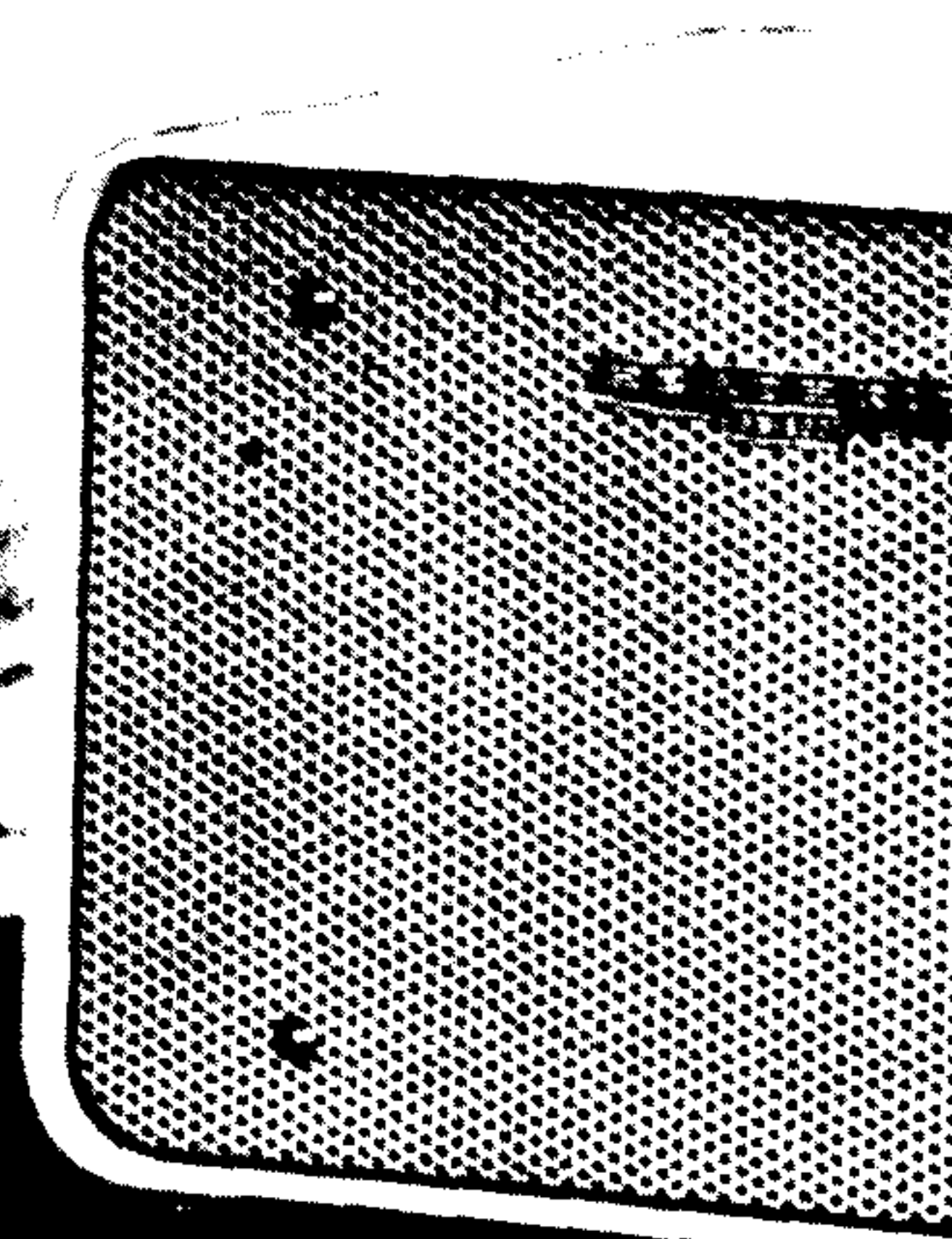
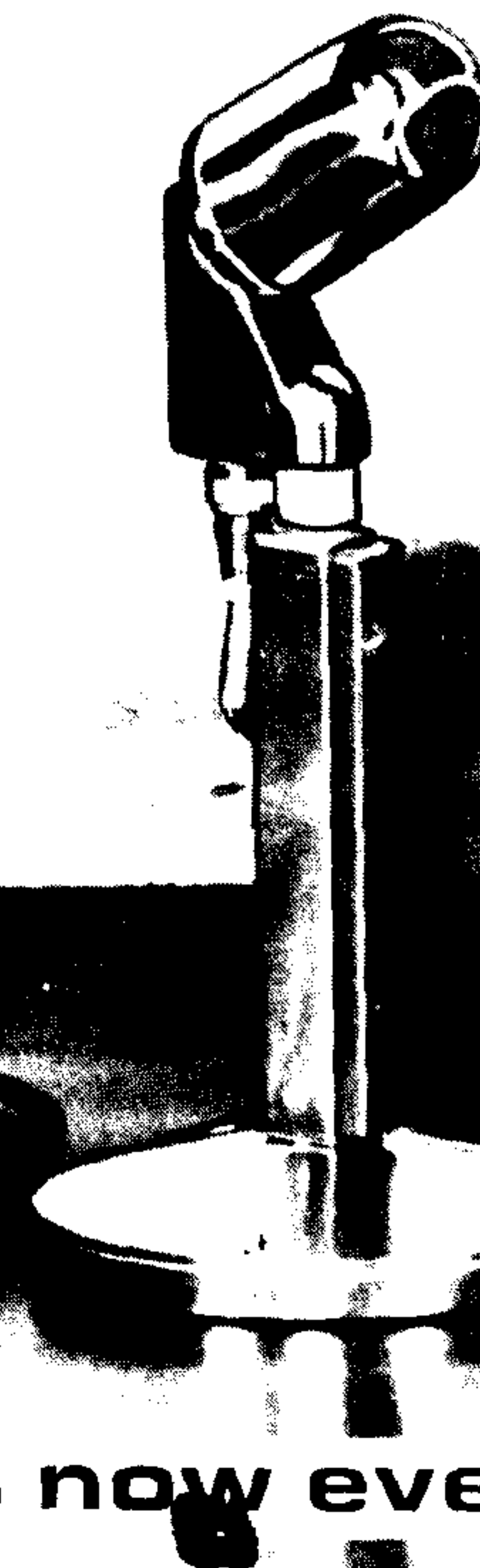
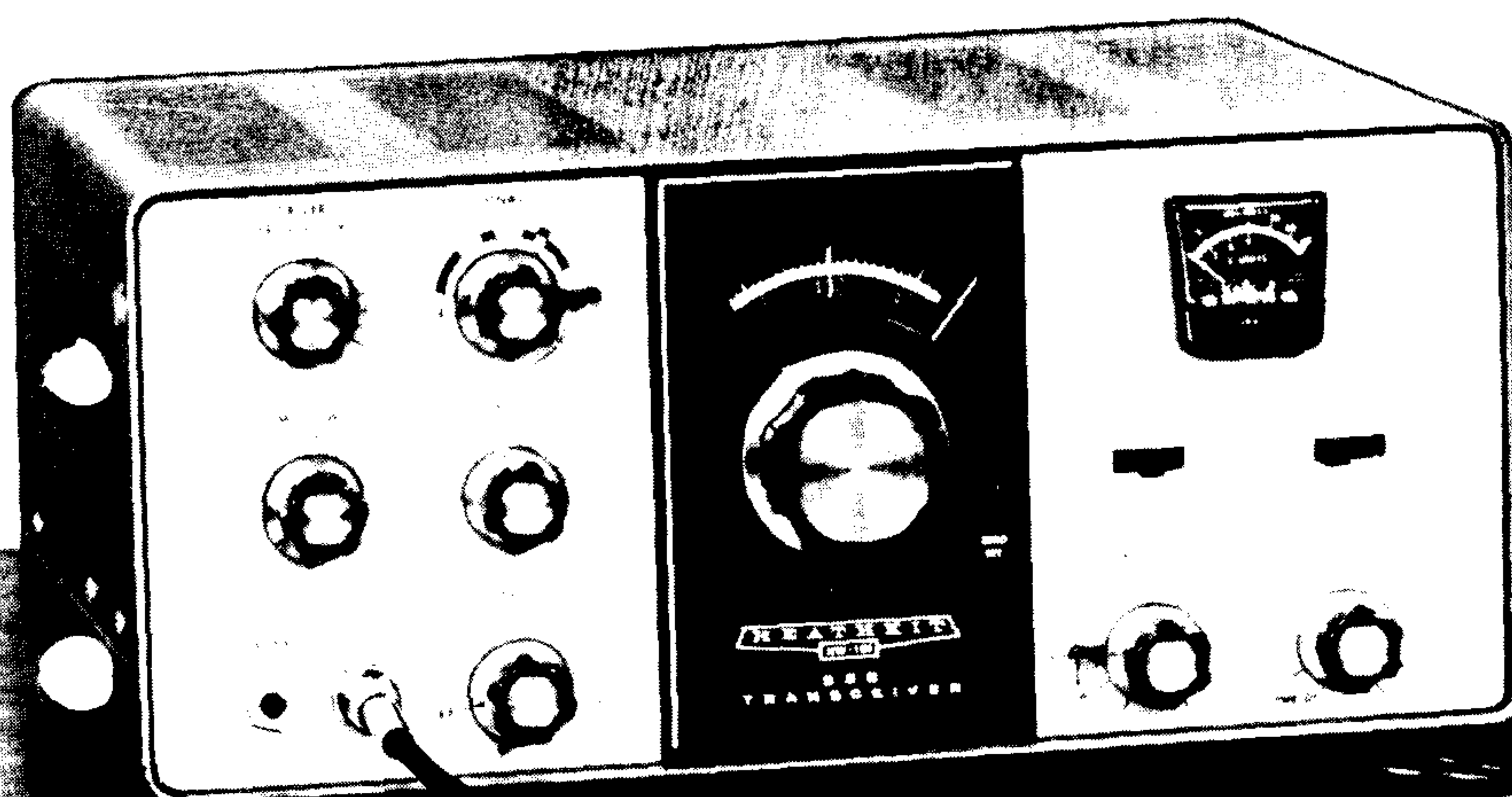




SPECIFICATIONS

MODEL HW-101

SSB TRANSCEIVER



the world's best low cost rig is now even better

Heath have done it again...by adding important new performance features to the world's most popular piece of gear – and keeping the low price. Here's the new HW-101 in detail.

Improved receiver circuitry. An outstanding receiver is an absolute necessity on today's crowded bands, and the HW-101 has what it takes to dig those signals out and keep your QSO going longer. Refinements in the already excellent HW-100 receiver result in sensitivity that's now better than $0.35 \mu\text{V}$ for 10 db S + N/N. Image & IF rejection are better than 50 dB. Compare those specs against the competition...few transceivers at any price offer as much...none other at this price.

Improved dial drive. A completely new planetary ball-bearing dial drive assembly provides a 36 to 1 knob to dial turning ratio...delivers 34 velvet-smooth knob revolutions per 500 kHz band segment. Couple this with new preselector circuitry and a thermal stabilized FET VFO with 5 kHz readout and you've got rock-solid, drift-free tuning from 80 through 10 meters. And the built-in 100 kHz crystal calibrator and zero reset button provide accurate, stable calibration.

Now – front panel selection of SSB or CW crystal filters. The HW-101 now has provision for a CW crystal filter, giving it the same remarkable CW performance as its famous big brother, the SB-102. The optional SBA-301-2 filter installs in minutes, giving razor sharp 400 Hz CW selectivity to carve away the QRM. Built-in 2.1 kHz SSB crystal filter provides superior SSB copy.

Power input consistent with maximum versatility at lowest cost. The HW-101 delivers a solid 180watts PEP SSB input...170watts CW...more than sufficient to get out with a good, healthy signal. This power level permits using the right tubes for the job – rugged, dependable, low cost, RF-designed 6146's – and means you don't have to sacrifice useful features to pay for increased power. And the HW-101 is ideal for driving a grounded-grid

linear, such as the Heathkit SB-220 or SB-200 for a really big signal. Carrier and unwanted sideband suppression is 45 dB down, third order distortion 30 dB down; RF compression (TALC) is 10 dB or better. Compare the HW 101 with other rigs for power versus features...you'll see that the HW 101 delivers a lot more versatility for a lot less cost.

"Extra cost options" at no extra cost! When Heath design a rig, they put in all the features and conveniences you need to do the job. The endless, extra cost options on other rigs are already in the HW-101. Make the comparison yourself. Complete VOX circuitry, including controls for sensitivity, delay and anti-trip...standard on the HW-101. Selectable upper or lower sideband on all bands...standard on the HW-101. 1 kHz CW sidetone...standard on the HW-101. Front panel switch selected metering of ALC/S units, relative power and plate current...standard on the HW-101. Full coverage of 10 meters...standard on the HW-101. Selectable SSB or CW crystal filter capability...standard on the HW-101. Front panel phone and microphone jacks for extra convenience...ALC input...spare rear panel jack for connection of auxiliary equipment. Put it all together and you've got the new HW-101...a lot more rig for a lot less money.

Fast enjoyable assembly. You build the entire rig...even the VFO...and the famous Heathkit manual makes it easy. Most components mount on nine circuit boards, and a wiring harness makes inter-connections fast and simple...point-to-point wiring is kept to an absolute minimum. Initial checkout is equally simple...all you need is a mike, dummy load and a VVM.

Run fixed or mobile. Heath offers a wide variety of fixed & mobile accessories that allow you to go from one type of operation to the other in minutes.

Check out the new HW-101. Compare the specs...compare the features...and try to compare the price. There isn't another rig made that offers as much solid capability at such low cost. Compare the detailed chassis photos, & specs then order your HW-101.

HEATH

Schlumberger

HEATH (GLOUCESTER) LTD
GLOUCESTER. GL2-6EE. ENGLAND

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

WWW.VINTAGE-RADIO.INFO

Two rugged, dependable, RF-designed 6146's in a completely shielded final

New receiver circuitry for increased sensitivity

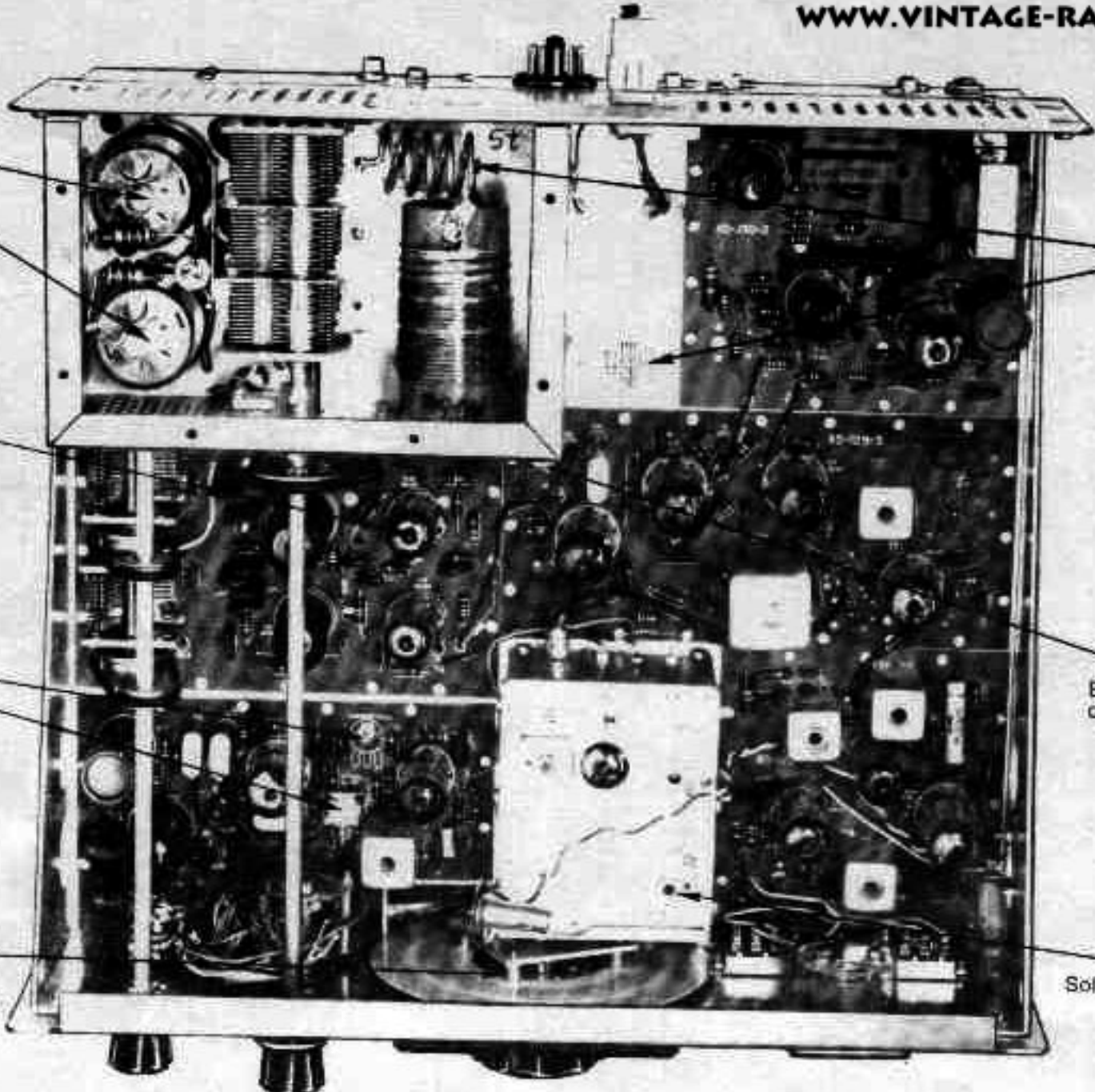
Carrier-null controls

New ball-bearing dial drive for smoother tuning

Quiet, enclosed relays

Built-in 100 kHz crystal calibrator

Solid-state FET VFO

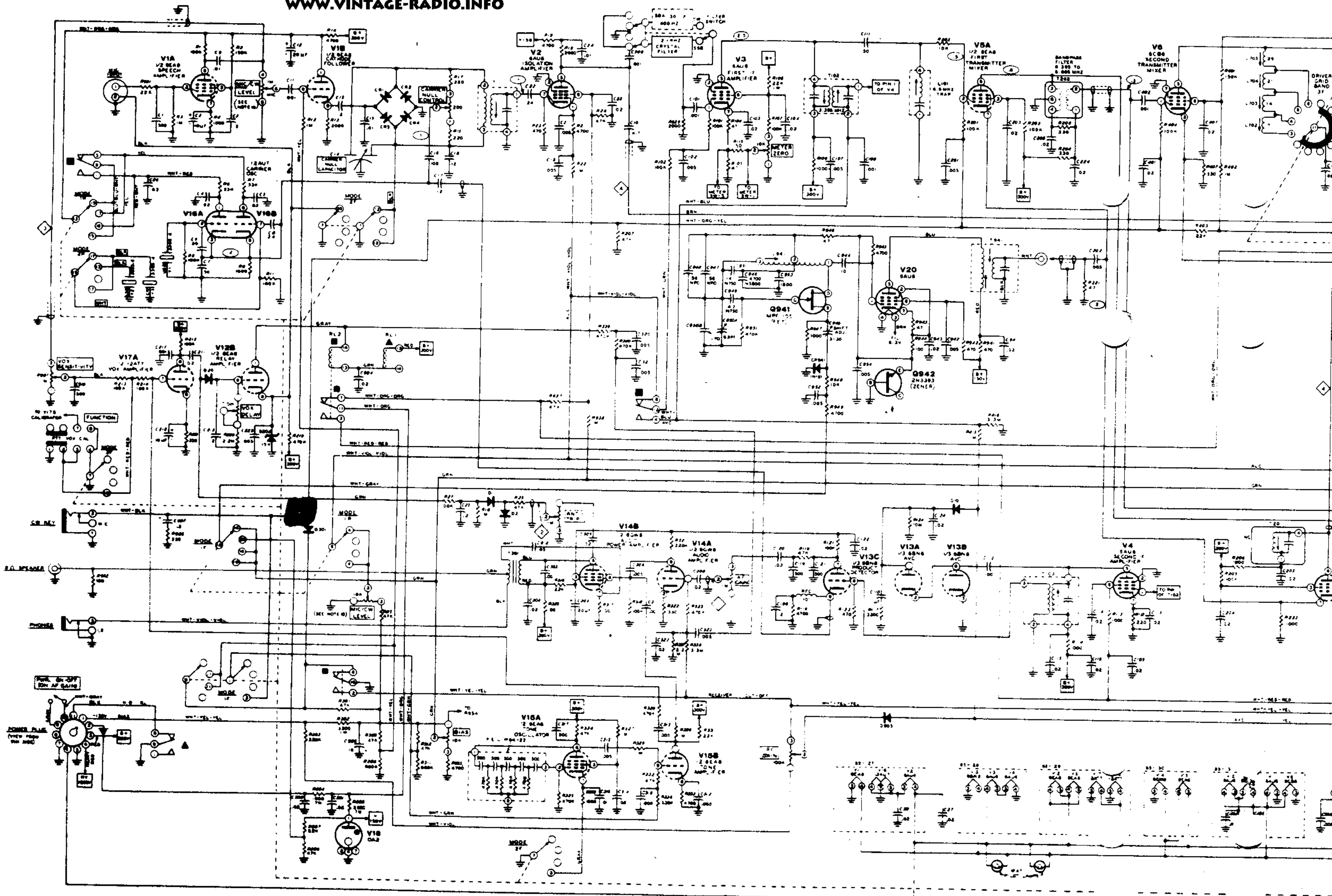


HW-101 SPECIFICATIONS

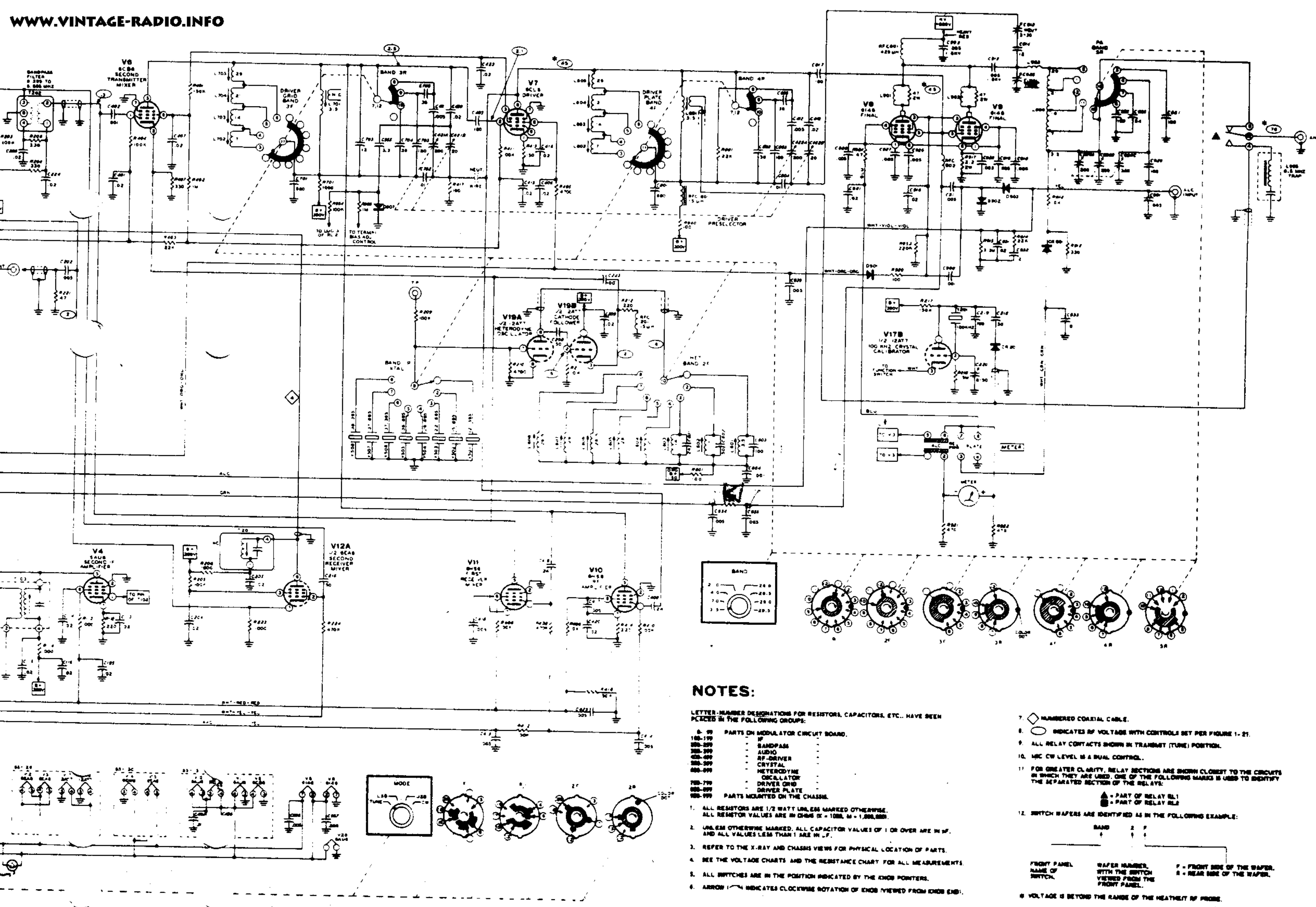
RECEIVER – Sensitivity: Less than .3 microvolt for 10 dB signal-plus-noise to noise ratio for SSB operation. **SSB Selectivity:** 2.1 kHz minimum at 6 dB down, 7 kHz minimum at 60 dB down (3.395 MHz filter). **CW Selectivity (With Optional SBA-301-2 CW Filter Installed):** 400 Hz minimum at 6 dB down, 2.0 kHz maximum at 60 dB down. **Power Output:** 2 watts with less than 10% distortion. **Spurious Response:** Image and IF rejection better than 50 dB. **TRANSMITTER – DC Power Input:** SSB, (A3J emission) 180 watts PEP (normal voice, continuous duty cycle). CW, (A1 emission) 170 watts (50% duty cycle). **RF Power Output:** 100 watts on 80 through 15 meters; 80 watts on 10 meters (50 ohm nonreactive load). **Output Impedance:** 50 ohm to 75 ohm with less than 2:1 SWR. **Oscillator Feedthrough or Mixer Products:** 55 dB below rated output. **Harmonic Radiation:** 45 dB below rated output. **Transmit-Receive Operation:** SSB, PTT or VOX, CW, provided by operating VOX from a keyed tone, using grid-block keying. **CW Side-Tone:** Internally switched to speaker or headphones in CW mode. Approximately 1000 Hz tone. **Microphone Requirement:** High impedance with a rating of -45 to -55 dB. **Carrier Suppression:** 45 dB down from single-tone output. **Unwanted Sideband Suppression:** 45 dB down from single tone output at 1000 Hz reference. **Emissions Not Possible Or Not Recommended:** A0, A2, A3B, A4 through A9, F0 through F9, and P0 through P9. **Third Order Distortion:** 30 dB down from two-tone output. **RF Compression (TALC*):** 10 dB or greater at .1 mA final grid current. **GENERAL – Frequency Coverage:** 3.5 to 4.0; 7.0 to 7.3; 14.0 to 14.5; 21.0 to 21.5; 28.0 to 28.5; 28.5 to 29.0; 29.0 to 29.5; 29.5 to 30.0 megahertz. **Frequency Stability:** Less than 100 Hz per hour drift after 30 minutes warmup from normal ambient conditions. Less than 100 Hz for ±10% line voltage variations. **Modes of Operation:** Selectable upper or lower sideband (suppressed carrier) and CW. **Dial Calibra-**

tion: 5 kHz divisions. **Calibration:** 100 kHz crystal. **Bandspread:** 35% resolution for 500 kHz. **Audio Frequency Response:** 350 to 2450 Hz. **Front Panel Controls:** Main tuning dial, Driver Preselector, Final tuning, Final loading, Mic and CW level control, Mode switch, Band switch, Function switch, Meter switch, RF Gain control, Audio Gain control, Filter selector switch. **Side Controls:** Meter Zero control, Bias Adjust, VOX Sensitivity, VOX delay, Anti-Trip. **Internal Controls:** Neutralizing, Crystal calibrator, VFO trimmer, VFO shifter, VFO coil. **Tube Complement:** OA2 Regulator (150 V), 6HS5 RF amplifier, 6HS6 1st receiver mixer, 6AU6 isolation amplifier, 6AU6 1st IF amplifier, 6AU6 2nd IF amplifier, 6BN8 Product detector and AVC, 6AU6 VFO amplifier, 6CB6 2nd transmitter mixer, 6CL6 driver, 6EA8 speech amplifier and cathode follower, 6EA8 1st transmitter mixer, 6EA8 2nd receiver mixer and relay amplifier, 6EA8 CW side-tone oscillator and amplifier, 6GW8 Audio amplifier and audio output, 12AT7 Heterodyne oscillator and cathode follower, 12AT7 VOX amplifier and calibrator oscillator, 12AU7 Sideband oscillator, 6146 Final amplifier (2). **Diode Complement:** 6 Germanium Diodes – balanced modulator, RF sampling, and crystal calibrator harmonic generator. 9 Silicon Diodes – ALC rectifiers, anti-trip rectifiers, and DC blocking. 1 zener diode: cathode bias. **Transistors:** MPF-105 FET-VFO, 2N3393 Voltage regulator. **Rear Apron Connectors:** CW key, 8 ohm output, ALC input, power and accessory plug, antenna, spare. **Power Requirements:** 700 to 850 volts at 250 mA with 1% maximum ripple. 300 volts at 150 mA with .05% maximum ripple. -115 volts at 10 mA with .5% maximum ripple. 12 volts AC/DC at 4.76 amps. **Cabinet Dimensions:** 14¹/₈" W x 6¹/₈" H x 13³/₈" D. **Net Weight:** 17¹/₂ lbs.

*Triple Action Level Control



SCHMATIC OF THE
HEATHKIT®
SSB TRANSCEIVER
MODEL HW-101



NOTES:

LETTER-NUMBER DESIGNATIONS FOR RESISTORS, CAPACITORS, ETC., HAVE BEEN PLACED IN THE FOLLOWING GROUPS:

- 8-99 PARTS ON MODULATOR CIRCUIT BOARD.
- 100-199 IF
- 200-299 BANDPASS
- 300-399 AUDIO
- 400-499 RF-DRIVER
- 500-599 CRYSTAL
- 600-699 METERODYNE
- 700-799 OSCILLATOR
- 800-899 DRIVER GRID
- 900-999 DRIVER PLATE
- 1000-1099 PARTS MOUNTED ON THE CHASSIS.

1. ALL RESISTORS ARE 1/2 WATT UNLESS MARKED OTHERWISE. ALL RESISTOR VALUES ARE IN OHMS (K = 1000, M = 1,000,000).
2. UNLESS OTHERWISE MARKED, ALL CAPACITOR VALUES OF 1 OR OVER ARE IN PF, AND ALL VALUES LESS THAN 1 ARE IN P.F.
3. REFER TO THE X-RAY AND CHASSIS VIEWS FOR PHYSICAL LOCATION OF PARTS.
4. SEE THE VOLTAGE CHARTS AND THE RESISTANCE CHART FOR ALL MEASUREMENTS.
5. ALL SWITCHES ARE IN THE POSITION INDICATED BY THE END POINTERS.
6. ARROW INDICATES CLOCKWISE ROTATION OF KNOB (VIEWED FROM KNOB END).

7. NUMBERED COAXIAL CABLE.
8. INDICATES RF VOLTAGE WITH CONTROL SET PER FIGURE 1-21.
9. ALL RELAY CONTACTS SHOWN IN TRANSMIT (TUNE) POSITION.
10. MIC CW LEVEL IS A DUAL CONTROL.
11. FOR GREATER CLARITY, RELAY SECTIONS ARE SHOWN CLOSEST TO THE CIRCUITS IN WHICH THEY ARE USED. ONE OF THE FOLLOWING MARKS IS USED TO IDENTIFY THE SEPARATED SECTION OF THE RELAY:
 - PART OF RELAY RL1
 - PART OF RELAY RL2

12. SWITCH WAFERS ARE IDENTIFIED AS IN THE FOLLOWING EXAMPLE:

BAND	2	F
	1	1

FRONT PANEL NAME OF SWITCH WAFER NUMBER, WITH THE SWITCH VIEWED FROM THE FRONT PANEL. F = FRONT SIDE OF THE WAFER, R = REAR SIDE OF THE WAFER.

⊖ VOLTAGE IS BEYOND THE RANGE OF THE HEATSEAL RF PROBE.

SCHEMATIC OF THE HEATHKIT® SSB TRANSCEIVER MODEL HW-101

DIODES		
COMPONENT DESIGNATION	TYPE	HEATH PART NO.
D 1, 2, 101, 201, 301, 802, 903	1N2071	57-27
904, 905, 906	11 A 600 PV	
CR61	1N4108	56-56
CR 1, 2, 3, 4, 201, 801, 941	1N19	56-76-1
C 262	15 V Zener	56-75

TRANSISTORS			
COMPONENT DESIGNATION	HEATH PART NO.	MANUFACTURER'S NUMBER	BOTTOM VIEW BASING
CR41	417-108	MPF 105 FET	
CR2	417-118	7N2003	