



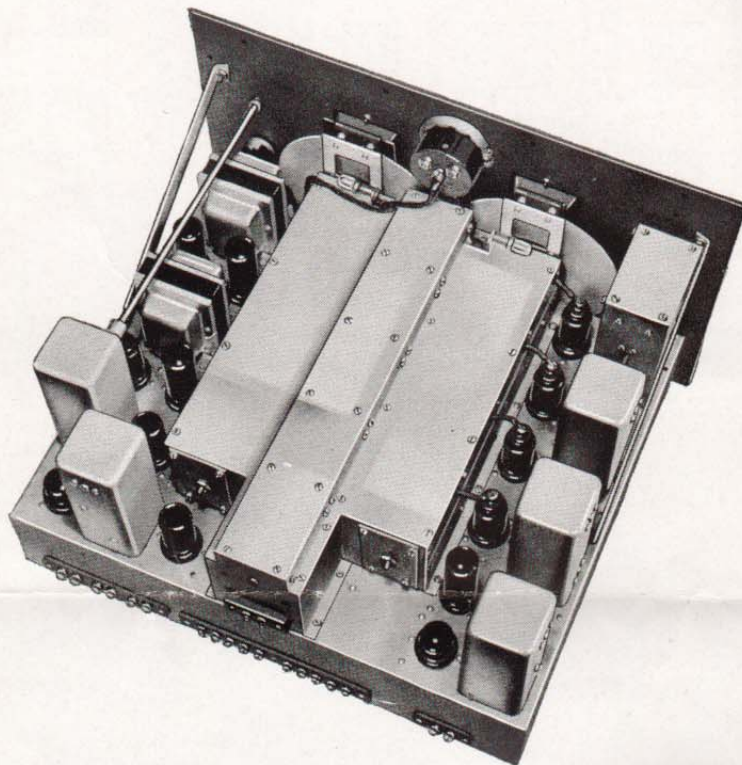
# SUPER PRO



# HAMMARLUND



# HAMMARLUND's

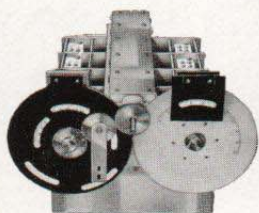


THE new Series 200 "Super-Pro" has 18 tubes and is the last word in communications receiver engineering. Every important part in this receiver is conservatively designed to do a specific job. The "Super-Pro" is *not* an "assembled" receiver designed around standard parts. Quality was the first consideration in designing the new "Super-Pro." Since this is not a competitive receiver, cost never entered into the picture. As a result, we have produced the finest receiver that money can buy—a receiver that is not just one instrument having limited operating possibilities, but one that is really flexible and thus applicable to a great many types of service. So flexible is this new receiver that it would require a great many individual receivers, each specifically designed to do a certain job, to equal its performance. The operator of a "Super-Pro" has, at his finger tips, almost unlimited possibilities. Complete control of selectivity as well as sensitivity makes him master of practically any situation. The mechanical design and construction of the "Super-Pro" insure peak performance at all times even under the most severe conditions. Efficient operation is not jeopardized by weak-kneed mechanical construction.

*New SUPER Pro Chassis*



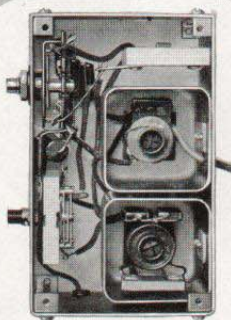
# New SUPER PRO



CALIBRATED DIALS



VARIABLE IF UNIT

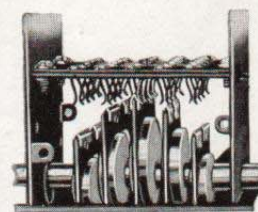


VARIABLE CRYSTAL

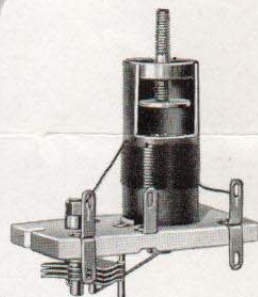
THERE are many exclusive features built in the new Series 200 "Super-Pro". Two stages of high gain tuned R.F.; three stages of I.F., and three stages of audio amplification provide exceptional gain without danger of overload or instability due to any one stage operating too near the critical point. HAMMARLUND engineers have always believed in using a sufficient number of amplifier stages rather than forcing only a few stages in order to obtain high gain. The two tuned R.F. stages are very carefully balanced and designed to provide extremely high image rejection and favorable signal-to-noise ratio even on the very weak signals. Except in extremely rare cases, these two stages will provide image-free reception throughout the entire range of the receiver. Three I.F. stages are employed for two very good reasons—first, so that the gain per stage could be held down to the point of maximum stability, and second, to provide a high degree of selectivity. This high selectivity is, of course, not always desirable and for that reason, the I.F. transformers were designed with variable coupling so that their selectivity characteristics can be varied from maximum selectivity (3 kc.) to nearly 16 kc. which is desirable when high quality reproduction is wanted. Selectivity, of course, is *continuously* variable throughout this range. The crystal filter selectivity is also variable and provides an additional range of selectivity from better than 100 cycles to  $2\frac{1}{2}$  kc. This allows complete control from high fidelity to single-signal code reception.

The "Super-Pro" has electrical band spread employing a 12-gang condenser which spreads each amateur band, as well as other short wave broadcast bands, over a large portion of the dial. The tuning range of the "Super-Pro" is divided into five individual bands. The switch for changing from one band to another is especially designed for lowest loss, high stability, and noiseless operation. This cam-operated knife switch has silver-plated fingers and knives that make and break contact. The illustration to the right provides a clear picture of the unique design of this noiseless switch.

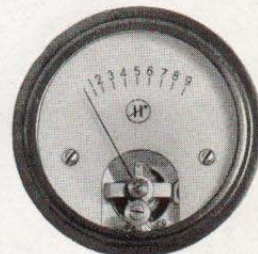
The main tuning dial is calibrated in frequency for accurate tuning. Only the band which is in use at the time of operation appears behind the dial window. Other scales are masked in order to eliminate confusion. As the band switch is rotated, the proper scale appears behind this window. Improved noise limiter practically eliminates automobile ignition interference and similar disturbances. Only an "On and Off" switch controls the limiter. No critical adjustments are necessary. The strength of the incoming signal regulates the noise limiter. Thus, when it is turned on it is automatically adjusted to suit receiving conditions.



NOISELESS SWITCH



TUNING COIL UNIT



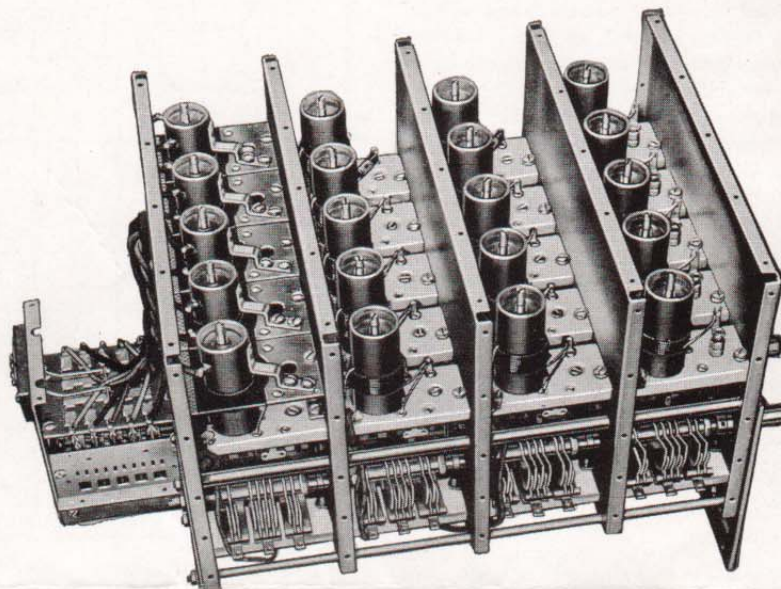
"S" METER

## FEATURES

- ★ Full range variable selectivity
- ★ Calibrated, adjustable "S" meter
- ★ Calibrated C.W. beat oscillator
- ★ Send-Receive switch—relay connections
- ★ Efficient AVC system reduces fading
- ★ Radio frequency sensitivity control
- ★ Audio frequency amplification gain control
- ★ Absolute image rejection—2-R.F. stages
- ★ Fractional microvolt sensitivity
- ★ Direct reading calibrated dials.



# HAMMARLUND's



THIS elaborate tuning unit is the heart of the "Super-Pro". There are 20 individual coils, each separately tuned with its own condenser. The low-loss Isolantite bases on which the coils are mounted also accommodate the padders. Both inductive and capacitive adjusters are employed to insure resonance and proper tracking throughout each range. The first R.F. grid coil has an electrostatic shield between it and the antenna winding. This shield permits the use of noise reducing antennas with maximum results. High stability is maintained with air dielectric condensers in the high frequency oscillator stages. The design of the wave change switch is such that the capacity between contacts is so low that changes in temperature will not cause frequency drift. The coils for all bands, except the ones being used, are short-circuited automatically by the switch so as not to cause absorption of energy from the coils which are in operation. Uniform bandspread is maintained with multi-section condensers which permit the use of favorable capacity-to-inductance ratios. This makes tuning easier and results in higher efficiency. Each section of the tuning unit is contained in the separate compartment and is completely shielded to prevent stray coupling and feedback. This also prevents dust particles from entering the tuning unit. The tuning units are completely assembled and wired and tested before being put into the receiver. Each unit, therefore, is double-checked.

*New SUPER PRO Tuning UNIT*



# New SUPER PRO

COMPLETE CONTROL of selectivity within wide limits is one of the greatest features ever offered in a professional receiver. Selectivity of the new Series 200 "Super-Pro" is divided into two distinct ranges illustrated by the curves in Fig. 1 and 2. In Fig. 1, we have curves for the wide range. This range of selectivity is controlled directly from the panel by mechanically varying the coupling between the primary and secondary of the I.F. transformers. Only four curves are shown—actually the band width can be adjusted to any point between curves number 3 and 16. This continuously variable range allows the operator to adjust selectivity to compensate for whatever amount of interference may be present. As a result the best possible fidelity is available with the least amount of interference. Under conditions where interference from other stations is not serious, the band width can be adjusted to the widest point for really high fidelity reproduction. It is important too, to note the relatively sharp cut-off. That is to say, the sides are very straight and do not have the usual flare at the outer limits. This is important because it means less background interference from stations operating on either side of the one to which the

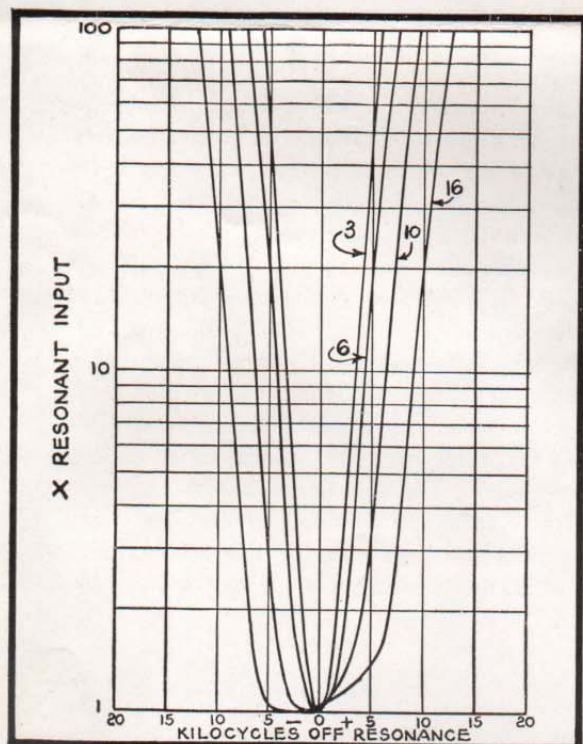


Fig. 1—Above curves were taken at four positions of the band width control to provide an idea as to how the band width changes. Selectivity is not limited to the above values but can be adjusted to any point between the limits of curve 3 and curve 16.

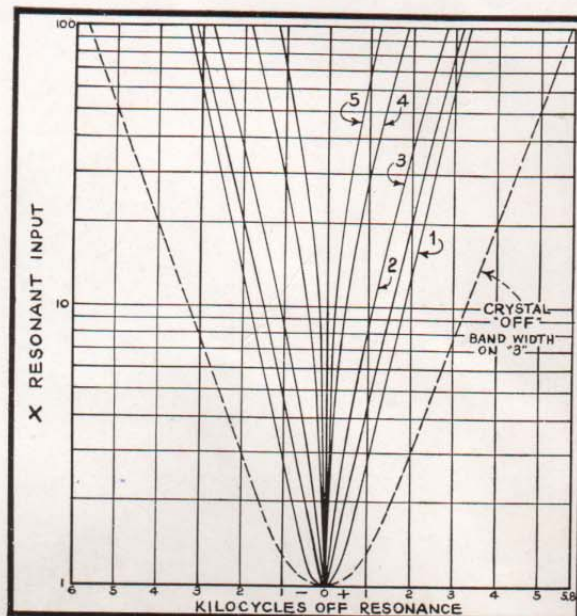


Fig. 2—The five curves shown above represent the various fixed points of selectivity to which the crystal can be adjusted. The first three curves are for reception of voice and music. The remaining two curves are for code reception. It should be noted that these curves fill the gap between maximum crystal selectivity and maximum band width selectivity as shown in Fig. 1.

receiver is tuned. The curves illustrated were taken at the intermediate frequency and will maintain throughout the entire tuning range of the receiver except at the low frequency end of the broadcast band where the selectivity of the R.F. stages has a very slight narrowing effect.

In Fig. 2, we have curves for the high selectivity range of the "Super-Pro". These curves were taken with the band width control in the most selective position. There are five curves in Fig. 2 and each represents a fixed point on the variable crystal selectivity control. Here we have a range of selectivity intended for use in crowded short wave broadcast and amateur bands. Positions No. 1, 2, and 3 of the crystal selectivity control are for receiving voice or music where interference is extremely bad. Positions 4 and 5 are for code reception where single signal reception is desired. The phasing control of the filter is adjusted to eliminate heterodynes when the crystal filter is in use.

This new variable crystal filter is an exclusive HAMMARLUND development and will be found only in HAMMARLUND receivers. Wide range of selectivity in the Series 200 "Super-Pro" assures the operator of the best possible fidelity regardless of the amount of interference present. Also, selectivity can be adjusted to permit full use of the tremendous amount of sensitivity available in the "Super-Pro" even in extremely crowded short wave bands.



# SERIES "200" SUPER PRO MODELS — PRICES

Code	Type	Tuning Range	Speaker	List Price
SP-210-X	Crystal	15- 560 Meters	Jensen 10" Dynamic	\$465.00
SPR-210-X	Crystal Rack	15- 560 Meters	Jensen 10" Dynamic	482.50
SP-220-X	Crystal	15- 560 Meters	Jensen 12" High Fidelity	490.00
SPR-220-X	Crystal Rack	15- 560 Meters	Jensen 12" High Fidelity	507.50
SP-210-SX	Crystal	7½- 240 Meters	Jensen 10" Dynamic	465.00
SPR-210-SX	Crystal Rack	7½- 240 Meters	Jensen 10" Dynamic	482.50
SP-220-SX	Crystal	7½- 240 Meters	Jensen 12" High Fidelity	490.00
SPR-220-SX	Crystal Rack	7½- 240 Meters	Jensen 12" High Fidelity	507.50
SP-210-LX	Crystal	*15-2000 Meters	Jensen 10" Dynamic	465.00
SPR-210-LX	Crystal Rack	*15-2000 Meters	Jensen 10" Dynamic	482.50
SP-220-LX	Crystal	*15-2000 Meters	Jensen 12" High Fidelity	490.00
SPR-220-LX	Crystal Rack	*15-2000 Meters	Jensen 12" High Fidelity	507.50
*See Note				
PSC-10	10" speaker cabinet to match receiver			8.50

Above prices cover 110-115-125 volt, 50 to 60 cycle models with tubes, crystal, and speaker. Receiver and power supply enclosed in wrinkle finished table type metal cabinets. Special models for 50-60 cycles with universal type power supply tapped for 115, 125, 140, 230, and 250 volts, also available at no increase in price. Twenty-five cycle models, \$20.00 additional.

\* In this model, the 1000 to 2000 meter band is substituted for the 60 to 120 meter band.

Receiver in cabinet measures 21½" wide, 15¼" deep, and 12¼" high. Power supply in cabinet measures 13" wide, 7⅝" deep, and 8½" high. Rack models fit standard 19" relay racks. Shipping weight approximately 110 pounds.

Licensed under RCA and Hazeltine Patents

**LAFAYETTE RADIO**  
RADIO, WIRE TELEVISION INC.  
110 FEDERAL ST., BOSTON MASS.  
HUB. 0474

Printed in U. S. A.

WRITE FOR COMPLETE DETAILS

Form No. S-210-2

**THE HAMMARLUND MANUFACTURING CO., INC.**  
**424-438 West 33rd Street, New York**