

JOSEPH J. SIMPSON
85-39 152 STREET
JAMAICA 32, L. I., NEW YORK

1/7/60

Dear Mr

Found these in my
junk box. Any Value?

This for IRE Copy. F.B.
Enclosed is my "Wont List" for 1960

Please write again

73
JS

REMLER INFRA-DYNE AMPLIFIER

No. 700

INSTRUCTION SHEET

The Remler No. 700 Amplifier employs three CX299 or UX199 tubes. These should be operated from a separate rheostat and are rated at 3.3 volts filament. They should be operated at the lowest filament temperature which will give satisfactory results; the correct voltage will probably be found to lie between 3 and 3.3 volts. The Amplifier will be found to give best results when a plate voltage of 90 is employed.

The following procedure should be employed in getting the Infradyne Amplifier into operation.

1. Install the Amplifier in the receiver, making connections as indicated on the binding posts.
2. With the fingers turn the adjusting screw, marked "Increase," all the way in.
3. Set the pointer of each of the four vernier condenser knobs to zero.
4. Tune in a moderately weak station.
5. Change the settings of the four vernier condenser knobs slightly, using the wooden wedge furnished with the unit. While these condensers are adjusted at the factory for best operation when the pointers are set at zero, the settings will, in practice, be found to vary somewhat from this position due to a slight difference in tubes.
6. As the settings of the vernier condenser knobs approach more nearly the values for most satisfactory operation the amplifier will be found to go into oscillation. This oscillation can be prevented by carefully loosening the adjusting screw, marked "Increase." The vernier condenser settings should again be slightly changed until the point of best operation is obtained. Should the latter adjustment again throw the amplifier into oscillation it will be necessary to further slightly loosen the adjusting screw.

Once the above adjustments have been made and the settings for most satisfactory operation have been obtained the Infradyne Amplifier will function without further attention other than adjustment of the filament temperature.

If difficulty is experienced in obtaining maximum amplification after all instructions given for placing your receiver into operation have been carefully followed, the trouble can probably be remedied by lengthening somewhat the wire connected to the plus "B" binding post of the amplifier. The best length for this lead will be found by experiment.

The Infradyne Amplifier meets exactly the requirements of the Sargent Infradyne described in "Radio" for August, 1926, and is also adapted to use with many standard receivers of the tuned radio frequency type. When used with standard tuned radio frequency receivers it offers a decided increase in selectivity and a marked reduction in background noise.

Additional information regarding the special application of the Infradyne Amplifier to your individual requirements will be furnished upon request.

REMLER
GRAY and DANIELSON
Manufacturing Company

260 FIRST STREET
SAN FRANCISCO

CHICAGO

NEW YORK

SERVICE FOR SET BUILDERS

GRAY & DANIELSON MANUFACTURING CO., 260 FIRST STREET, SAN FRANCISCO, CALIF.

REMLER 1928 INFRADYNE

BY H. W. SCRIBNER

The 1928 Infradyne is a ten-tube receiver in which radio frequency amplification at broadcast frequencies is combined with amplification at the relatively high intermediate frequency of 3500 kc. which is approximately equivalent to a wavelength of 86 meters. In the intermediate stages the "sum frequency" is amplified. The "sum frequency" is, as its name indicates, the sum of the received frequency and a locally generated frequency. Through the use of the sum frequency selectivity, quiet amplification and freedom from repeat settings on the oscillator tuning dial are obtained.

The 1928 Infradyne is particularly distinguished for the fidelity of its reproduction. For mellowness of tone, for volume without distortion, it can not be surpassed. Selectivity, which has not been made so great that side-bands are cut and reproduction is spoiled, is ample for present day conditions. In locations immediately adjacent to high-power broadcasting stations fewer distant stations will necessarily be received during the operation of the local stations than would be received were the receiver situated in a slightly less congested locality although no trouble will at any time be experienced in completely separating local stations. The 1928 Infradyne combines excellent selectivity and really enjoyable, life-like reproduction with ease of operation, compactness and attractiveness of appearance. The Infradyne is truly a universal set which appeals alike to the man who requires the utmost efficiency of operation and the man who desires the reception of distant stations.

It is housed in a beautiful, sheet-copper cabinet finished in two-tone brown crystalline enamel which will harmonize perfectly with the finest of surroundings.

The 1928 Infradyne is provided with a switch having three positions, "Off," "Local" and "Distance." A turn of this switch to "Local" brings into operation a single-dial control, five-tube tuned radio frequency receiver. When the switch is in the "Distance" position the complete Infradyne is available. There are but two major tuning dials, one of which operates the condenser tuning the radio frequency amplifier circuits and the other of which operates the condenser tuning the local oscillator circuit. When the panel switch is in the "Local" position and five tubes only are in use only the tuning dial controlling the radio frequency amplifier circuits is employed. Each of the two tuning dials rotates through a full 360 degrees in covering the broadcast band and ample dial separation of stations is had at all parts of the scale. An adjustment is provided so that the dials can easily be made to read quite closely together, with a maximum deviation at the far ends of the scale of perhaps five or ten degrees. Illumination of the dials is provided and during the time that five tubes only are in use only the tuning dial employed will be illuminated.

In addition to the tuning dial controls, volume and sensitivity controls and a filament rheostat are located on the panel. These controls are all of the semi-fixed type. The volume control is a rheostat in the filament circuit for the first two radio frequency tubes and its adjustment determines the gain in the radio frequency amplifier. The sensitivity rheostat controls the gain in the intermediate amplifier. The panel rheostat is adjusted so

that the panel voltmeter reads "3" and is not further used. An "Antenna Compensator" control is provided. The antenna compensator is a device which nullifies the detuning effect of the antenna system, making the use of variable trimmer controls for the radio frequency amplifier unnecessary and hence simplifying tuning. It permits the immediate adaptation of the receiver to the particular antenna system used and does not need to be used for ordinary tuning, once it has been correctly adjusted.

Variable coupling between the primary and secondary circuits of the transformers used in the radio frequency amplifier is employed and the degree of coupling is automatically controlled through a cam located on the shaft of the tuning condenser. The result is that maximum and uniform gain is obtained at all wavelengths in the broadcast band. The radio frequency amplifier is a completely shielded, wired and balanced unit ready for installation in the receiver without special attention. Switches are provided which can be adjusted at the time

of installation for the degree of selectivity and stability of operation best suiting the operator and local conditions.

Five CX 301A tubes, four CX 299's and one power tube, which may be either a CX 112 or a CX 371, are used. These comprise two radio frequency amplifiers functioning at the frequency of transmission, a first detector or mixer tube, an oscillator, three intermediate amplifiers functioning at the fixed frequency of 3500 kc., a second detector and two audio amplifiers. A six-volt filament supply is required and this should preferably be a storage battery of 100 ampere-hour or more capacity. Plate voltages of 22½, 67½, 90 and either 135 or 180 are necessary. The plate supply may consist of "B" batteries of the heavy duty dry-cell type or the storage type or a suitable "B" eliminator may be used. The Infradyne is critical as regards filament and plate voltages and the peculiar requirements of the set must be kept in mind in choosing power supply devices. The receiver draws a total filament current of two amperes when the ten tubes are in use and a total current of 1½ amperes when five tubes only are being used. The maximum drain on the plate current supply device, assuming the use in the second audio stage of a CX 371 tube operated at a plate voltage of 180, will be in the neighborhood of 40 milliamperes. Detailed information regarding the use of "A" and "B" eliminators with the Infradyne will be supplied upon application.

The Infradyne is, as has been implied in the above discussion, intended for use with an antenna. One about 40 feet in length will generally be found about right. In localities far from broadcasting stations longer antennas can successfully be used and in localities which are congested as regards broadcast conditions short antennas of the inside variety can be used with surprising good results.

Parts for the 1928 Infradyne are available in kit form. Six blue prints and a complete and detailed instruction book are supplied with the No. 750 Foundation Kit. Construction of the set is simple and virtually resolves itself into the assembly of the component parts and the installation of a wiring cable laid out by the builder in accordance with full instructions furnished.

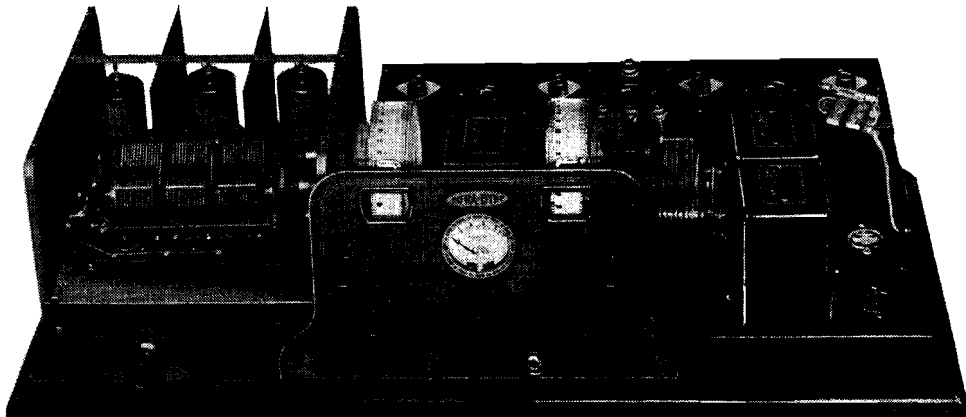
**THIS
SERVICE
WILL BE
BROADENED
WATCH
FOLLOWING
BULLETINS**

SERVICE FOR SET BUILDERS

GRAY & DANIELSON MANUFACTURING CO., 260 FIRST STREET, SAN FRANCISCO, CALIF.

REMLER 1928 INFRADYNE

BLUE PRINTS AND INSTRUCTIONS \$1.00 SET
FURNISHED BY JOBBERS
INCLUDED WITH No. 750 FOUNDATION KIT



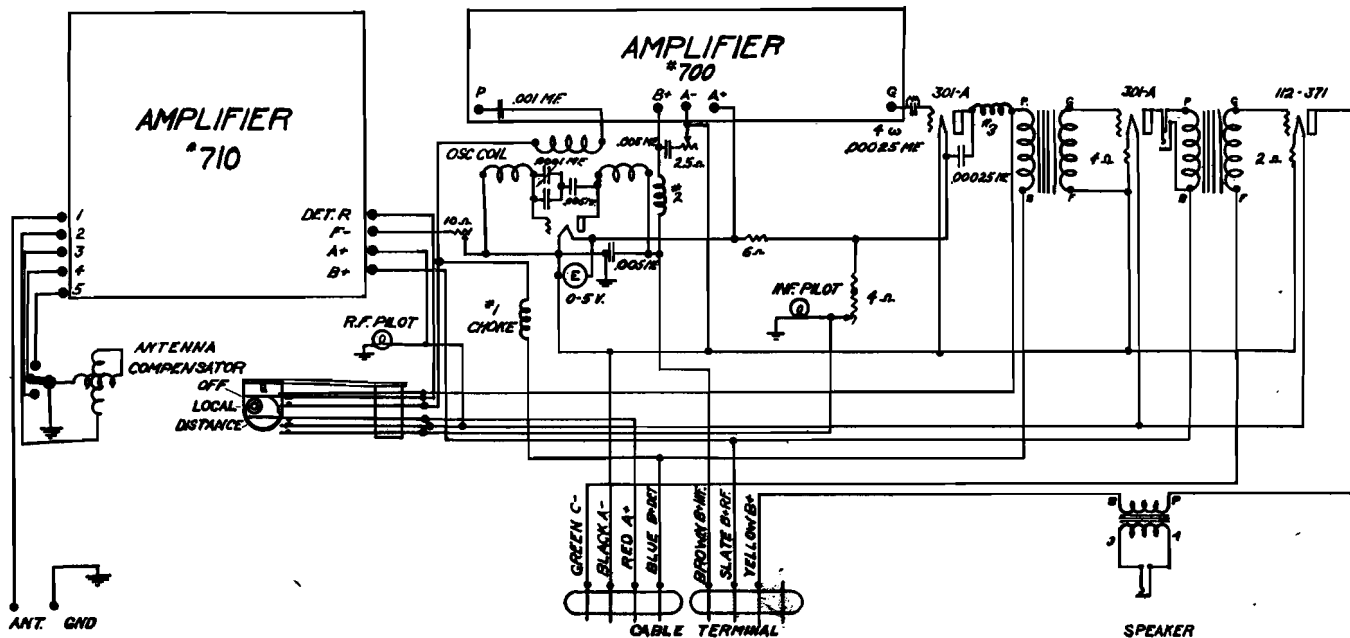
FOR THE CUSTOM SET-BUILDER
OPERATES ON FIVE OR TEN TUBES

LIST OF PARTS

1 REMLER No. 750 Infradyne Foundation Kit. Includes Steel Base, Bronze Control Panels, Dials, Condensers, Rheostats, Switches, Chokes, Coupling Coil, Resistances, Sockets, Cable, Wires, Bolts, Nuts, Screws, Washers, Brackets, Knobs and a Complete Set Blue Prints with Instructions.....	\$ 52.00	1 REMLER No. 700 Infradyne Amplifier.....	27.50
1 REMLER No. 710 Radio Frequency Amplifier and Antenna Compensator	55.00	1 REMLER No. 780 Copper Cabinet Two-Tone Brown Crystalline Enamel and Wood Base.....	15.00
		2 Silver-Marshall No. 220 Audio Transformers.....	\$8.00 16.00
		1 Silver-Marshall No. 221 Output Transformer.....	7.50
		1 Jewell No. 135 or Weston No. 506 Voltmeter.....	7.00
		Complete Set of Parts. List.....	\$180.00

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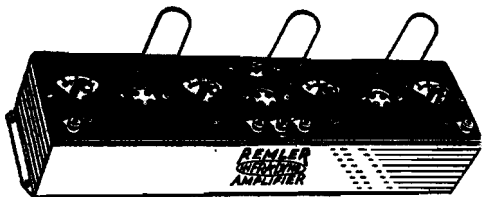
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SERVICE FOR SET BUILDERS

GRAY & DANIELSON MANUFACTURING CO., 260 FIRST STREET, SAN FRANCISCO, CALIF.

PARTS FOR THE 1928 INFRADYNE RECEIVER

REMLER *Infradyne* AMPLIFIER

The Remler Infradyne Amplifier is a three-stage radio frequency amplifier designed to function at a fixed frequency of 3500 kc. It is adapted to use with virtually any receiver of the neutrodyne or tuned radio frequency type; it fully meets, as well, the requirements of the Sargent Infradyne circuit.

The Infradyne Amplifier not only decidedly improves the selectivity of a receiver and greatly amplifies the received signal but it suppresses, to a large degree, audio frequency disturbances originating both within and external to the receiver. It makes possible the reception of stations which would otherwise be entirely inaudible or blanketed out by locals and permits quieter and more enjoyable reception of distant stations.

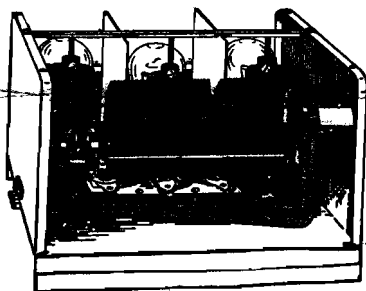
Controls are of moulded bakelite and nickel-plated brass and the Amplifier is enclosed in a bright-dipped and lacquered copper case which effectively prevents it from influencing or being influenced by adjacent apparatus.

Construction is in accordance with the best engineering practice. Low-loss design has been employed and parts and wiring are arranged so that undesirable capacitive and inductive coupling is eliminated.

The success of the Infradyne Amplifier has been made possible by the development of a simple and effective method of controlling amplification at very high frequencies. Amplification at 3500 kc. permits the attainment of extreme selectivity without impairment of quality of reproduction due to cutting of side bands.

The Infradyne Amplifier employs three CX 299 (UX 199) tubes. These tubes are operated at a filament voltage of 3 and a plate voltage of 67½.

No. 700. Infradyne Amplifier..... List Price \$27.50

REMLER *Radio Frequency* AMPLIFIER

The Remler No. 710 Radio Frequency Amplifier is a completely shielded, single-dial control unit incorporating two stages of radio frequency amplification and a detector. It is designed to employ tubes of the CX 301A (UX 201A) type. A resistor automatically controlling the detector filament temperature is included in the Amplifier and leads are brought out so that an external rheostat can be used on the radio frequency tubes.

So-called plate or "bias" detection is used in the Amplifier. Plate detection introduces less distortion than grid detection. For detection the third tube is operated at a plate voltage of 22½; to convert the unit to a three-stage radio frequency amplifier it is only necessary to raise the plate voltage applied to the third tube to 67½ or 90.

The No. 710 Amplifier is completely enclosed in a sheet copper case which is "grounded" to the negative filament circuit. It is therefore electromagnetically shielded and broadness of tuning which would result from direct pick-up of energy by the coils is eliminated. Electrostatic shielding is employed between stages.

Tuning is accomplished by means of the Remler Type 633 Three-in-Line Condenser which is included in the Amplifier. Three special balancing condensers are an integral part of the Type 633 Condenser and these balancing condensers are carefully adjusted before the Amplifier leaves the factory to compensate for differences in capacity introduced by coils, tubes and wiring.

The coils are wound with double-silk covered wire, are small in diameter and are of the solenoid type. The secondaries are specially wound to limit the external fields and to further the stability of the Amplifier. The primaries are arranged to rotate within the secondaries and their motion is automatically controlled through the condenser shaft. Constant coupling and uniform gain at all wavelengths are thus obtained. Switches are provided whereby two degrees of primary to secondary coupling can be obtained in the second two r.f. transformers while the antenna compensator permits three degrees of antenna coupling. Switches are also provided by which stabilizing resistances can be connected into the grid circuits of the first and second tubes when necessary. The entire unit is extremely flexible and can be adjusted for maximum efficiency under widely varying conditions. Amplifier Dimensions: Width 8½, depth 10½, height 5¼.

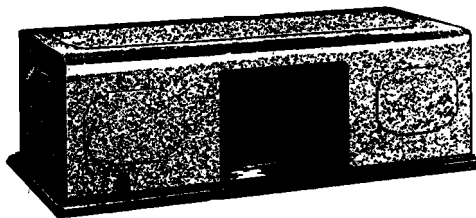
The Antenna Compensator is supplied with the No. 710 Radio Frequency Amplifier. It consists of a three-point switch and a small variometer. The antenna coupling is varied by means of the switch. The variometer is connected in series with the secondary of the input transformer or antenna coil and is included in the tuned circuit controlled by the antenna section of the tuning condenser. The compensator variometer is adjusted in conjunction with the antenna section balancing condenser so that the antenna tuned circuit will stay in resonance with the remaining tuned circuits at all wavelengths without the further adjustment of the compensator controls. The compensator switch and variometer are controlled by the two halves of a single knob. The compensator can be used as a final adjustment in order to obtain the greatest possible volume from a distant station.

No. 710. Radio Frequency Amplifier..... List Price \$55.00

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GRAY & DANIELSON MANUFACTURING CO., 260 FIRST STREET, SAN FRANCISCO, CALIF.

REMLER CABINET AND BASE

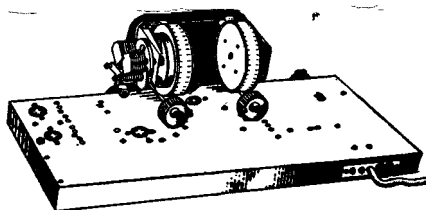


The Remler Infradyne Cabinet and Base add the necessary finishing touch to the 1928 Infradyne Receiver. They make of the Infradyne a receiver which will harmonize perfectly with the richest of furnishings and which is beautiful in its simplicity.

The cabinet is of formed sheet copper finished in two-tone brown crystalline enamel. It fits over and closely around the pressed steel base on which the set is built. The receiver and cabinet are set on top of the decorative wooden base which is finished in satin walnut.

No. 760. Cabinet and Base..... List Price \$15.00

REMLER *Infradyne* FOUNDATION KIT



The Infradyne Foundation Kit is the basis of the 1928 Infradyne Receiver. With it are included a drilled, pressed steel base, instrument panel, bronze control panels, and all of the small parts which would otherwise have to be gathered together from various sources. When the Foundation Kit is employed the builder of the Infradyne is assured of materials of the highest class and of a receiver that will function perfectly and that is the equal in construction details of the highest priced factory-built sets. The bronze control panels and special bakelite fittings insure a standard of appearance second to none. With the Foundation Kit are included blueprints and complete and detailed instructions covering building and operation of the set.

The following items are included in the Infradyne Foundation Kit. A survey of this list will give to the reader an idea of the thoroughness and care with which all details have been taken care of and will convey a partial realization of the saving of time, energy and expense which the Kit offers.

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Pressed Steel Base (11x26x1½). 1 Pressed Steel Instrument Panel. 2 Bronze Control Panels. 1 Remler No. 110L Dial Complete. 1 Remler No. 110R Dial Complete with Special Bracket. 1 Remler Type 659 Condenser. 4 Remler No. 50 Sockets. 1 Frost 2½ Ohm Rheostat. 1 Frost 4 Ohm Rheostat. 1 Frost 10 Ohm Rheostat. 1 Frost No. 953 Jack. 1 Frost No. 954 Jack with Oxidized Metal Bushing. 1 Yaxley No. 69 Switch. 3 Remler No. 35 Choke Coils. 1 Electrad Type P .00025 Mfd. Condenser. 1 Electrad Type P .001 Mfd. Condenser. 3 Electrad Type P .005 Mfd. Condensers. 1 Electrad Type GS .00025 Mfd. Condenser with Special Bracket Attached. 1 Coupling Coil. 1 2-Ohm Resistor. 1 4-Ohm Resistor. 1 6-Ohm Resistor. 1 6-Megohm Durham Grid Leak. 1 Eby "Antenna" Binding Post. 1 Eby "Ground" Binding Post. 8 ft. Battery Cable. 12 Pieces Colored Wire. | <ul style="list-style-type: none"> 1 Coil Binding Cord. 1 Special Adjustable Condenser with Bracket Attached. 2 Special Bakelite Terminal Blocks. 6 Special Molded Bakelite Knobs. 1 Special Bakelite Bushing. 2 Rheostat Extension Shafts. 2 Rheostat Levers. 2 Special Spring Washers. 2 Special Nickel-Plated Brackets. 5 Special Brass Spacers. 2 Nickel-Plated Brass Threaded Bushings. 1 4" x ¾" x ⅛" Bakelite Strip. 1 Battery Cable Clamp. 1 ½" Fibre Washer. 3 1½" Fibre Washers. 1 2" Fibre Washer. 2 Nickel-Plated Washers. 2 oz. Brads. 21 6-32 x ¼" n.p. Machine Screws. 6 6-32 x ⅜" n.p. Machine Screws. 7 6-32 x ½" n.p. Machine Screws. 1 6-32 x ⅝" n.p. Machine Screws. 8 6-32 x ¾" n.p. Machine Screws. 42 6-32 x ¼" n.p. Hex. Nuts 2 21/64" x 36 Brass Hex. Nuts. 4 Soldering Lugs. 6 Prints. 1 Instruction Book. |
|---|--|

No. 750 Foundation Kit Unassembled..... List Price \$52.00

The following accessories will be needed: 1 6-Volt Storage Battery (80 ampere-hour capacity or larger), 3 45-Volt "B" Batteries (Eveready No. 770 or Layerbilt or Burgess No. 10308), 1 "C" Battery (See Tube Mfrs. Specifications), 5 CX 301A (UX 201A) Tubes, 1 CX 112 (UX 112) or CX 371 (UX 171) Tube, 4 CX 299 (UX 199) Tubes. Suitable Loud Speaker, preferably of the cone type.

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4. Electrical Experimenters

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Jan., April, , 1914

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5 Science & Invention

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Jan 1949

Joseph J. Simpson
85-39 152nd Street
Jamaica 32, L. I., N. Y.

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- Crystal wheel for TORNEY CRYSTALOI DETECTOR
- 600 P Deforest Honeycomb Coil
- 1/2" E I CO or similar SPARK COIL
- 1/2 or 1" E I CO HELIXES
- Several fixed condensers by E I CO

*John Simpson
Lamar 21*