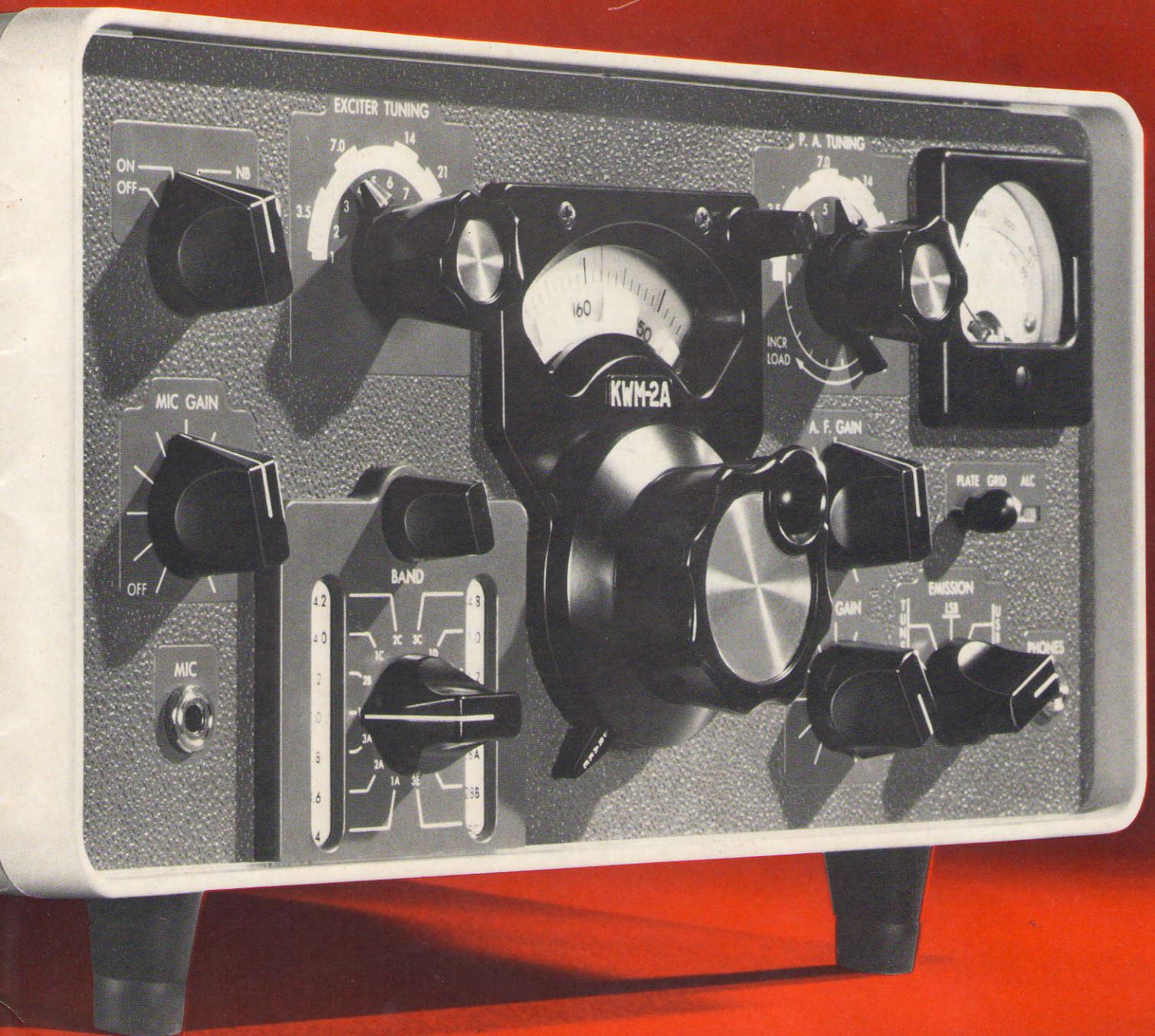


# Collins Amateur Equipment



# KWM-2A



The KWM-2A leads the field with the following features:

**Filter-Type SSB Generation**, providing unsurpassed performance on both transmit and receive.

**Automatic Load Control** to keep the signal level at rated PEP, resulting in increased average talk power.

**Inverse RF Feedback** to improve linearity and reduce distortion products, giving the cleanest signal on the air.

**Permeability-Tuned Variable Oscillator** with linearity and stability providing the best frequency calibration available.

**One kHz Division** on all bands, eliminating frequency searching and allowing you to meet anyone on sked, on any band, 80 through 10 meters.

# Transceiver

The KWM-2A is unmatched in performance and dependability for mobile and fixed station applications.

The KWM-2A power input is 175 watts PEP on SSB or 160 watts on CW. It transmits on voice or modified break-in CW. An additional crystal board permits the operator to switch-select up to 14 optional crystals which can be outside the amateur bands. Frequencies near range edges may require trimmer adjustment for proper operation. The KWM-2A can be used for RTTY when a 516F-2 Power Supply and external cooling air are employed.

The transceiver is finished in light gray enamel with a simulated leather front panel to match the S/Line.

Compactness and efficiency of the KWM-2A are achieved through Collins' advanced design in which all tuned circuits and several tubes function in the dual role of transmitting and receiving. The same oscillators, Mechanical Filter, and RF amplifier serve both the transmitter and receiver. CW break-in and sidetone monitoring circuits are built in.

Easily accessible controls on the front panel of the KWM-2A include the OFF-ON-NB-CAL Switch, EXCITER TUNING, ZERO SET, PA TUNING, LOADING, MIC GAIN, BAND Switch, AF GAIN, RF GAIN, EMISSION, and METER Switch.

## Specifications

### FREQUENCY RANGE:

80 meters — 3.4-3.6 MHz, 3.6-3.8 MHz, and 3.8-4.0 MHz.

40 meters — 7.0-7.2 MHz and 7.2-7.4 MHz.

20 meters — 14.0-14.2 MHz and 14.2-14.4 MHz.

WWV — 14.8-15.0 MHz.

15 meters — 21.0-21.2 MHz, 21.2-21.4 MHz, and 21.4-21.6 MHz.

10 meters — 28.5-28.7 MHz.

With optional crystals any 200 kHz range can be tuned from 3.4 to 30.0 MHz except 5.0 to 6.5 MHz.

**MODE:** SSB (either sideband selectable), CW, or RTTY with 516F-2 power supply and external cooling air.

**TYPE OF SERVICE:** SSB continuous; CW 50% duty cycle.

**POWER REQUIREMENTS:** Power can be delivered by an external supply such as the 516F-2, PM-2, MP-1, or 516E-2 which must furnish 800 v dc at 230 ma; 285 v dc at 210 ma; 6.3 v at 11 amps, and from -55 to -80 v dc with no current requirement. Heater supply may also be 12.6 v at 5.5 amps or 24 v at 2.75 amps. Reduced final plate voltage and current typical of mobile installations will reduce power output specifications. With the 516F-2, power consumption is approximately 190 watts in receive, 430 watts in lock-key, and 290 watts normal voice transmit.

**PLATE INPUT:** 175 watts PEP on SSB;

160 watts on CW.

**POWER OUTPUT:** 3.4-15 MHz, 100 watts PEP; 15-25 MHz, 90 watts PEP; 25-30 MHz, 80 watts PEP into 50 ohms.

**HARMONIC AND OTHER SPURIOUS RADIATION:** Carrier suppression -50 db; unwanted sideband -50 db; oscillator feed-through and/or mixer products -50 db except -40 db at 3500 kHz. Second harmonic -40 db. Third order distortion -30 db.

**NOISE LEVEL:** 40 db below single tone carrier.

**CALIBRATOR:** 100 kHz crystal oscillator.

**FREQUENCY STABILITY:** Within 100 Hz during any one-hour period following 20 minute warm-up. Not more than 100 Hz with  $\pm 10\%$  line voltage variation.

**CALIBRATION ACCURACY:** 1 kHz after midband calibration.

**BACKLASH:** Not more than 50 Hz.

**VISUAL DIAL ACCURACY:** 200 Hz on all bands.

**OUTPUT IMPEDANCE:** Variable, 50 ohms nominal, capable of matching up to 2:1 VSWR.

**KEYING CHARACTERISTICS:** Keying is free of chirps and clicks. Break-in CW and sidetone provided.

**AUDIO INPUT:** High impedance microphone or 312B-4,-5 phone patch.

**AUDIO FREQUENCY RESPONSE:** 300-2400 Hz nominal, determined by Mechanical Filter.

**AUDIO COMPRESSION CHARACTERIS-**

**TICS:** ALC operates on IF and RF amplifier stages and is capable of 10 db compression.

**RF FEEDBACK:** Approximately 10 db of RF feedback around PA and driver for improved linearity.

**RECEIVER SENSITIVITY:** 0.5 uv for 10 db signal-plus-noise-to-noise ratio in amateur bands.

**RECEIVER SELECTIVITY:** 2.1 kHz nominal bandwidth at 6 db down; 4.2 kHz bandwidth at 60 db down as determined by Mechanical Filter.

**RECEIVER SPURIOUS RESPONSE:** Image rejection better than 40 db. Internal spurious below 1 uv equivalent antenna input.

**RECEIVER OUTPUT LEVEL:** 1.0 watt maximum.

**AUTOMATIC GAIN CONTROL:** The audio output level does not change more than 20 db as the input signal is changed from 10 uv to 1 v. Fast attack and slow release provide excellent AVC action on voice and CW.

**VIBRATIONS:** 2 g at 10-33 Hz.

**AMBIENT TEMPERATURE:** 0° -50° C.

**AMBIENT HUMIDITY:** 0%-90%.

**ALTITUDE:** 0-10,000 ft.

**PROTECTIVE DEVICES:** PA cage is interlocked.

**SIZE:** With feet — 14¾" W, 7¾" H, 14" D (37.47 cm W, 19.69 cm H, 35.56 cm D).

**WEIGHT:** 18 lbs., 3 oz. (8.25 kg).

# 75S-3C



The 75S-3C combines Collins' superior design and workmanship with unexcelled frequency stability, plus these other features:

**Single-Control Rejection Tuning** for 50-db nominal rejection of unwanted heterodynes and carriers.

**Variable BFO** in either CW or RTTY modes.

**Optional Mechanical Filters** for CW, RTTY, and AM.

**2.1-kHz Mechanical Filter** to assure sharp skirt selectivity for SSB. Can also be used for CW and RTTY.

**Zener Regulated Oscillators** for increased stability and less variance due to line voltage changes.

**3-Position AGC**, permitting selection of two delay time constants or AGC disable.

# Receiver

The Collins 75S-3C is a versatile receiver with exceptionally sharp selectivity and operation in any of four modes — SSB, CW, AM, and RTTY. For AM reception the passband can be optimized by the installation of an optional 3.1-, 4.0-, or 6.0-kHz Mechanical Filter. Two CW mode switch positions offer up to three degrees of selectivity in the CW/SSB function through use of optional plug-in filters.

The 75S-3C Receiver can be combined with the 32S-3A Transmitter and 312B-4 Station Control to make a completely integrated station. The 75S-3C, when used with the 32S-3A, is capable of transceiver-type operation with the receiver PTO controlling the transmitting frequency. The 75S-3C is also compatible with the Collins KWS-1, KWM-1, KWM-2, and KWM-2A Transceivers.

Coverage outside the amateur bands, or additional 10 meter coverage, can be obtained by plugging in appropriate crystals.

## Specifications

### FREQUENCY RANGE:

80 meters — 3.4-3.6 MHz, 3.6-3.8 MHz and 3.8-4.0 MHz.

40 meters — 7.0-7.2 MHz and 7.2-7.4 MHz.

20 meters — 14.0-14.2 MHz and 14.2-14.4 MHz.

WWV — 14.8-15.0 MHz.

15 meters — 21.0-21.2 MHz, 21.2-21.4 MHz and 21.4-21.6 MHz.

10 meters — 28.5-28.7 MHz.

With optional crystals any 200 kHz range can be tuned from 3.4 to 30.0 MHz except 5.0 to 6.5 MHz.

**MODE:** Selectable USB, LSB, CW or AM.

**TYPE OF SERVICE:** Selectable single sideband, CW, RTTY and AM, continuous.

**POWER REQUIREMENTS:** 115/230 v ac, 50-400 Hz. Power consumption is approximately 85 watts. Power can be provided by an external supply which delivers 185 v dc at 125 ma and -62 v dc at 5 ma. Filament power can be ac or dc as follows: 6-7 v at 5.5 amps, 12-14 v at 2.75 amps or 24-28 v at 1.4 amps.

**HARMONIC AND OTHER SPURIOUS RESPONSE:** Image rejection better than 50

db. Internal spurious signals below 1 uv equivalent antenna input.

**AUDIO NOISE LEVEL:** Not less than 40 db below 1 watt.

**CALIBRATOR:** 100 kHz crystal oscillator.

**FREQUENCY STABILITY:** Within 100 Hz during any one-hour period following 20-minute warm-up. Not more than 100 Hz with  $\pm 10\%$  line voltage variation.

**CALIBRATION ACCURACY:** 1 kHz after midband calibration.

**BACKLASH:** Not more than 50 Hz.

**VISUAL DIAL ACCURACY:** 200 Hz on all bands.

**SENSITIVITY:** 0.5 uv for 10 db signal-plus-noise-to-noise ratio in SSB mode.

**SELECTIVITY:** SSB — 2.1 kHz, 2:1 shape factor. CW — two switch positions and sockets; no filters supplied. AM — 5 kHz. Optional filters for 0.2, 0.5, 0.8, 1.5, 3.1, 4.0 or 6.0 kHz are available.

**VARIABLE BFO:** Tunes 452.35-458.35 kHz.

**AUTOMATIC GAIN CONTROL:** AGC threshold — 1.5-3.0 uv, 1.5 nominal. Selectable AGC time constant, Fast, Slow and Off. Attack time is 1 millisecond in

Pitch for CW reception can be varied by turning the BFO control on and adjusting the knob for the most pleasing beat note, with the desired signal centered in the filter passband. The calibration marks can be used to shift from high mark to low mark when copying RTTY.

When the BFO knob pointer is at the 0 reference mark, the BFO frequency is approximately the same as crystal BFO in USB position. With the knob in the off position, the crystal BFO is in operation.

RTTY operation requires a conventional converter and printer. Fine tuning in this mode is easy with the variable BFO.

The 75S-3C provides two HF crystal boards. A board for general coverage crystals is located on the top of the chassis, and the standard group of amateur band crystals is mounted in a board on the underside of the chassis. Frequencies near range edges may require trimmer readjustment for proper operation.

both Fast and Slow. Fast release time is 190 milliseconds. Slow release time is 600 milliseconds. Audio output level does not change more than 15 db as the input signal is changed from 10 uv to 100,000 uv.

**AUDIO OUTPUT LEVEL:** 1 watt at AGC threshold, 3 watts maximum.

**ANTENNA INPUT:** 50 ohms nominal  $\pm 50\%$ .

### AUDIO OUTPUT REQUIREMENTS:

Speaker — 3-4 ohms. Headphones — 500 ohms or higher.

**AUDIO DISTORTION:** Not more than 10% at 1 watt.

**MUTING:** Jack on rear apron requires ground-on-receive information from transmitter.

**AMBIENT TEMPERATURE:** 0°-50° C.

**AMBIENT HUMIDITY RANGE:** 0%-90%.

**ALTITUDE:** 0-10,000 ft.

**PROTECTIVE DEVICES:** 1 amp SB fuse in ac line.

**SIZE:** Receiver with feet — 14 $\frac{3}{4}$ " W, 7 $\frac{3}{4}$ " H, 12 $\frac{1}{2}$ " D (37.47 cm W, 19.69 cm H, 31.75 cm D).

**WEIGHT:** 20 lbs. (9.07 kg).

# 32S-3A



Unique performance features include:

**Dual Conversion** with the high frequency oscillator crystal-controlled, and low frequency oscillator variable, yielding excellent frequency stability.

**Automatic Load Control**, providing up to 10-db compression for higher average talk power.

**RF Inverse Feedback** for improved linearity and reduction of distortion products and splatting.

**CW Spotting Control** to zero beat 32S-3A frequency against a signal tuned on the receiver. The carrier is momentarily keyed in the low level stages without disabling the receiver. A level control facilitates zero adjustment.

**Collins Mechanical Filter**, providing clean, clear signals without additional audio filters, or special microphones.

# Transmitter

Collins 32S-3A is a highly flexible transmitter covering all the amateur bands between 3.4 MHz and 30.0 MHz. The 32S-3A is rated for a nominal output of 100 watts and power input to the final amplifier is rated at 175 watts PEP on single sideband and 160 watts on CW.

Simplified controls on the 32S-3A make tuning quick and precise. Front panel controls are: Power/MIC GAIN, CW CAL, FREQ CONTROL selector, EXCITER TUNING, BAND switching, VFO tuning, P.A. TUNING and LOADING, EMISSION mode selector, and a MET-ER switch which selects between ALC, P.A. Grid and P.A. Plate.

The extra large, finely calibrated VFO dial provides that extra measure of confidence when operating near the edges of the amateur bands while the VFO tuning mechanism itself is shaped to fit the hand and designed to minimize mechanical backlash.

The 32S-3A can also be adapted for RTTY operation because of the high degree of stability of the unit. For RTTY, the 516F-2 Power Supply and a source of external cooling air should be used.

## Specifications

### FREQUENCY RANGE:

80 meters — 3.4-3.6 MHz, 3.6-3.8 MHz and 3.8-4.0 MHz.

40 meters — 7.0-7.2 MHz and 7.2-7.4 MHz.

20 meters — 14.0-14.2 MHz and 14.2-14.4 MHz.

15 meters — 21.0-21.2 MHz, 21.2-21.4 MHz and 21.4-21.6 MHz.

10 meters — 28.5-28.7 MHz.

With optional crystals, any 200 kHz range can be tuned from 3.4 to 30.0 MHz except 5.0 to 6.5 MHz.

**MODE:** SSB (either sideband selectable), CW or RTTY with 516F-2 Power Supply and external cooling air.

**TYPE OF SERVICE:** SSB continuous; CW 50% duty cycle.

**POWER REQUIREMENTS:** Power can be delivered by an external supply such as the 516F-2 which must furnish 800 v dc at 230 ma; 285 v dc at 175 ma; 6.3 v at 6 amps; and from -55 v to -80 v dc with no current requirement. Heater supply may also be 12.6 v at 3.0 amps or 25.2 v at 1.5 amps.

With the 516F-2, power consumption is approximately 130 watts in standby; 400 watts in full lock-key; and 270 watts

in normal voice transmit.

**PLATE POWER INPUT:** 175 watts PEP on SSB; 160 watts on CW.

**POWER OUTPUT:** 100 watts PEP (nominal) into 50 ohms.

**HARMONIC AND OTHER SPURIOUS RADIATION:** Carrier suppression -50 db; unwanted sideband -50 db; oscillator feedthrough and/or mixer products -50 db except 3500 kHz, 40 db. Second harmonic -40 db. Third order distortion -30 db.

**NOISE LEVEL:** 40 db below single tone carrier.

**FREQUENCY STABILITY:** Within 100 Hz during any one-hour period following 20-minute warm-up. Not more than 100 Hz with  $\pm 10\%$  line voltage variation.

**CALIBRATION ACCURACY:** 1 kHz after midband calibration.

**BACKLASH:** Not more than 50 Hz.

**VISUAL DIAL ACCURACY:** 200 Hz on all bands.

**OUTPUT IMPEDANCE:** Variable, 50 ohms nominal, capable of matching up to 2:1 VSWR.

**CW SIDETONE:** Provision for monitoring keying in receiver. Sidetone level is adjustable.

Grid block keying for CW with adjustable keying characteristic from "soft" to "hard" is provided.

The 32S-3A comes equipped with the crystal sockets, crystals and bandswitch positions for eleven 200 kHz bands. Crystal sockets and bandswitch positions also are provided for two additional 200 kHz bands between 28 MHz and 30 MHz. A fourteenth position, corresponding to the WWV position on the receiver, can be used for an additional 200 kHz band in the 9.5-15.0 MHz range, if desired. Regulation of oscillator voltages insures high frequency stability.

An additional crystal board permits use of up to 14 additional crystals to provide general coverage of non-amateur frequencies. Front panel selection of receiver VFO or transmitter VFO provides optional transceiver operation at the flick of a switch when you use Collins 75S-3C.

While the 32S-3A provides ample RF power for excellent communication, it can be used without modification to excite the Collins 30L-1 or 30S-1 Linear Amplifier.

**KEYING CHARACTERISTICS:** Grid block keying is free of chirps and clicks. Keyed carrier used for CW keying. Envelope rise and decay time adjustable.

**AUDIO INPUT:** High impedance microphone or 312B-4,-5 phone patch.

**AUDIO FREQUENCY RESPONSE:** 300-2400 Hz nominal, determined by Mechanical Filter.

**AUDIO COMPRESSION CHARACTERISTICS:** ALC operates on IF and RF amplifiers and is capable of 10 db compression.

**RF FEEDBACK:** Approximately 10 db of RF feedback around PA and driver for improved PA linearity.

**AMBIENT TEMPERATURE:** 0°-50° C.

**AMBIENT HUMIDITY RANGE:** 0%-90%.

**ALTITUDE:** 0-10,000 ft.

**PROTECTIVE DEVICES:** Primary fuses provided in the power supply to be used with the equipment. The PA cage is interlocked; the 6.3 v ac output is fused.

**SIZE:** Transmitter with feet — 14 $\frac{3}{4}$ " W, 7 $\frac{3}{4}$ " H, 12 $\frac{1}{2}$ " D (37.47 cm W, 19.69 cm H, 31.75 cm D).

**WEIGHT:** 16 lbs. (7.26 kg).

# 30L-1



This linear amplifier is completely self-contained and designed for table-top use. It can also be easily transported in a CC-2 Carrying Case. The Collins 30L-1 features:

**Automatic Load Control**, allowing a high average level of signal and optimum power output from the amplifier, within the rated limits of distortion.

**RF Inverse Feedback** to reduce distortion products, giving cleanest signal on the air.

**Solid State Rectifiers**, resulting in heat reduction.

**Self-Contained Power Supply** with safety interlock circuits for grounding the high voltage when the cover is removed.

**Automatic Antenna Transfer** to permit the 30L-1 to be switched in or out of the circuit at will by operating the ON-OFF switch.

# Linear Amplifier

The Collins 30L-1 Linear Amplifier delivers 1000 watts PEP power input on SSB and 1000 watts average on CW on all bands. It can be driven by the Collins 32S-3A Transmitter, the Collins KWM-2A Transceiver, or most 70-100 watt exciters. Finished in the same attractive light gray as Collins' famous S/Line equipment and the KWM-2A, the 30L-1 has all the controls conveniently accessible on the front panel.

The 30L-1 provides SSB and CW and covers the 80, 40, 20, 15, and 10 meter bands. Provisions are made for general coverage use, too. Automatic load control provides maximum talking power without over-driving and distortion, plus a sharper signal.

The 30L-1 is a grounded grid linear amplifier using

four 811A triodes. They can be replaced without removing the unit from the cabinet. Since the 811A's are instantly heated, there is no delay in warm-up.

With the meter switch in tune position, the 30L-1 uses an exclusive comparator circuit which can be operated by simply adjusting the tuning and loading controls to zero the meter.

The 30L-1's RF and power supply compartment covers operate safety interlock switches. Cover removal during operation closes these switches and shorts the high voltage to ground.

The unit can be operated outside amateur band limits; however, retuning the input circuits may be necessary.

## Specifications

**FREQUENCY RANGE:** The 80, 40, 20, 15 and 10 meter amateur bands.

By retuning input circuit as necessary, the following general coverage bands can be accommodated:

### FREQUENCY BAND TOTAL COVERAGE

3.5 MHz	3.4-5.0 MHz
7.0 MHz	6.5-9.5 MHz
14.0 MHz	9.5-16.0 MHz
21.0 MHz	16.0-22.0 MHz
28.0 MHz	22.0-30.0 MHz

**MODE:** SSB or CW.

**TYPE OF SERVICE:** Attended operation SSB, continuous; CW, 5 min. key down, 15 min. off (standby).

**POWER REQUIREMENTS:** 115 v or 230 v, 50-60 Hz; CW, key closed, 1200 watts ac; SSB, no signal, 300 watts ac; SSB, speech signal, 550 watts ac.

**DRIVE POWER:** 70-100 watts for full output.

**PLATE POWER INPUT:** 1000 watts PEP on SSB; 1000 watts on CW on all bands.

**HARMONIC AND OTHER SPURIOUS RADIATION:** Second harmonic -40 db; third order distortion -30 db.

**NOISE LEVEL:** 40 db below single tone carrier.

**ALTITUDE:** 0-10,000 ft.

**PROTECTIVE DEVICES:** All removable

panels interlocked. Input line fused — 8 amps on each side.

**OUTPUT IMPEDANCE:** Variable. Nominally 50 ohms unbalanced with not more than 2:1 VSWR on the amateur bands.

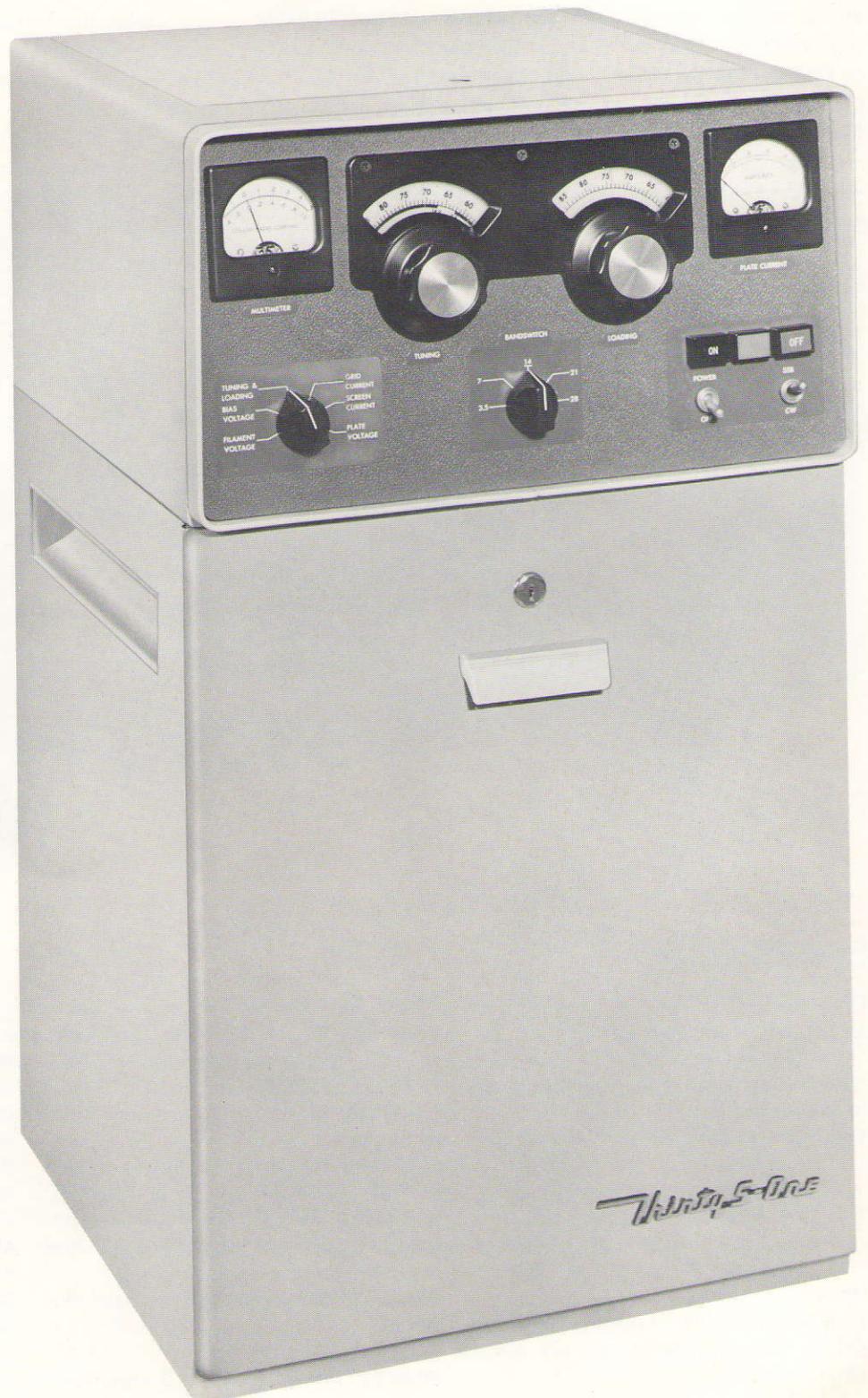
**AUDIO COMPRESSION CHARACTERISTICS:** ALC operates from the amplifier RF plate voltage. Threshold is adjustable and factory preset.

**AMBIENT TEMPERATURE:** 0°-50° C.

**AMBIENT HUMIDITY RANGE:** 0%-90%.  
**SIZE:** With feet — 14¾" W, 7¾" H, 14" D (37.47 cm W, 19.69 cm H, 35.56 cm D).

**WEIGHT:** 38 lbs. (17.24 kg).

# 30S-1



# Linear Amplifier

Add the Collins 30S-1 Linear Amplifier to your station and you will have the cleanest, strongest signal on the air. The 30S-1 Linear Amplifier features:

**RF Inverse Feedback** for better linearity.

**Instant Switching** between low and full kilowatt power.

**Quick and Accurate Tuning**, offering the amateur a bonus in ease of operation and optimum operating efficiency.

Requiring 70-100 watts driving power (supplied by the Collins 32S-3A Transmitter or KWM-2A Transceiver), the 30S-1 Linear Amplifier provides your SSB and CW station with the full legal power input for SSB (1 kw average) or 1 kw input for CW transmission.

All the 30S-1 controls are easily accessible on the front panel. This front panel design allows you to tune the 30S-1 swiftly, surely, and easily. With the push of a button you can switch instantly from the 100 watt power level of your transmitter to the full kilowatt output of the 30S-1; yet you retain high linearity and clean signal. The 30S-1 can also be tuned to frequencies outside of the amateur bands.

Automatic load control voltage from the 30S-1 is fed back to the transmitter, assuring you of maximum talking power without overdriving and distortion. Collins' automatic load control, in combination with inverse feed-

**Automatic Load Control**, assuring a clean, distortion-free signal.

**Cooling System** which operates quietly and efficiently.

**Simple and Direct Connection** between the 30S-1 and the exciter and station control unit.

**Protective Circuitry** which protects tubes and other components from damage due to mistuning or malfunction.

back, is a major design feature in the 30S-1 which gives you more talking power with a cleaner signal than any other linear amplifier in the amateur field.

The 30S-1 is a completely self-contained, single tube, grounded grid linear amplifier. The tube used is the commercially popular Eimac 4CX1000A.

A multimeter on the front panel is switchable to read tuning and loading, bias voltage, filament current, grid current, screen current, and plate voltage.

Correct tuning and loading is quick and easy on the 30S-1. With the multimeter selector switch in the Tuning and Loading position, comparator circuitry allows you to simply adjust the P.A. tuning and loading controls to zero the meter.

Conservatively designed around the highest quality components, the 30S-1 is rated for continuous duty on SSB and a 50% duty cycle on RTTY and slow-scan TV.

## Specifications

**MODE:** SSB, CW, RTTY, or SSTV.

**TYPE OF SERVICE:** Attended operation SSB continuous; CW 50% duty cycle.

**POWER REQUIREMENTS:** 115 v or 230 v, 50-60 Hz single phase, 2000 watts.

**DRIVE POWER:** 70-100 watts for full output.

**PLATE POWER INPUT:** Nominal average, 1000 watts on SSB; 1000 watts on CW.

**FREQUENCY RANGE:** The 80, 40, 20, 15 and 10 meter amateur bands. By retuning input coils as necessary, the follow-

ing general coverage bands can be accommodated:

### FREQUENCY BAND TOTAL COVERAGE

3.5 MHz	3.4-6.0 MHz
7.0 MHz	6.0-10.0 MHz
14.0 MHz	10.0-15.0 MHz
21.0 MHz	15.0-22.0 MHz
28.0 MHz	20.0-30.0 MHz

**HARMONIC AND OTHER SPURIOUS RADIATION:** Second harmonic -40 db; all others at least 50 db down. Third order distortion at 1000 watts PEP output 30

db below signal.

**NOISE LEVEL:** 40 db below single tone carrier.

**OUTPUT IMPEDANCE:** Variable; 50 ohms nominal, unbalanced with not more than 2:1 SWR.

**AMBIENT TEMPERATURE:** 15°-45° C.

**AMBIENT HUMIDITY RANGE:** 0%-90%.

**ALTITUDE:** 0-6,000 ft.

**SIZE:** 17" W, 30 $\frac{5}{8}$ " H, 18 $\frac{3}{4}$ " D (43.18 cm W, 77.79 cm H, 47.63 cm D).

**WEIGHT:** 160 lbs. (72.58 kg).

# Accessories

## 312B-3 SPEAKER

The 312B-3 contains a 5" x 7" (12.7 cm x 17.78 cm) speaker and connecting cable and is styled to match the S/Line and KWM-2A. Size: 10" W, 7 $\frac{3}{4}$ " H, 8" D (25.4 cm W, 19.69 cm H, 20.32 cm D). Weight: 4 lbs. (1.81 kg).



## 312B-4 SPEAKER CONSOLE

The 312B-4 integrates the 75S-3C, 32S-3A, 30S-1 and accessories into an operating system. The KWM-2A and 30S-1 can also be combined into an operating system by the 312B-4. A speaker, RF directional wattmeter with 200 and 2000 watt scales, and a phone patch are included in the console. Size: 10" W, 7 $\frac{3}{4}$ " H, 12 $\frac{1}{4}$ " D (25.4 cm W, 19.69 cm H, 31.12 cm D). Weight: 8 $\frac{1}{2}$  lbs. (3.86 kg).



## 312B-5 VFO CONSOLE

Designed for use with the KWM-2A in fixed station operation, the 312B-5 provides limited separation of receive and transmit frequencies, phone patching facilities and a directional wattmeter. It includes a 5" x 7" permanent magnetic speaker. The PTO control selector can be set as follows: (1) Receive KWM-2A, Transmit 312B-5; (2) Transceive KWM-2A, (3) Transceive 312B-5. Other control functions are Voice Operated, Receive Only, Transmit Only, Phone Patch On-Off, and Station Mute. Cables are furnished for connections to the KWM-2A. Size: 10" W, 7 $\frac{3}{4}$ "

H, 12 $\frac{1}{4}$ " D (25.4 cm W, 19.69 cm H, 31.12 cm D). Weight: 8 $\frac{1}{2}$  lbs. (3.86 kg).



## 516F-2 AC POWER SUPPLY

The 516F-2 can be used with the 32S-3A and KWM-2A, supplying all voltages for them; 115 v, 50-60 Hz, 400 Hz with minor changes. Size: 10" W, 7 $\frac{3}{4}$ " H, 12" D (25.4 cm W, 19.69 cm H, 30.48 cm D). Weight: 28 lbs. (12.7 kg).



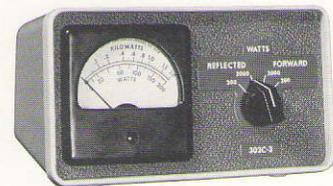
## 180S-1 ANTENNA TUNER

The 180S-1 is basically a 1 kw pi network for matching various antenna impedances to a 50 ohm coaxial transmission line in the range of 3-30 MHz. In most cases it is used as an L network, but when the L network cannot match the desired antenna, the complete pi circuit is used. The variable vacuum capacitor in the output circuit can be connected either in series or shunt with the antenna. The 180S-1 is useful for tuning trailing wires on large aircraft.



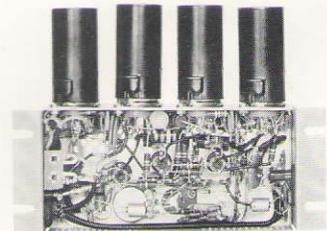
## 302C-3 DIRECTIONAL WATTMETER

The 302C-3 is valuable for checking the antenna system. It measures forward and reflected RF power. Two scales are provided: 0-200 watts and 0-2000 watts accommodating both high and low power transmitters. The 302C-3 is contained in two units: the remote coupler for connecting into a 50 ohm transmission line and the meter panel.



## 136B-2 NOISE BLANKER

The 136B-2 is designed for use with the KWM-2A under mobile operating conditions. This noise blanker provides effective reduction of impulse-type noise. It differs from simple audio clipping circuits or series-type limiters by silencing ahead of the selective sideband filters. All necessary hardware and instructions are furnished for simple installation into the KWM-2A. The 136B-2 requires a 40 MHz antenna which can be used as a standard whip for the car radio. Weight: 1 $\frac{1}{4}$  lbs. (0.567 kg).



## 351D-2 MOBILE MOUNT

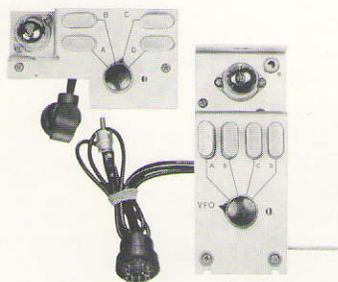
The 351D-2 provides secure mounting for the KWM-2A in most automobiles. Cantilever arms fold out of the way when the KWM-2A is removed. The connector at the right end is the power plug; the connector at the left end can be used for control of antennas having band switching circuit-

ry. Cables 20 feet in length are attached to each plug.



### 399B NOVICE ADAPTERS

The 399B-4 is a crystal-controlled oscillator which is used for frequency control in place of the VFO in the 32S-3A Transmitter. Sockets are provided for four crystals which are selectable by switch. The 399B-5 is used in place of the VFO to control the transmit frequency in the KWM-2A Transceiver. The receiver remains PTO tuned. Crystals are not provided.



### DL-1 DUMMY LOAD

The DL-1 is a 100 watt resistive load which can be used for various tuning functions without putting the transmitter on the air. The DL-1 can be switched in and out of the circuit by a front panel switch or can be remotely controlled by the addition of another switch in the operating position. This unit reduces tune-up and testing QRM and requires no connecting or disconnecting of wires prior to operation. Weight is 2 lbs. 14 oz. (1.3 kg).



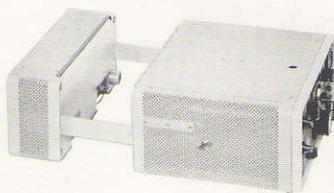
### MP-1 MOBILE POWER SUPPLY

The MP-1 converts a 12-volt automobile, aircraft or boat battery to the voltages required for the Collins KWM-1,-2 or KWM-2A. The MP-1 includes a high voltage supply for the transmitter PA, bias and a low voltage supply for the amplifier. Size: 5¾" W, 3¾" H, 11" D (14.61 cm W, 9.53 cm H, 27.94 cm D). Weight: 7½ lbs. (3.4 kg).



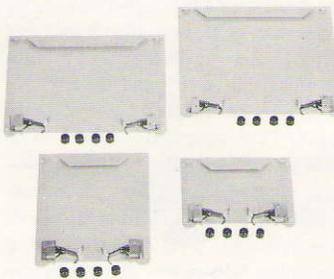
### PM-2 PORTABLE POWER SUPPLY

The PM-2 is a lightweight, limited duty cycle power supply providing voltages needed for the KWM-2A. The PM-2 quickly slides into place and connects to the rear of the KWM-2A, ready to operate in minutes from either 115 v ac or 220 v ac at 50-400 Hz as a complete portable SSB or CW station. Both transceiver and power supply can be packed in the lightweight CC-2 Carrying Case. A small auxiliary speaker is included in the PM-2 for emergency use. Size: 14¾" W, 7¾" H, 4" D (37.47 cm W, 19.69 cm H, 10.16 cm D). Weight: 13.5 lbs. (6.12 kg).



### 351E MOUNTING PLATES

The 351E can be used to secure the S/Line or KWM-2A equipments to bench or table in shipboard, airborne or vehicular installations. The 351E-1 will accommodate either the 75S-3C Receiver or the 32S-3A Transmitter; the 351E-2 will mount either the 516F-2 Power Supply or the 312B-5 Station Controls; the 351E-3 will mount the 312B-3 Speaker. The 351E-4 has two snap-in clamps for secure installation of the KWM-2A. The equipment can be easily unclamped for removal without the use of tools. The unit is removed by pulling forward and lifting from the mounting plate.



### 351R RACK MOUNTING ADAPTERS

The 351R-1 is a matching gray rack panel for mounting the 75S-3B,-3C, 32S-3,-3A, KWM-2,-2A, 30L-1, or 51S-1. The 351R-2 Rack Adapter is a panel for mounting the S/Line and KWM-2A accessories. The 516F-2, 312B-4 and 312B-5 can be mounted in the 351R-2. Both adapters are 8¾" H and 13-3/16" D (22.23 cm H and 33.5 cm D) behind the front panel. A supporting shelf holds the unit securely. Mounting hardware is finished.



### BANDPASS FILTERS

Plug-in filters are available for use in the 75S-3C Receiver to effectively reduce background noise by restricting the 455 kHz IF bandwidth to that necessary for communication. The F455FA series of Mechanical Filters is available in 500 and 800 Hz bandwidths for CW, 1500 Hz bandwidth for teletype, 2.1 kHz for SSB and 3.1, 4.0 or 6.0 kHz for AM applications.

The X455KQ-200 Crystal Filter with a 200 Hz bandwidth can be employed for maximum selectivity in CW.



### MM-1 MOBILE MICROPHONE

The Collins MM-1 is a pressure-operated dynamic microphone. This mike is engineered for maximum voice response, and its die-cast case is finished in brushed satin chrome. With its mounting button on the front, the MM-1 slips easily into a dashboard bracket supplied with the mike. When the MM-1 is removed from the dashboard bracket, the microphone is in position for instant transmission. A five-foot length of Coiled Kord with mike plug is supplied with the 22-ounce microphone. The MM-1 has a frequency response from 200-10,000 Hz and has an output level of -48 db.



### MM-2 MICROPHONE

The Collins MM-2 includes a high impedance reluctance microphone and single earphone which can be used in either a fixed station installation or with a mobile unit. The MM-2 has a frequency response from 100-7,000 Hz and an output level of -50 db. In mobile use, the earpiece and microphone unit permit the driver to operate his car with both hands while carrying out radio voice communication. Although it weighs only 3½ ounces (0.099 kg), the Collins MM-2 is built to withstand the strenuous demands of daily mobile operation. Its microphone boom has a 360° adjustment making it possible to angle the mike to the best pickup position. The MM-2 Microphone has a magnetic stray field shield to exclude unwanted noises. For optimum reception, an adjustable tone arm in the MM-2 pipes sound directly into the operator's ear, but does not cover the ear as conventional earphones do. The MM-2 is equipped with both mike and phone plugs.



### SM-3 DESK TOP MICROPHONE

The Collins SM-3 is a slender gray and brushed chrome desk-top unit that blends with other Collins station equipment. Featuring a push-to-talk switch built into the rubber-isolated base, the SM-3's omnidirectional characteristics provide excellent transmission. Its frequency response—200-3000 Hz—matches that of the S/Line and the KWM-2A. It has an output level of -53 db. It is equipped with a five-foot Coiled Kord; the swivel permits vertical adjustment of 60 degrees.



### CC-2 CARRYING CASE

The CC-2 is designed to hold the

components of a portable Collins SSB or CW station. The KWM-2A plus the PM-2 Power Supply, the KWM-2A alone, the 30L-1, or the 51S-1 can be transported in the case. The CC-2 is adapted from the Samsonite Silhouette and includes a shock-resistant interior. Weight: 9.5 lbs. (4.31 kg) empty.



### CC-3 CARRYING CASE

The CC-3 is a specially built case for accessory components of a portable Collins SSB or CW station. The CC-3 has the same styling features as the CC-2. A molded interior allows the CC-3 to accommodate a 312B-5 (or 312B-4) Station Control Console, a 516E-2 (28 v dc) or MP-1 (12 v dc) Power Supply, a 637T-2 Dipole Antenna, as well as a supply of spare tubes and fuses. Weight: 10 lbs. (4.54 kg) empty.



### 637T-2 ADJUSTABLE DIPOLE ANTENNA

The Collins 637T-2 antenna is an adjustable wire unit developed for portable HF installations. Weighing less than five pounds, the antenna can be erected by one man. The 637T-2 operates in the 3.4- to 30-MHz range. The antenna consists of two reels of phosphor-bronze wire rope stored in a cylindrical housing. For operation at a particular frequency, the ropes are pulled out to the correct length

as indicated by a frequency-calibrated dial. A built-in ferrite balun transforms the balanced dipole circuit to 50 ohms unbalanced.



### CP-1 CRYSTAL PACKET

The CP-1 contains a set of crystal grippers and all the crystals for operation of the S/Line receiver, the S/Line transmitter or the KWM-2A, throughout the complete operating range. Crystals not supplied for the range of 5.0 to 6.6 MHz and those already provided with the equipment. The packet is of a waterproof plastic containing a pouch for each crystal and one for the grippers. The complete packet can be fastened into the CC-2 Carrying Case.

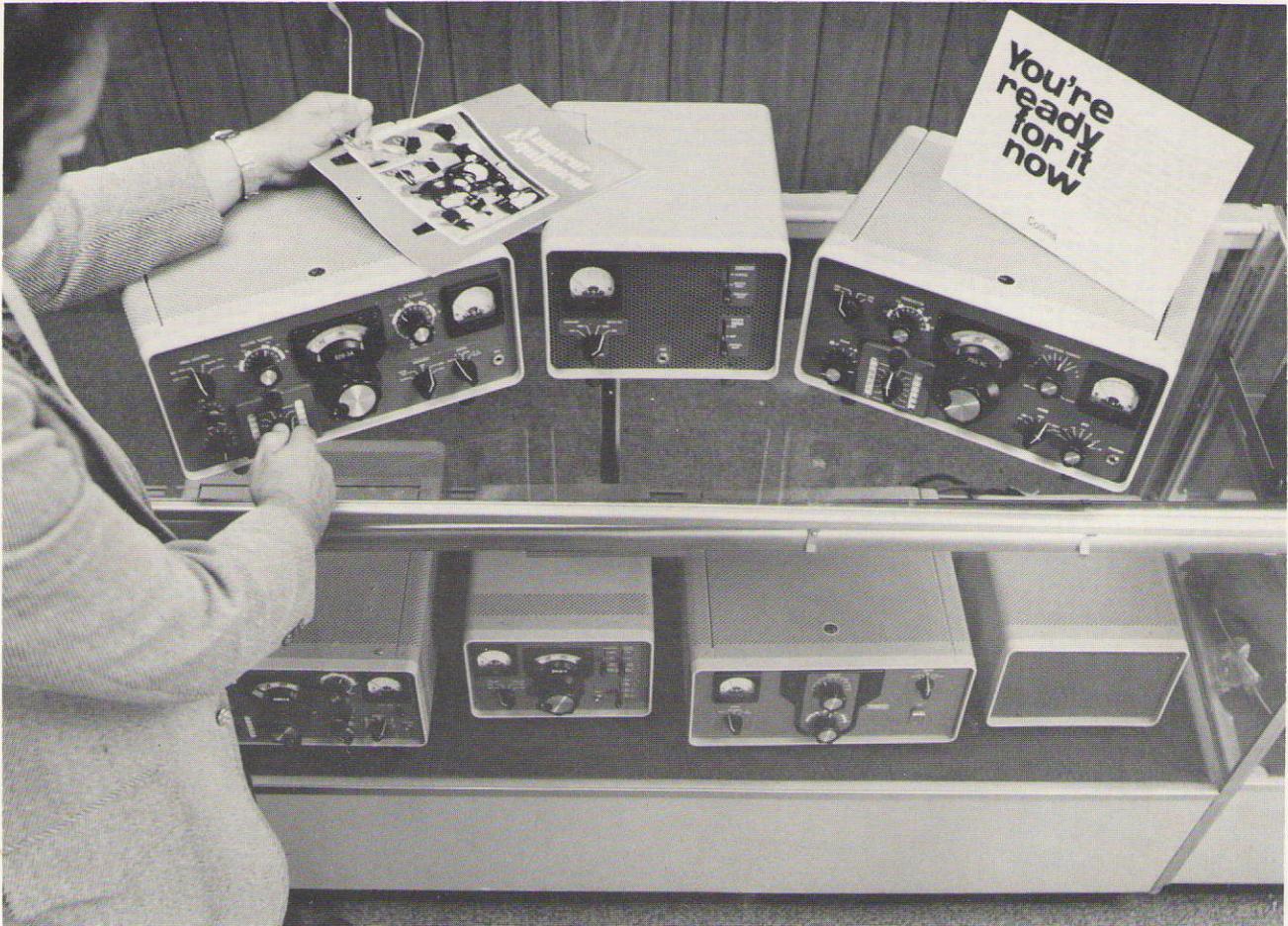
### 440E-1 CABLE

The 440E-1 is similar to the cable supplied with the Collins 351D-2 Mobile Mount. This cable is used to connect the KWM-2A with the MP-1 or 516E-2 Power Supply when the mobile mount is not used.

### 440F-1 CABLE

The 440F-1 is five feet in length and can be used to connect either the S/Line or the KWM-2A to the 516F-2 Power Supply, allowing the 30S-1 to be placed a greater distance from the S/Line and permitting greater flexibility of fixed station installations.

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