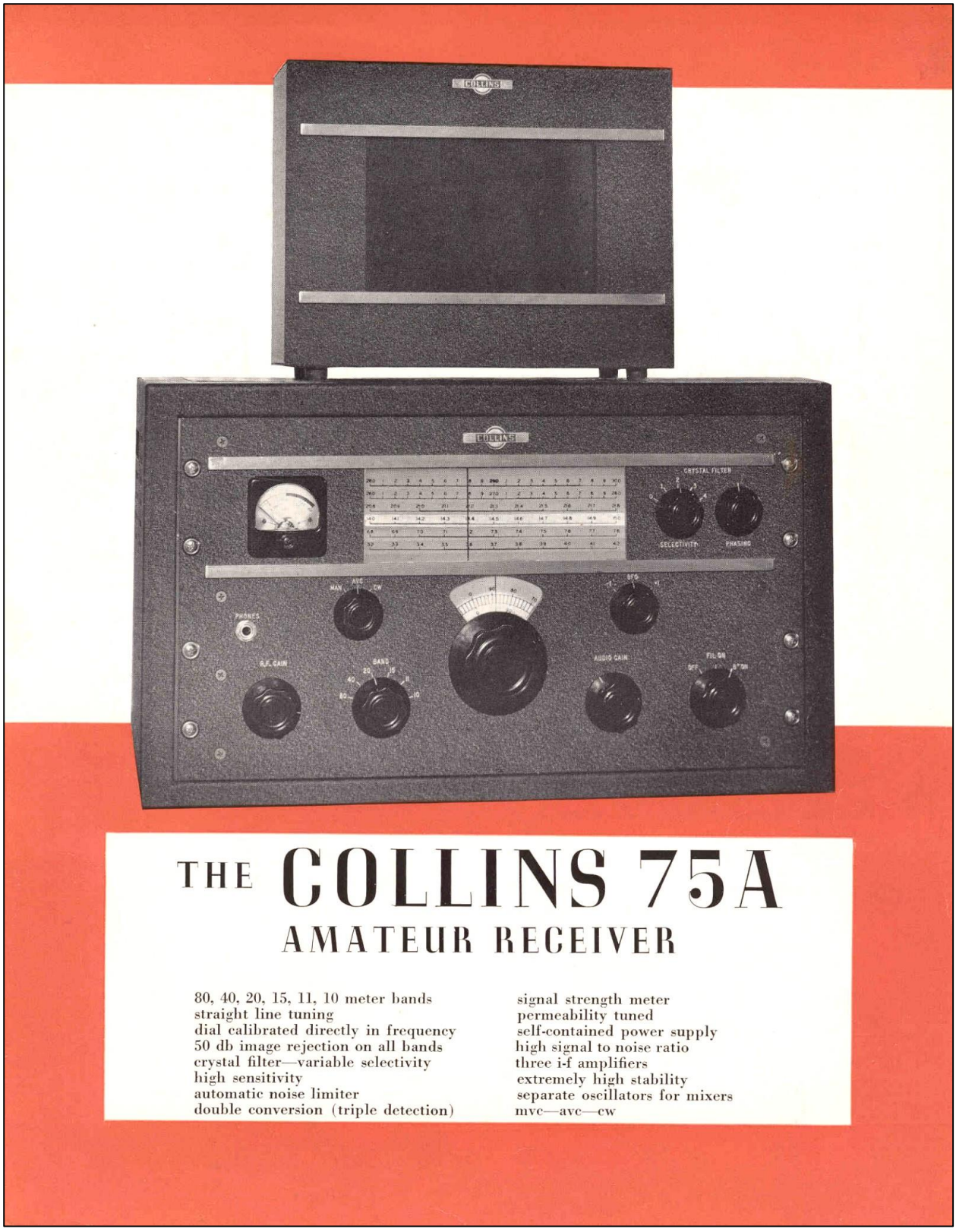


THE COLLINS 75A
AMATEUR RECEIVER

80, 40, 20, 15, 11, 10 meter bands
straight line tuning
dial calibrated directly in frequency
50 db image rejection on all bands
crystal filter—variable selectivity
high sensitivity
automatic noise limiter
double conversion (triple detection)
signal strength meter
permeability tuned
self-contained power supply
high signal to noise ratio
three i-f amplifiers
extremely high stability
separate oscillators for mixers
mvc—avc—cw

The 75A is the first really new amateur receiver since the advent of the superheterodyne circuit. Even with the addition of noise limiters and crystal filters, conventional receiver design has lacked any basic improvement. Recognizing the limitations of standard receivers, especially at higher frequencies, Collins engineers were determined to design a new and modern amateur receiver. With no restrictions imposed by prewar models that must be continued, no investment in tools and dies to be protected, and no urging to place a product on the market until satisfactory in every detail, they were in an ideal position to design everything just as it should be.

And they did. The new and exciting 75A is the result. It is modern in every respect, embodying recently developed and proved electrical circuits and mechanical design. It stands alone it its field in that it performs equally well *on all amateur bands.* Extreme stability and precise calibration assure visual tuning accurate to within 1 kc at twenty-one megacycles.

You will enjoy tuning this receiver, from the moment you touch the controls. Its instant response and smooth feel eliminate the usual "getting on to it." You can operate the 75A correctly from the first.

This receiver is engineered specifically for amateurs. It reflects Collins' successful experience in the design and manufacture of highest quality communication equipment for amateur, commercial, and military applications. It contains many desirable features that are offered in no other receiver.

CIRCUIT

The double conversion circuit of the 75A employs fourteen tubes, including a rectifier. The use of double conversion avoids the compromise always made in conventional receivers, i.e., a high i-f is desirable for image rejection and a low i-f is best for optimum selectivity. The 75A uses two intermediate frequencies and has both features. Because of the high frequency of the first i-f, only one stage of r-f amplification is needed to give extremely high image rejection. Additional stages are unnecessary and unwarranted. Following the r-f stage, the incoming signal is mixed with the output of a crystal oscillator to produce the first i-f. The first i-f is amplified and mixed with the output of a variable frequency oscillator to produce a 500 kc second i-f. The crystal filter is incorporated into the second i-f circuit. The audio is then removed from the carrier, passed through the automatic noise limiter, amplified, and fed to loudspeaker or headphones. BFO output is applied to the second i-f. AVC voltage is obtained from the same point, and applied to the controlled r-f and i-f stages.

CONTROLS

The following controls are on the front panel to provide complete operation of the receiver:

tuning control	on-off-standby switch
bandswitch	crystal selectivity switch
r-f gain control	crystal phasing control
audio gain control	AVC-manual-CW switch
CW pitch control	

Sensitivity and zero-adjust controls for the S-meter are inside the cabinet. Two terminals are located at the rear of the cabinet for connection to an external receiver disabling relay or switch.

FREQUENCY COVERAGE

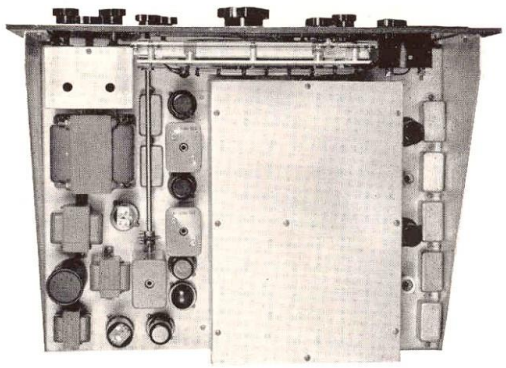
80 meters--3.2-4.2 mc	15 meters--20.8-21.8 mc
40 meters—6.8-7.8 mc	11 meters--26.0-28.0 mc
20 meters--14.0-15.0 mc	10 meters--28.0-30.0 mc

DIAL

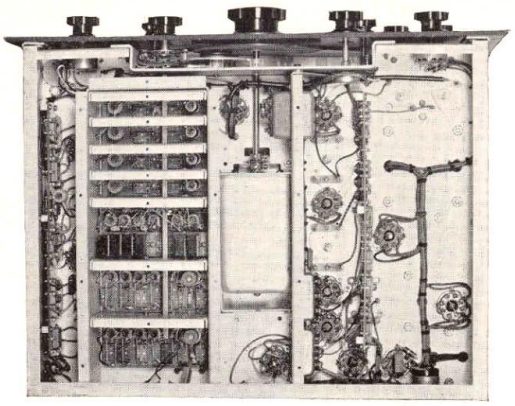
The 75A utilizes a new and different dial arrangement. Only the band in use is lighted. Frequency reading is easy, quick, and accurate.

BANDSPREAD

An entirely new system of permeability tuning provides linear calibration on all bands. Ten turns of the vernier tuning dial cover the ranges shown above. Each division of the vernier dial (which has 100 divisions) represents 1 kc on 80, 40, 20 and 15 meters, and 2 kc on the 11 and 10 meter bands.



Top inside view, showing clean construction.



Neat wiring, complete shielding, and careful component layout contribute to superior performance and attractive appearance.

ACCURACY and STABILITY

Three factors contribute to very high accuracy and stability—(1) the use of precision quartz crystals in the first conversion circuit, (2) the inherent accuracy and stability of the v.f.o. in the second conversion circuit, and (3) linearity and absence of backlash in the tuning mechanism. In order to take advantage of this precision, a secondary frequency standard, continually checked against WWV, is utilized in the factory calibration. You can rely upon the 75A being correct to within 1 dial division under all normal variations in operating conditions.

The stability is such that on CW reception extreme variation in the supply voltage causes a change of only a few cycles in the note. Furthermore, the CW note is absolutely independent of all except the tuning controls. Physical shock will not disturb the frequency unless the shock is severe enough to change the dial settings. This outstanding stability is available as soon as the receiver is turned on — no long warm-up period is necessary. Compare these characteristics with those of other receivers!

IMAGE AND IF REJECTION

The modern circuit design of the 75A has inherently high rejection to spurious frequencies. Image rejection is a minimum of 50 db, *even on* 10 *meters.* I-f rejection is 70 db minimum.

SENSITIVITY and SIGNAL TO NOISE RATIO

A 1 microvolt r-f signal provides normal output with approximately 6 db signal to noise ratio.

SELECTIVITY

The crystal filter controls provide a bandwidth that is variable in 5 steps from 4 kc to 200 cycles at 2X down (6 db down from the peak of the resonant frequency). Detuning is negligible. You will like the ease with which the crystal filter is adjusted.

AUTOMATIC NOISE LIMITER

The highly effective noise limiter is a series type clipper circuit, continuously operated. It automatically adjusts itself to all operating conditions.

SIGNAL STRENGTH METER

The S-meter is calibrated from 1 to 9 in steps of approximately 6 db each, and for 20, 40, and 60 db above S9. Two external adjustments are provided, one for zero adjustment, and one for adjusting the sensitivity to compensate for variations in antenna installations.

AUTOMATIC VOLUME CONTROL

Constant output within 6 db is obtained for a change in r-f input from 5 to 50,000 microvolts. Avc is applied to the r-f stage, and three i-f stages.

ANTENNA COUPLING

The antenna input has low impedance, and will accommodate both balanced and unbalanced lines. Optimum performance is obtained when the impedance of the antenna or transmission line is between 50 ohms and 600 ohms.

AUDIO OUTPUT

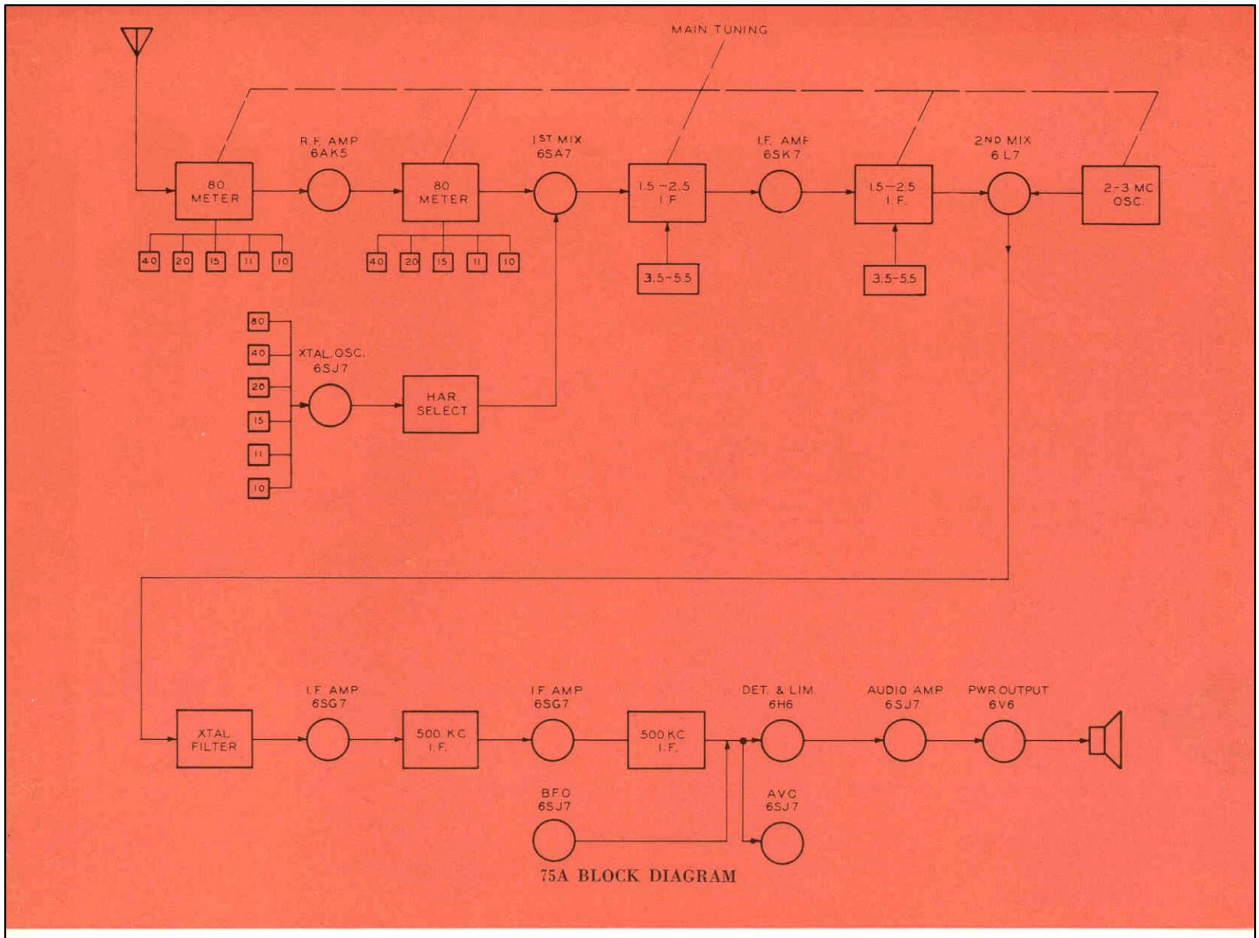
2.5 watts of output power are available. 500 ohm and 4 ohm terminals are provided, as well as a phone jack. The external speaker is mounted in a matching cabinet.

DIMENSIONS and CABINET DESIGN

21⅛″ wide, 12¼″ high, 13⅞″ deep. The chassis is mounted on a standard 19″ panel which can be removed from the cabinet and mounted in a standard rack.

POWER SOURCE

The power supply is self-contained and well filtered. It requires a 115 volts a-c, 50/60 cps source.



75A BLOCK DIAGRAM

OTHER COLLINS EQUIPMENT FOR AMATEURS

30K transmitter—500 watts input on CW, 375 watts on phone, 6 bands, bandswitching, v.f.o. control, floor model.

32V transmitter—150 watts input on CW, 120 watts on phone, 6 bands, bandswitching, v.f.o. control, table model.

70E-8 v.f.o.—precision unit, 10 volts output, 1600 kc to 2000 kc range, linear tuning.

310B-1—20 watt v.f.o. all band exciter.

310C-1—80 meter frequency control unit.

310C-2—Same as 310C-1, but with power supply.

FOR RESULTS IN AMATEUR RADIO, IT'S . . .

COLLINS

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