 to 133 cycles. 100 watt Transformer produces 1 1/2 to 24 volts, 150 watt 1 1/2 to 30 volts in steps of 1 1/2 volts each, and in addition can produce constant voltages, so that a number of different voltages can be drawn at the same time. Fitted with 7 ft. cord and attaching plug.
63R1697—Capacity, 100 watts. Ship. wt. \$4.35 10 pounds. Price.....
63R1699—Capacity, 150 watts. Ship. wt. \$5.95 13 pounds. Price.....

American Ignitor Dry Cell

We guarantee that these batteries will reach you fresh and will give you the service you have a right to expect of the best 2 1/2 by 6-inch dry cell made. Designed especially for heavy duty work. For ignition work on gas engines, automobiles, motor boats, etc. Average weight, 2 pounds. Elze, 2 1/2 by 6 inches. Average initial amperage, 25 to 30 amperes.
63R2501—37c
63R2502—Price, per dozen.....\$4.30

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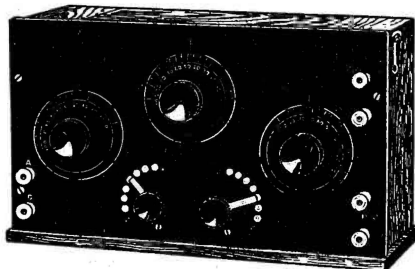
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SATISFACTION GUARANTEED OR YOUR MONEY BACK

Short Wave Long Distance Regenerator Receiver \$31.50

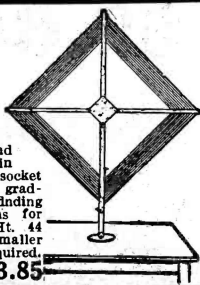
This instrument makes possible the reception of messages to which other types of apparatus will not respond. The range is from 180 to 600 meters and by the addition of external loaders, such as the inductance coils listed on the opposite page, this range may be raised as desired. Properly handled, signals may be read from stations at extreme distances or through heavy static and interference. The antenna and closed circuits are inductively coupled and the coupling is variable. Regeneration is obtained by tuning both the grid and plate circuits to resonance with the incoming signal. Highest efficiency and amplifications are obtained by reducing capacity and resistance in circuits to absolute minimum and best regenerative effects are secured by use of properly designed variometers.



The inductive coupler consists of a primary, the inductance of which is varied by two seven point switches, and a rotating secondary by means of which arrangement very fine tuning is possible. Coupler and both grid and plate circuit variometers are fitted with high grade knobs and indicating dials. A very compact and easily portable instrument. Graduated bakelite panel size 7 1/4 x 13 1/4 in. Fine cabinet weathered oak finish, 5 inches deep. Metal parts brass, black oxidized finish. Ship. wt., 26 lbs. Price.....\$31.50

Loop Antenna

63R5651—Will receive messages from stations 300 miles distant, and much farther under favorable conditions. Wave length, 175 to 300 meters. Comes knocked down complete with brass plates and screws for holding arms in position, brass disc and socket for mounting on table, graduated dial for direction finding and complete instructions for assembling and using. Ht. 44 in. 100 ft. of No. 14 or smaller bare copper wire is required. Ship. wt., 5 lbs. Price \$3.85 without wire.....\$3.85



Indicating Dials and Knobs

- Marconi
 - New Gov.
 - Reg.
 - Ideal
- Made of moulded black composition. Edges of dials are beveled, radial lines and figures are engraved in and filled with contrasting brilliant white enamel 3/16 in. thick.
- 63R5655—3-inch Dial only. Price.....39c
 - 63R5657—3-inch dial with bakelite knob. Price 89c
 - 63R5659—3 3/4 in. dial only. Price.....85c
 - 63R5661—3 3/4 in. dial with 1 1/2 in. government bakelite knob. Price.....\$1.31

Black Composition Knobs
Ship. wt., 4 oz. each. Per doz. 1 1/2 lbs.
63R5665—Marconi style, 1 1/4 in. diam. Hole for 3/16 in. rod. Each 12c. Per dozen.....\$1.10
63R5667—Marconi style 2 1/4 in. diam. Hole for 3/16 in. rod. Each, 21c. Per dozen.....\$2.40

New government style. Has brass bushing for 10/32 thread and two holes for stay pins.
63R5669—Diam. 1 inch. Each 11c. Dozen.....\$1.25
63R5671—Diam. 1-5/16 inch. Each.....14c
Dozen.....\$1.55

63R5673—Regulation 1 1/2-inch knob with 8/32 bushing. Each.....11c Dozen.....\$1.08
63R5675—Ideal 1 1/2-inch knob metal bushing for 3/16 rod with set screw. Each.....20c
Dozen.....\$2.25

Binding Posts and Switch Points

-
- Made of brass, nickel-plated. Binding posts have 1/4 in. long 6/32 screws with washers. Switch points have 1/4 in. screws or shanks threaded 6/32. Ship. wt., per doz., 12 oz.
- 63R5636—Binding Post "A". Length, 3/4 in. Each.....90c Dozen.....\$9.50
 - 63R5640—Binding Post "B". Length 1-3/16 in. Each.....12c Dozen.....\$1.28
 - 63R5644—Binding Post "C". With bakelite knob. Each.....12c Dozen.....\$1.38
 - 63R5646—Switch Point "D". 1/4 x 1/4 head with soldering lug. Per dozen.....38c
 - 63R5648—Switch Point "E". Head 1/4 in. diam. 1/2 in. high with 2 nuts. Dozen.....45c
 - 63R5650—Switch Point "F". Head 1/4 x 1/4 with two nuts. Dozen.....48c

Grade M Formica Panels

- Black sheets. Both sides polished. Waterproof, strong, lasting. Ship. wt., 2 to 8 lbs. Size given in inches. \$0.69
- 63R5688—7 x 9 1/2 Price.....5.15
 - 63R5689—14 x 18 1/2 Price.....1.20
 - 63R5692—7 x 23 1/2 Price.....4.65
 - 63R5694—14 x 18 1/2 Price.....1.53
 - 63R5698—14 x 18 1/2 Price.....5.95



High Frequency Ammeter Jewel Pattern No. 25

An exceptionally accurate instrument. High frequency current heats a thermo-couple and the resultant energy is measured by a sensitive D'Arsonval galvanometer. Invariant a steady pointer. Temperature variations have practically no effect on the readings. Side terminals avoid making inductive loop in connection. Base diameter, 4 3/4 in. Ship. wt., 6 lbs. Price.....\$14.25
63R5660—0 to 3 amperes Range. Price.....\$14.25
63R5661—0 to 10 amperes Range. Price.....\$14.25

Hot Wire Ammeter

63R5365—Will measure accurately the radiation in the aerial and ground circuit. A necessity for tuning the transmitter to 200 meter wave. Range 5 amperes. Will stand 100 per cent overload. Base is of hard rubber composition. Nickel plated rim, size 3 1/2 inches diameter. Ship. wt., 1 lb. Price.....\$4.25



Variometer

63R5640—This is the same high grade variometer that is used in our Regenerative set. With two variometers, a loose coupler and the proper binding posts, dials, knobs, etc., a regenerative set may be constructed at a very low cost. Can also be used separately for grid and plate tuning. Designed for very low dielectric losses and maximum range of inductance. Rotating element contacts made through 1/4 in. shaft so that ball may be continuously rotated without breaking connection. Ship. wt., 2 1/2 pounds. Price.....\$4.45

Loose Coupler

63R5642—The same high grade loose coupler used in our Regenerative set. With a loose coupler two variometers and the proper binding posts, dials, knobs, etc., a regenerative set may be constructed at a very low cost. Can also be used separately. Primary has seven taps which can be connected up to vary inductance. Secondary rotates. Connections are made through shaft. Ship. wt., 3 1/2 pounds. Price.....\$4.20



Electrose Insulators

Electrose insulators are the standard in the wireless field. They stand up under all conditions met with. Eyes are wrought iron galvanized. Ship. wt. 1/2 to 2 1/2 lbs.

Article No.	Dia. In.	Leigh. In.	Stgrth. Lbs.	Elec. Value	Price	
63R5630	2 1/2	3 1/2	250	40,000	25,000	28c
63R5631	1 1/2	4	1,000	40,000	15,000	42c
63R5632	1 1/2	10 1/2	1,000	90,000	50,000	66c

Electrose Wall Insulators

63R5634—Special Wall insulator for lead in wires. Has hole through body for wire. Body diam. 2 in. Length over all, 5-9/16 in. Ship. wt., 1 lb. Price.....83c

Switch Levers

Smooth in operation, always perfect compact without binding Black composition knobs, diam. 1 1/4 in. Metal parts of brass nickel-plated. Ship. wt., 4 oz.

- 63R5651—Complete knob, laminated lever and screw permitting mounting on panels not over 1/4 inch thick. Each.....39c
- 63R5653—Complete knob, spring lever, shaft, two lock nuts and bushing for panels up to 1/2 inch thick. Each.....49c

Send cash with your order to cover the price of the merchandise you select and transportation charges. Send currency by registered letter only. You take no risk in dealing with Montgomery Ward & Co., as we are one of the largest and most reliable institutions in the world.

Magnet Wire

For repairing motors, other electrical apparatus, experimental work, etc. One piece only on a spool. Wire is standard B and S gauge. Insulation and wire both perfect and uniform. Supplied only in weight spools given.



Double Cotton Covered Magnet Wire		Belden Enameled Magnet Wire	
Art. No.	Price	Art. No.	Price
63R1350		63R1400	
Spool	Spool	Spool	Spool
8 oz.	1 lb.	8 oz.	1 lb.
\$.65	\$.95	\$.45	\$.85
.69	1.03	.46	.87
.74	1.12	.48	.92
.84	1.34	.60	.94
.92	1.54	.65	.98
1.02	1.74	.70	1.10
1.18	2.06	.76	1.20
1.46	2.62	.85	1.38
1.64	2.98	.90	1.42
1.95	3.58	.92	1.52
2.84	5.34	1.20	1.98

New Code, Rubber Covered Wire, Single Braid

Solid conductor copper wire, insulated with rubber compound over which is one cotton saturated braid. Ship. wt. 3 and 13 lbs. per 100 ft. Sold only in lengths listed.

- 63R3015—Size 14. Price for 25 ft.....\$0.32
- Price for 100 ft.....\$1.17
- Price for 500 ft.....\$4.95
- 63R3032—Size 6. Price for 10 ft.....54c
- Per 25 ft.....\$1.23
- Per 100 ft.....\$4.50

New Code Twisted Pair Cotton Lamp Cord

Two conductor, twisted New Code Lamp Cord. Conductor consist of fine copper wire strands twisted together. Covering is of fine quality interwoven yellow and green cotton. Ship. wt., 6 lbs. per 100 ft. Sold only in lengths listed.

- 63R3175—Size 18. Price for 10 ft.....28c
- Per 25 ft.....65c
- Per 100 ft.....\$2.37

Porcelain Tubes

Un glazed Porcelain Tubes, 5/16 in. inside; 3/16 in. outside. Length given is from underneath to end. Ship. wt., per dozen, 1 to 2 lbs.

- 63R3902—Length 3 in. Per dozen.....\$0.22
- 63R3906—Length 6 in. Per dozen......43
- 63R3908—Length 8 in. Per dozen......70

Un glazed Porcelain Cleats

Take No. 10 or smaller wires. Have 2 1/2 in. wire centers. Ship. wt. per dozen pair, 3 lbs.

- 63R3923—Wire cleats. Price per dozen......42c

Solid Porcelain Knobs

New Code No. 5 1/2 solid porcelain knob. Height, 1-1/16 in. Diam., 1 1/4 in. Hole, 1/4 in. Groove, 5/16 in. Ship. wt., per doz. 1 1/2 lbs.

- 63R3927—Per doz.....32c
- No. 4 solid porcelain Knob. Height, 1-11/16 in. Diam., 1 1/2 in. Hole, 3/8 in. Groove, 1/2 in. Ship. wt., per doz., 2 lbs.
- 63R3929—Per doz.....45c

Porcelain Entrance Switch

National Electric Code Standard Porcelain Base Entrance Switch or main line cut-out switch. Takes plug fuses. Capacity, 125 volt, 30 amperes.

- 63R4305—Two-pole switch. Ship. wt., 1 1/2 lbs. Base size, 3 1/4 x 5 1/4 in. Price, each......76c

Antenna and Copper Wire

Supplied only in size coils listed.

- 63R5150—Aerial cable. Composed of seven strands No. 22 B & S gauge hard drawn tinned copper wire. Ship. wt., 6 lbs. per 100 feet.
- 50 feet, 49c
- 100 feet, 85c
- 500 feet, \$3.95
- 63R5151—Bare copper wire No. 14 gauge.
- 50 feet, 22c
- 100 feet, 42c
- 500 feet, \$1.70
- 63R5152—Bare copper wire No. 12 gauge.
- 50 feet, 33c
- 100 feet, 62c
- 500 feet, \$2.65

A high grade Hardened Steel Plier. Used a great deal on all electrical work. Handy around any work shop. Ship. weight, 6 oz.

- 63R5802—6-inch Sharp Nose Plier. Price.....\$1.23
- Best Hardened Tool Steel Diagonal Jaw Side-cutting Nipper. Length, 5 in. Ship. wt., 4 oz.
- 63R5806—Diagonal Jaw Pliers. Price.....\$1.28

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