

NOW...No Down Payments! disregard down payment terms shown inside

Heathkit®

QUALITY at
LOW COST



*We guarantee you can
build any Heathkit*



- Choose From Over
250 Kits
- Stereo/Hi-Fi
 - Marine Equipment
 - Education Kits
 - Home & Hobby Equipment
 - Amateur Radio
 - Test Equipment



HEATH COMPANY BENTON HARBOR, MICHIGAN
PLANT LOCATION: ST. JOSEPH, MICHIGAN

a subsidiary of
DAYSTROM, INCORPORATED

9 Guarantee you can build any Heathkit!

There are times when people write to us expressing an interest in a Heathkit, but at the same time questioning their ability to build a kit product. If you have similar thoughts, let me assure you that our "check-by-step" instructions are so clear, so well illustrated and so easy to follow, I can offer my personal guarantee that you can build any Heathkit. Our millions of satisfied customers, many of whom have no technical knowledge or experience, attest to the validity of this promise.

And when you build a Heathkit, you'll not only receive pleasure from the experience of building, but you'll have a quality product at a money-saving price.

Today, the Heath Company is the world's largest manufacturer of electronic equipment in kit form. Our growth to this position is the result of a dedication to excellence in the quality of our products by the efforts of all our employees who value the Heathkit reputation of offering the best products at the lowest possible prices.

Order your Heathkit today, confident that you can build it. And be assured, we guarantee your success and satisfaction with every Heathkit.

Allan W. Greene

Allan W. Greene
President



Money Back Guarantee

The Heath Company unconditionally guarantees that you can build any Heathkit product and that it will perform in accordance with our published specifications, by simply following and completing our check-by-step instructions, or your purchase price will be cheerfully refunded.

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*New Products

NO DOWN PAYMENTS REQUIRED!

Now you can buy any Heathkit of \$25 or more with *no down payment!* Disregard down payment requirements shown in this catalog—to figure your monthly payments, check the order blank chart. These relaxed credit terms, coupled with our money-back guarantee that you can build any Heathkit, mean you can buy Heathkit with complete confidence and assurance of satisfaction.

Do-It-Yourself with an easy-to-build Heathkit®



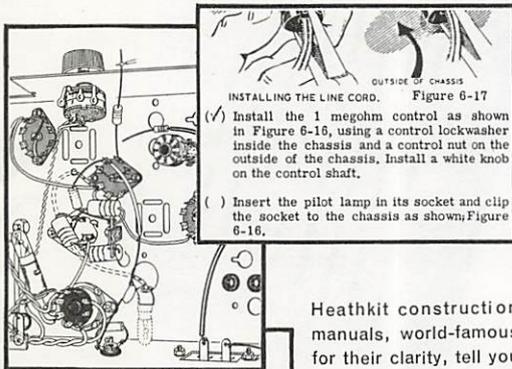
Here's why you can build any Heathkit...



FAST, EFFICIENT SERVICE is yours at Heath. Your order gets immediate attention from our large office staff and complete shipping facilities (a post office in our plant, express trucks at our door).

ONLY HIGH QUALITY PARTS are used in your kit. Over the years Heathkit equipment has earned a reputation of being first in quality and performance. Everything is guaranteed for your protection.

EASY TO UNDERSTAND INSTRUCTIONS make Heathkit building fun! The manual is written in everyday language with a "check-by-step" system. Large foldout pictorial diagrams show exactly where every part goes.



OUTSIDE OF CHASSIS
INSTALLING THE LINE CORD. Figure 6-17
Install the 1 megohm control as shown in Figure 6-16, using a control lockwasher inside the chassis and a control nut on the outside of the chassis. Install a white knob on the control shaft.
Insert the pilot lamp in its socket and clip the socket to the chassis as shown, Figure 6-16.



Heathkit construction manuals, world-famous for their clarity, tell you everything you need to know to successfully build your kit... nothing is left to chance... nothing is presumed. Heathkit manuals contain such information as parts identification, how to solder, check-by-step assembly instructions, large foldout pictorial

YOU'LL FIND AN ENJOYABLE HOBBY in building your Heathkit. Fun filled hours creating something wholly different from the usual hobby fare... a useful product whose functions and capabilities you thoroughly understand.

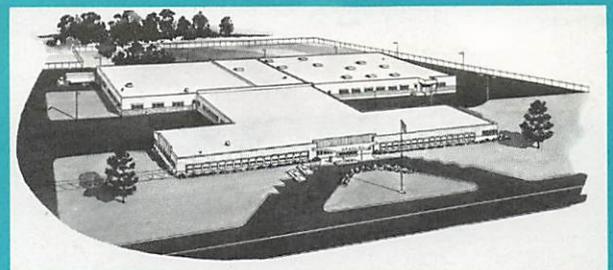
YOU CAN DEPEND ON YOUR HEATHKIT for years of trouble-free performance at factory specifications. And should you ever need help, our Technical Consultants will answer any questions, our Service facilities are always available.

YOU ARE REWARDED IN MANY WAYS by your Heathkit. You save up to 50%, you have fun building it and the pride and satisfaction of your accomplishment is exceeded only by the enjoyment of its faithful performance.

diagrams, circuit description, how to use the instrument, etc. You will find your Heathkit manual so easy to follow and so complete that half the fun of your Heathkit is in the building!

HOME OF HEATHKIT

From this large, modern plant on the shores of Lake Michigan comes the finest in electronic equipment... Heathkit... another of the many product lines of Daystrom, Incorporated... a world-wide organization dedicated to serving you, our nation, and industry. When near St. Joseph, Michigan, we invite you to tour the Heath plant and visit our demonstration room where the latest Heathkit equipment is on display. Plant tours are conducted at 10 a.m. and 2 p.m. daily... Monday thru Friday.



AUTHORIZED HEATHKIT SERVICE CENTERS...

Carefully Selected To Bring You All The Advantages of Factory Service With Local Convenience

California: Sound Service Co., 1015 S. Figueroa, Los Angeles 15; Radio Electronics, 350 Jones St., San Francisco 9.

Colorado: Applewood Electronics, 2090 Alkire St., Denver (Golden).

Illinois: Expert Electronics, 7110 S. Rockwell, Chicago.

Massachusetts: Park Armature, 1218-30 Columbus Ave., Boston 20.

Minnesota: Anderson Audio Labs., 4145 Minnehaha Ave. S, Minneapolis 6.

Missouri: Scherrer Instruments, 5449 Delmar Blvd., St. Louis 12.

New York: Empire State Elec. Service, 139-40 Hillside Ave., Jamaica 35.

Texas: Nelson Electronic Engineering Co., Inc., 6329 Gaston Ave., Dallas; and 3615 Gulf Freeway, Houston.

Washington: A & R Service Co., 2139 Second Ave., Seattle.

For the finest in value and performance . . . choose a

You'll enjoy building and using this handsome new

HEATHKIT WALKIE-TALKIE . . . only \$46.00 a pair! \$24.95 Each!



- ✦ **Hundreds of uses in sports, home or industry**
- ✦ **No license forms, tests or age limit requirements**
- ✦ **Operates up to one mile between units or greater distances when used with regular citizen's band station**
- ✦ **Certified for unlicensed use . . . also complies with FCC for licensed use***

This low-cost, *pocket-size* version of the famous Heathkit GW-30 is ideal for short range two-way radio communications (2 blocks to a mile between units depending on conditions). Surveyors, construction workers, farmers, hunters, fishermen and boaters all have uses for this handy instrument in expediting materials, controlling operations, coordinating functions or just keeping in touch with one another via two-way radio. The GW-31 is attractively styled in a rugged steel case and has a specially-designed frequency response, tailored for maximum intelligibility in the voice range. Its small, compact size slips easily into coat or trouser pocket and the 36" whip antenna collapses into the unit for easy carrying when not in use. Easy to use, the GW-31 has just two controls for simple operation, an on/off volume control and single button push-to-transmit switch. Receiver is fixed tuned to the frequency you wish to use and requires no tuning after initial setting. The GW-31 is easy to build . . . all components mount on a circuit board that guards against wiring errors and assures consistent, reliable performance. Operates up to 75 hours on a single 9-volt battery. No license required for operation between similar units. Kit includes all parts, instructions, and crystal for 1 channel (specify frequency). Less battery. 2 lbs.

Kit Form
or
Factory
Assembled

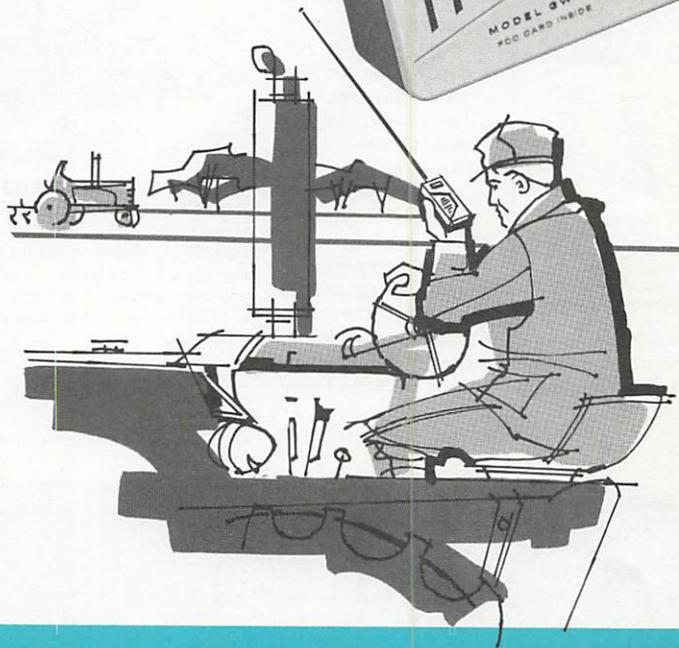
GW-31
\$24.95



- Kit GW-31** . . . \$2.50 dn., \$5 mo. **\$24.95**
- Kit GW-31-2 (pair)** . . . \$4.60 dn., \$5 mo. **\$46.00**
- Assembled GWW-31** . . . \$3.78 dn., \$5 mo. **\$37.75**
- Assembled GWW-31-2 (Pair)** . . . \$7.20 dn., \$7 mo. **\$71.95**
- GWA-30: BATTERY SET:** (2) one for operation, one spare. . . 1 lb. . . **\$2.95**

*NOTE: Fully certified for unlicensed communication with similar transceivers operating in 26.97-27.27 mc band, under part 15 of FCC regulations. Since GW-31 is designed to comply with the requirements of Part 19 of FCC regulations, it can also be used and licensed for communication with Class D Citizen's Band stations.

SPECIFICATIONS—Receiver type: Superregenerative detector. **Sensitivity:** Usable with signals as low as 4 microvolts at antenna terminal. **Tuning range:** Fixed (by internal adjustment) to any channel, 1 to 23, in 11 meter citizen's band. **Audio power output:** Approx. 30 milliwatts. **Speaker:** 10 ohm, round (also used as microphone). **Control:** Combination on/off switch and volume. **Transmitter RF input power:** Approx. 90 milliwatts. **Frequency (Licensed):** Crystal controlled, channels 1 through 23. (Unlicensed): Crystal controlled, channels 2 through 23, in 11 meter citizen's band. **Crystal:** Sub-miniature, plug-in type. Tolerance .005%. **Microphone:** 10 ohm speaker (also used for receiving). **Modulation:** High level AM, limited to less than 100%. **Antenna:** 36" whip type, collapsible to 1" outside of cabinet. **Control:** Single button push-to-transmit switch on side of cabinet. **Battery:** 9 volt; Type: NEDA #1602 (Burgess #2N6, Eveready #246, Mallory #M1602, Ray-O-Vac #1602); Life: Approx. 75 hours (normal intermittent use). **Total current drain:** Receiver, approx. 12 milliamperes; Transmitter, approx. 22 milliamperes. **Transistors:** (1) 2N1108, (1) R424, (2) 2N185. **Dimensions:** 5 1/4" H x 3 3/4" W x 1 1/2" D.



A New Model GY-31 Bumper Mount Mobile ANTENNA

Excellent coverage in temporary or permanent mobile installations. Two-section 102" stainless steel whip antenna. Spring base. Stainless steel strap bumper mount. Includes hold down clip, 20' RG58AU cable, connector and mounting hardware. 7 lbs. **\$14.50**

B Model GY-21 Mobile ANTENNA

For top coverage in permanent mobile installations. Two-section 102" stainless steel whip. Cadmium plated spring base. Swivel ball mount has thick fiberglass insulator, heavy backup plate and water sealing gasket. Complete with mounting hardware, hold down clip, 20' RG58AU cable and connector. 5 lbs. **\$15.95**

C Model CBU-1 "Utility" ANTENNA

An excellent medium range antenna for temporary mobile or fixed station

CB installations. Includes rugged clip mount and bracket. 45 1/2" base loaded antenna with 12' connecting cable and connector. 2 lbs. **\$9.95**

D Model CBF-1 "Fixed Location" ANTENNA

Excellent coverage non-directional 1/4 wave "ground plane". Measures 9 1/4" from bottom of mounting bracket to top of vertical radiator. Complete with 50' RG58AU cable and mounting clamp. 6 lbs. **\$16.95**

E Model GY-11 "Fixed Location" ANTENNA

Omnidirectional operation, low radiation angle and low swr for outstanding CB communications. 18' 1/2 wave coaxial antenna consists of a 9' two-section aluminum rod top element and a 9' two-section 2" diameter aluminum skirt. Mounts on a 12' length of 3/4" IPS pipe (not supplied). Includes 50' RG58AU cable and connectors. 8 lbs. **\$21.95**

Heathkit® Citizen's Band Transceiver



Kit Form
or
Factory
Assembled

GW-10
\$62.95

- ✦ Sensitive superheterodyne receiver
- ✦ Adjustable squelch—automatic noise limiter
- ✦ Crystal controlled receiving channel
- ✦ Variable receiver tuning of all channels
- ✦ 3 crystal controlled transmitting channels
- ✦ Press-to-transmit microphone for simple one-hand operation
- ✦ Easy to build—easy to install—easy to use

Superior CITIZEN'S BAND RADIO facilities at savings up to 50%!

The Heathkit GW-10 transceivers offer outstanding Citizen's Band features and performance in either mobile or fixed station installations. The handsome low-profile cabinet styling is equally suited for attractive home installations or easy under-dash mounting in automobiles, trucks, etc.

Easy to use, the GW-10 features switch-selection of a *crystal controlled* receiving channel or *continuous tuning* of all 23 channels. Impulse type noises (ignition interference, etc.) are minimized by the automatic "series-gate" *noise limiter*; *adjustable squelch* silences the receiver during "standby." Fast, easy station selection is provided through *vernier action* tuning and illuminated dial. The transmitter features convenient switch-selection of 3 *different crystal-controlled transmitting channels* (1 crystal supplied, specify frequency). Receiver crystal is supplied to match transmitting channel unless otherwise specified. Both AC and DC models have built-in power supply and include a press-to-talk microphone with coil cord and mounting clip. All hardware for mobile installations included. Units are color styled in two-tone mocha and beige. 11 lbs.

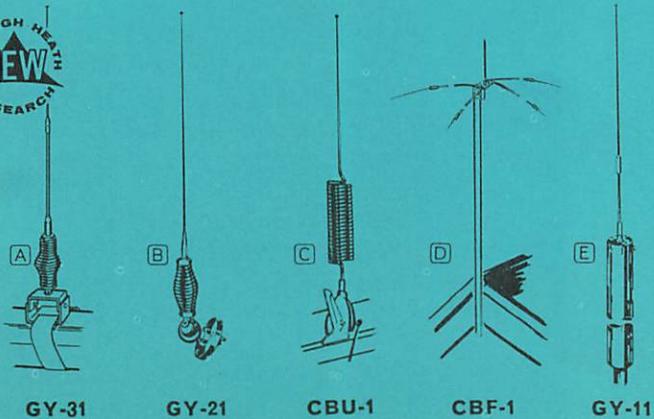
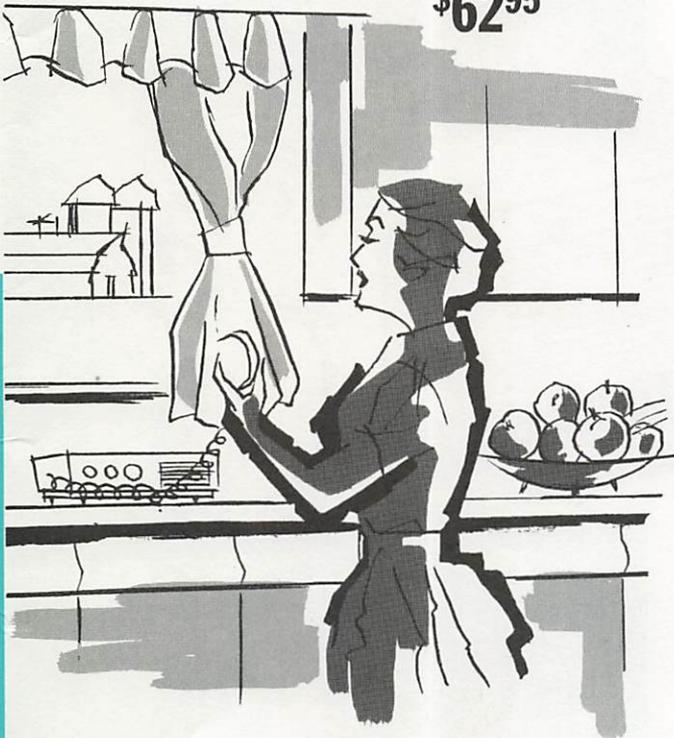
- Kit GW-10A (117 v. ac)...\$6.30 dn., \$6 mo. **\$62.95**
- Kit GW-10D (specify 6 or 12 v. dc)...\$6.30 dn., \$6 mo. **\$62.95**
- Assembled GWW-10A (117 v. ac)...\$10 dn., \$9 mo. **\$99.95**
- Assembled GWW-10D (specify 6 or 12 v. dc)...\$10 dn., \$9 mo. **\$99.95**

GENERAL DESCRIPTION—Receiver section: 4-tube superheterodyne circuit with built-in squelch and noise limiter function. **Sensitivity:** 1 uv signal at antenna input produces 10 db signal to noise ratio. **Selectivity:** 7.5 kc at points 6 db down from peak response. **Transmitter section:** power input to final RF amplifier does not exceed 5 watts. **Frequency control:** 3rd overtone quartz crystal. **Frequency control effectiveness:** within .005% of nominal crystal frequency over an ambient temperature range of -20 degrees F to +130 degrees F. **Modulation:** AM plate and screen modulation automatically limited to less than 100%. **Output impedance:** 50-70 ohms. **Tube complement:** (1) 6U8 Triode receiver crystal oscillator, pentode mixer. (1) 6C4 Receiver variable oscillator. (1) 6BJ6 IF amplifier. (1) 6BJ7 Detector diode, Squelch diode, Noise limiter diode. (1) 6AN8 Pentode first audio amplifier, triode microphone preamplifier. (1) 6AQ5 Combination audio output-modulator. (1) 6AU8 Triode transmitter oscillator, pentode RF final amplifier. **Power requirements:** 117V AC version, 45 watts; 6V DC version, 7.5 amps; 12 V DC version, 4.5 amps. **Dimensions:** 4 1/2" H x 15" W x 5 3/4" D.

EXTRA TRANSMITTER OR RECEIVER CRYSTALS:
Specify channel number, see list below. 1 lb. **\$2.95** each

ATTN. GW-10 OWNERS: If you wish to convert your present AC operated GW-10 to DC, order GWA-10D conversion power supply; if you have a DC model you want to convert to AC, order GWA-10A. Unit fits in place of present supply.

2 lbs. **\$14.95** ea.



WE STOCK CRYSTALS FOR THE FOLLOWING CLASS D CITIZEN'S BAND CHANNEL NOS. AND FREQUENCIES

†1. 26.965 mc	6. 27.025 mc	11. 27.085 mc	16. 27.155 mc	21. 27.215 mc
2. 26.975 mc	7. 27.035 mc	12. 27.105 mc	17. 27.165 mc	22. 27.225 mc
3. 26.985 mc	8. 27.055 mc	13. 27.115 mc	18. 27.175 mc	*23. 27.255 mc
4. 27.005 mc	9. 27.065 mc	14. 27.125 mc	19. 27.185 mc	
5. 27.015 mc	10. 27.075 mc	15. 27.135 mc	20. 27.205 mc	

†Cannot be used for unlicensed operation of GW-31

*Share with Class C Radio Control

NOTE: Specify first and second choice of frequencies. When ordering several units, specify frequency for each.

Enjoy Safe, Carefree Boating this Summer

New Heathkit 50 Watt MARINE TELEPHONE . . . Factory Assembled and Aligned . . . Ready to Install . . . and only \$319.95

Boat owners everywhere will thrill to the beauty, performance and versatility of this new Heathkit marine radio-telephone! Note its outstanding features.

POWER-PACKED TRANSMITTER

50 watt plate power input for extra distance. 5 crystal controlled transmitting channels. Push-to-talk microphone with coiled cord and mounting clip, for convenient one-hand operation. Antenna output matches wide variety of commercial antennas.

VERSATILE RECEIVER DESIGN

8-transistor circuit . . . dependable, long-life performance with low current drain. 2-band frequency coverage . . . 2-3 mc marine and standard broadcast bands. 5 crystal-controlled receiving channels on marine band . . . switch selected. Variable-tuned broadcast band . . . for complete coverage and entertainment. Front panel squelch and noise limiter controls . . . for maximum clarity, minimum noise. Deck hailer power . . . 8-watt PA amplifier capability for monitoring, entertainment or hailing.

RUGGED TRANSMITTER POWER SUPPLY

Reliable, heavy-duty vibrator type operates from 12 volt battery. Circuit breaker protection eliminates fuses. Polarity reversal protection . . . will not operate unless correctly connected.

BEAUTIFUL STYLING

Two-tone marine color scheme blends and complements. Chrome-plated knobs with easy to see marker points. Functionally laid-out panel design with channel identification space on panel for quick reference to frequencies and /or functions.

STURDY CONSTRUCTION

Wrap-around, welded aluminum cabinet . . . corrosion-resistant, long life, light weight. Front panel seal . . . vinyl beading seals panel edge against splash and spray.

EASY TO USE, EASY TO INSTALL

Adjustable mounting bracket . . . mounts anywhere, any angle. Front removal . . . chassis and panel slide out front for easy servicing or adjustments. Quick disconnect leads . . . for antenna, microphone and power cable. Compact . . . measures only 10" W x 12" D x 7" H.

GENERAL CIRCUIT DESCRIPTION

Completely factory assembled and tested, the MWW-11 features an 8-transistor receiver/modulator circuit with separate local oscillator, 2 IF stages, squelch amplifier/first audio, audio driver, and push-pull output; two-tube transmitter circuit has dual section oscillator/driver tube and 12DQ6 final amplifier tube. Panel meter automatically switches to indicate proper tuning and signal strength (receiving) or relative power output (transmitting). Includes: transmitter and receiver crystals for two channels (2182 kc international calling and distress and 2638 kc continental U.S. ship-to-ship frequencies), mounting bracket, push-to-talk microphone, installation and operating instructions and FCC license application forms. The remaining three transmit/receive crystal positions can be used for any combination of the remaining continental U.S. 2-3 mc frequencies for this service. Final installation adjustments must be performed by an FCC licensed technician.

Assembled MWW-11 . . . 25 lbs. . . \$32 dn., \$27 mo. **\$319.95**

EXTRA TRANSMITTER & RECEIVER CRYSTALS: any frequency in Continental U.S. 2-3 mc marine band. Specify transmitter and receiver frequency for each channel. Consult authorities in your area to determine frequencies most used. 1 lb. ea. **\$2.95**

SPECIFICATIONS—Marine frequency range: 2-3 mc. **Broadcast frequency range:** .55—1.6 mc. **Receiver sensitivity:** (providing 6 DB S/N ratio or better). Marine channels: 2 microvolts; Broadcast: 20 microvolts. **Speaker:** 3" x 5" oval (weatherproofed). **Audio output:** 3 watts, 8 watt PA "deckcall" capability. **Transistor Complement:** (1) 2N1225 Mixer; (1) 2N1225 Local Oscillator; (2) 2N1110 1st & 2nd IF; (1) 2N254 1st audios & squelch; (1) 2N301 Audio Driver; (2) 2N1147 Audio Output & Modulator; (1) Diodes. **RF Input:** 50 W. **RF Output:** 25 W min. **Transmitter tube complement:** (1) 6BA8 oscillator & buffer amplifier; (1) 12DQ6 final power amplifier. **Microphone:** carbon element type. **Power requirements:** 12 volt DC; Receiver only; 0.9 amp; Standby; 2.1 amp; Transmit; 9 amps. **Dimensions:** 6 $\frac{1}{2}$ " H x 9 $\frac{1}{2}$ " W x 12 $\frac{1}{2}$ " D.

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MWW-11
\$319.95

- ★ **Powerful long-range transmitter**
- ★ **5 crystal-controlled transmit and receive channels**
- ★ **Dependable all-transistor receiver**
- ★ **Receives standard broadcast and 2-3 MC marine bands**
- ★ **Doubles as 8-watt deck-hailer or PA amplifier**
- ★ **Built-in heavy duty vibrator power supply**
- ★ **FCC type accepted**

with Heathkit® Marine Gear Aboard



MR-11
\$109⁹⁵

Now an added Direction Finding Aid—THE NEW HEATHKIT 3-BAND "MARINER" includes Consolan Coverage

- ✦ 10-transistor, 1 diode circuit—flashlight battery power supply
- ✦ Covers beacon, consolan, broadcast and marine-telephone bands
- ✦ "Sense" antenna eliminates confusing double null
- ✦ Preassembled, prealigned tuning unit for easy assembly

The new MR-11 is an improved version of the famous Heathkit DF-3 with added convenience features. In addition to standard direction finding capability on all bands, reception of marine frequencies and broadcast radio entertainment, it also provides reception of the new coastal Consolan frequencies. Equipped with your MR-11 and readily-obtainable Consolan Charts, you can determine your bearing from the Consolan station by just counting the transmitted dot-dash sequence. A built-in, switch-selected BFO is provided to detect the Consolan and other coded signals. Other features include: a "sense" antenna to eliminate confusing double null for true directions, a lighted tuning dial and meter for night operation, large 4" x 6" speaker for excellent tone, new optional carrying handle, and rugged splash resistant cabinet now with easy back panel access to leak-proof battery holders. The tuning unit is factory assembled and aligned to speed kit building time. Position bearings are shown on a large 6½" compass rose located under the rotatable ferrite loop antenna. Six standard size "D" flashlight batteries provide 500 to 1000 hours operation. Kit includes mounting bracket. 12 lbs.

Kit MR-11...\$11 dn., \$10 mo.....\$109.95

SPECIFICATIONS—Beacon band: 188 to 410 kc. Broadcast band: 535 to 1620 kc. Marine band: 1650 to 3450 kc. Sensitivity for 6 db signal-to-noise ratio: BC band, 150 uv/meter; Beacon band, 150 uv/meter; Marine band, 60 uv/meter. Normal bearing accuracy: ±3°. BFO: 455 kc, switch-selected. Speaker: 4" x 6" weatherproofed. Power requirements: 9 volts from 6 standard size "D" flashlight batteries. Battery drain: 35 ma @ 50 mw output level. Battery life: 500-1000 hours. Dial light: Spring-return switch operated. Null and tuning indicator: 0-1 ma meter. Transistors: (1) 2N1107, (2) 2N1108, (1) 2N1109, (1) 2N1110, (1) 2N1111, (1) R251, (2) R250, (1) 2N238, (1) diode. Dimensions: 9" x 9¾" x 6¾".



MI-10
\$69⁹⁵

Finest Value in a MARINE DEPTH SOUNDER!

- ✦ All-transistor battery-operated circuit
- ✦ Indicates depth from 0-100 feet—easy to build

Here is an accurate, dependable depth sounder that can contribute greatly to your boating enjoyment... for safety... navigation ease... boat protection... and also for the adventure of locating hidden underwater objects, schools of fish. Shows type of bottom as well as depth. The MI-10 features a large 4¾" dial calibrated from 0-100 feet in 1 foot divisions and is hooded to permit easy reading even in bright sunlight. Six standard flashlight batteries installed in leak-proof plastic housings furnish all power required for high operating economy and dependability. The transducer (sending and receiving unit) may be mounted permanently through the boat's hull or outboarded for temporary use. Two-tone marine green color; swivel mounting bracket included. 9 lbs.

Kit MI-10...\$7 dn., \$7 mo.....\$69.95

SPECIFICATIONS—Range: 0 to 100 feet indicated on dial calibrated in 1 foot divisions. Sounding rate: 1440 soundings per minute or 24 per second. Depth indication: conventional flashing light behind calibrated dial. Transducer: barium titanate crystal encased in a streamlined epoxy housing with brass through-hull fitting and attached coaxial cable. Controls: "on/off", sensitivity (on front panel). Power supply: 9-volts from six self-contained "D" flashlight batteries. Current drain: 80 milliamperes. Dimensions: 9" wide x 5½" high x 6" deep. Supplied with bracket for universal mounting.



MP-10
\$29⁹⁵

Enjoy "Shore-Side" Power with the Heathkit POWER CONVERTER

Converts 6 or 12 volt battery power to household power at 117 volts AC. Uses power transistors for highest efficiency, instant operation. Unit is fused for protection and finned heat-sinks protect transistors during max. power loads. Two AC receptacles for plug-in connection. Local on/off switch. Measures 7½" x 5" x 5¼". 7 lbs.

Kit MP-10...\$3 dn., \$5 mo.....\$29.95

SPECIFICATIONS—Power source: 6 or 12 volt storage battery. Power output: nominal 117 volt, 60 cycle AC; 12 volt operation, 175 watts continuous, 240 watts max.; 6 volt operation, 120 watts continuous and max. Input Current for Continuous Ratings: 6 volt operation, 25 amperes; 12 volt operation, 16.5 amperes.

There's a Heathkit® Stereo System to

High-Quality 4-TRACK STEREO TAPE FACILITIES at low cost!



The Heathkit AD-40 stereo tape recorder is a completely portable unit that gives you all the advantages of 4-track stereo recording and playback at a price far below that of competitive models with similar features. Because it has its own preamplifiers, power amplifiers and speakers, the AD-40 can be used as a self-contained 4-track stereo recorder and playback unit, as a stereo center for controlling and amplifying tuners and record players, or as a stereo tape music source for separate stereo/hi-fi systems. Ease of operation is insured with two controls that select "record" or "play," "fast-forward," or "rewind" functions. Individual tone-balance and level controls, a monitoring switch for listening to programs as they are recorded, a pause control for editing and two "bar-tube" indicators for recording levels are some of the other fine features of this quality instrument. There are two speeds: 3¾ and 7½ IPS. By positioning the detachable speaker wings, each containing a 7½" woofer and 2" x 6" oval tweeter, you can obtain the stereo effect most pleasing to your particular taste. All component parts for the amplifiers, preamplifiers, and power supply are provided. Cabinet and professional-type tape transport mechanism are factory assembled. The handsome turquoise and white vinyl clad cabinet has a metallic-tone front panel and features a storage compartment for tapes and accessories. Less mikes. 49 lbs.

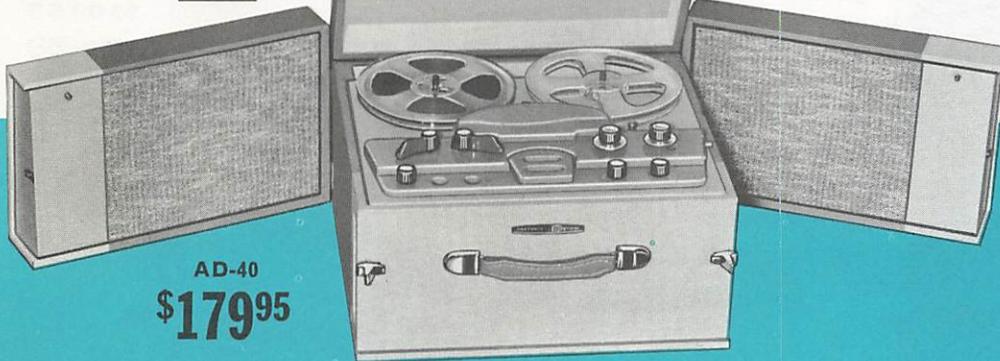
Kit AD-40 . . . \$18 dn., \$16 mo. **\$179.95**

Assembled ADW-40 . . . \$30 dn., \$25 mo. **\$299.95**

Recommended microphones: See p. 15;
Heathkit Model AK-1 (1 lb.) **\$9.95 ea.**

SPECIFICATIONS—Power output: 6 watts stereo (3 w. per channel) utility rated. Power response: ±2 db 50 to 15,000 cps at 3 watts. Total harmonic distortion: less than 2% 50 to 15,000 cps at 3 watts. IM distortion: less than 3% @ 3 watts output using 80 cps and 6000 cps mixed 4:1. Hum and noise: -45 db or better at 3 watts. Record sensitivity for maximum record level: microphone input, 3 mv; auxiliary input, 200 mv. Power requirements: 105-125 V, 60 cycles, 110 watts. Cabinet dimensions: 9½" H x 22½" W x 14" D.

Kit Form
or
Factory
Assembled



AD-40
\$179.95

- ✦ 4-track stereo record and playback
- ✦ 3¾ and 7½ IPS speeds
- ✦ All amplifiers and speakers included
- ✦ Detachable speaker wings
- ✦ Preassembled tape mechanism
- ✦ Styled in turquoise and white vinyl

- ✦ 4-speed automatic record changer
- ✦ Preassembled cabinet and changer
- ✦ Turnover diamond and sapphire stereo cartridge
- ✦ Completely portable for fun everywhere

Now have Stereo wherever you go . . . with the Heathkit GD-10 PORTABLE PHONO

With the Heathkit GD-10, you get complete stereophonic and monophonic operation, with portable convenience, all at the lowest possible price, only \$69.95. The automatic record changer plays 16, 33⅓, 45 and 78 rpm records, either stereo or mono. The turnover crystal stereo cartridge has diamond stylus for LP's and sapphire stylus for 78's. The tube-type amplifier provides ample power for all your records and features volume, stereo-balance and tone controls. The smartly-styled, completely factory assembled cabinet is covered with durable white and aqua vinyl for long life even under extreme use conditions. The detachable speaker wing is used as the cabinet top when the unit is closed; in use, it can be placed several feet away from the cabinet for maximum stereo effect. Both the speaker wing and the main cabinet have specially-designed 5" x 7" oval dual-cone speakers. Assembly of the Heathkit GD-10 is extremely simple; just wire the amplifier, install the speakers and place the changer in the assembled cabinet. You'll enjoy the Heathkit GD-10 as an "extra" stereo-phono for the patio, in the den, or the recreation room for parties and get-togethers. 28 lbs.



GD-10
\$69.95

Kit GD-10 . . . \$7 dn., \$7 mo. **\$69.95**

ADA-50-1: 45 rpm Adapter Spindle . . . 2 lbs. **\$2.95**

SPECIAL FEATURES—Frequency response: ±5 db, 70-10,000 cps. Power output: 2.5 watts RMS; 5 watts peak per channel at 1 kc. Channel separation: 20 db minimum over entire range. Cartridge: stereo crystal with .7 mil diamond and 3 mil sapphire. Speakers: 5" x 7" 2-cone oval. Power requirements: 117 v AC 60 cycles. Cabinet dimensions: 15½" W x 18" D x 8¾" H.

SPECIAL STEREO RECORDS OFFER!

When you buy either the GD-10 (above) or GD-31 (on opposite page), you are eligible to purchase these stereo record groups:

5 for only \$5.95 (order #449-81, 4 lbs.)

10 for only \$9.95 (order #449-82, 7 lbs.)

Includes London, Westminster, or Mercury first-quality stereo records. Sorry, no title selections or returns permitted.

Fit Every Need and Every Budget!



Another Heath exclusive . . . COMPLETELY ASSEMBLED "Directable Sound" STEREO PHONO CONSOLE

Now, just a turn of the knob on Heathkit's exclusive "Directable Sound" ready-to-play stereo console brings true stereo performance to your living room. This fascinating console can be placed anywhere in a room, even near a corner, and still give you the desired "stereo spread." The two speaker systems, (one for each channel, each with an 8" low resonance woofer and a 3½" cone-type high-frequency tweeter) rotate to suit your listening needs.

Clean, clear sound is assured with the 30-watt amplifier (15 w. per channel, EIA Music Power Rated) that delivers a system response of 50-15,000 cps. The six amplifier inputs can accept monophonic AM and FM tuners, stereo ceramic phono cartridge and FM multiplex adapter. Also featured are separate bass and treble tone controls and dual concentric volume control that not only works as a balance but master volume control.

The four-speed automatic/manual record changer features diamond and sapphire styli in a Sonotone stereo ceramic turnover cartridge which plays either monophonic or stereophonic records. The tone

arm can be held during play or change cycle without fear of damaging the mechanism. The automatic record changer will play a one-inch stack of intermixed 10" and 12" records of the same speed and an anti-skate device helps to protect the records. This "Directable Sound" Stereo Phono Console is completely assembled and ready to use when you unpack it. Order Assembled GDW-41W.

You can also enjoy FM music and be ready for FM Multiplex when you order the "Directable Sound" Phono Console Model GDW-81W with FM, complete and ready to play. The tuner has flywheel tuning, a lighted dial, automatic frequency control (AFC) and multiplex adapter output jack.

If you want your phono equipped with an AM/FM tuner, order Model GDW-91W. Its tuner features flywheel tuning, lighted dial, "eye-tube" tuning indicators, three-position AFC switch, "fidelity" switch and multiplex adapter output jack.

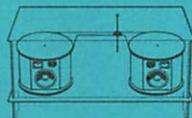
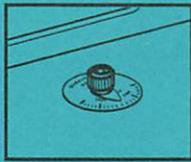
No matter which model of the "Directable Sound" Stereo Phono Console you choose, you will be thrilled with the elegant cabinetry offered. Each cabinet has a solid walnut frame, walnut veneer top, solid walnut sliding record compartment door and light beige tapestry weave grille cloth on front and sides.



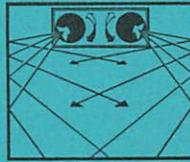
"Directable Sound" control puts sound anywhere in your room.

GDW-41W
\$249⁹⁵

True stereo, regardless of room size, shape or console placement.



2 full range cylindrical ported enclosures rotate simultaneously.



- Assembled GDW-41W (phono) 135 lbs. **\$249.95**
\$25 dn., \$22 mo.
- Assembled GDW-81W (phono+FM) 142 lbs. **\$299.95**
\$30 dn., \$25 mo.
- Assembled GDW-91W (phono+FM+AM) 144 lbs. **\$349.95**
\$35 dn., as low as \$21 mo.
- ADA-80-1 45 rpm adapter spindle, 2 lbs. **\$2.95**

- ✦ "Directable Sound" speaker system
- ✦ 4-speed automatic record changer
- ✦ Versatile stereo control panel
- ✦ Choose stereo phono, phono + FM, or phono + AM/FM

Heathkit GD-31 STEREO-PHONO CONSOLE Ready-to-Play only \$149.95 . . . \$129.95 for kit!

- ✦ Six speakers—3 for each channel
- ✦ Contemporary walnut factory-assembled cabinet
- ✦ 4-speed stereo/mono record changer
- ✦ Turnover diamond and sapphire styli
- ✦ Separate dual bass and treble tone controls

The Heathkit GD-31 is a handsome, compact stereo console designed for excellent performance at a budget price. Perfect for apartments or homes where room is at a premium, this fine product brings you all the thrills of stereo—easily and faithfully. The GD-31 measures only 31¾" long by 17¾" deep by 26⅝" high. The cabinet has a solid walnut frame, walnut veneer front panel and "wood-grained" masonite sliding top. A light beige tapestry grille cloth is used in the front and the sides. The speaker system of the GD-31 features 6 fine speakers: two 12" woofers, two 8" mid-range speakers and two 5" cone-type tweeters to give a full range of sound. A completely automatic record changer plays 16, 33⅓, 45 and 78 rpm records in stereo or mono, thanks to a

Kit Form
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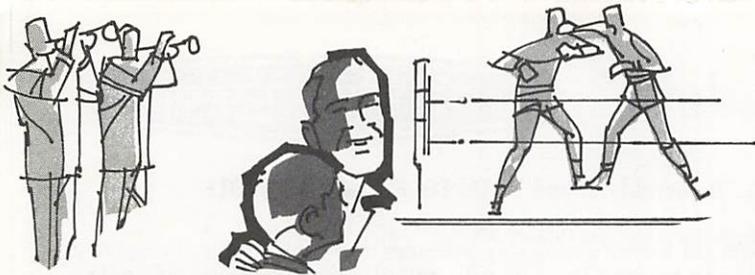


GD-31
\$129⁹⁵

turnover diamond and sapphire styli stereo cartridge. Easy to operate tone and volume controls on the front panel of the GD-31 make it easy for you to be in complete command of either mono or stereo operation. The compact 2-channel amplifier gives thrilling stereo with a response of 60-15,000 cps for full dynamic range. You can enjoy stereo in your home, regardless of your budget, with the Heathkit GD-31. 70 lbs.

- Kit GD-31 . . . \$13 dn., \$11 mo. **\$129.95**
- Assembled GDW-31 . . . \$15 dn., \$13 mo. **\$149.95**
- ADA-50-1 45 rpm adapter spindle . . . 2 lbs. **\$2.95**

You can save up to 50%



High Fidelity FM TABLE MODEL RADIO

To the world-renowned quality performance of the famous FM-4 Tuner, the Heathkit GR-21 adds an amplifier, speaker and cabinet for convenient one-unit table model operation. The 6" x 9" dual cone speaker with 6.8 oz. magnet gives true high-fidelity sound reproduction. The preassembled, prealigned tuning unit makes assembly easy. Flywheel tuning with a fine vernier action is assisted by a tuning "eye" and lighted dial for easy station selection. Automatic Frequency Control is easily switched on for drift-free reception. The GR-21 is powered by an AC transformer with silicon diode rectifiers. The auxiliary audio input will allow one channel from an FM Multiplex Adapter to be fed into the amplifier section, thus utilizing the GR-21 as one half of a stereo system. This input may also be used with a high output crystal phono cartridge or AM tuner. Other features include: line cord antenna and external antenna terminals; FM multiplex output jack; switched AC socket; tone and volume controls. Housed in a 3/8" walnut veneer cabinet with furniture-quality finish and protective back panel, it has a unique "relief" speaker grille which is offset from the front. 15" L x 8" H x 6" D. 16 lbs.

Kit GR-21...\$6 dn., \$6 mo. **\$59.95**

SPECIFICATIONS—Tuning range: 88 to 108 megacycles. Intermediate frequency (IF): 10.7 megacycles. Quieting sensitivity: 2.5 uv for 20 db; 3.5 uv for 30 db; 25 uv for 38 db or better (full). Speaker: 6" x 9" oval with 8 ohm voice coil, 6.8 oz. mag. and "whizzer" inner cone for high frequency reproduction. Antenna: Built-in line cord plus unbalanced input for connecting an external 300 ohm antenna. Controls: Volume/AC On-Off; Tone/AFC; Tuning; Normal-Aux input switch. Tubes and silicon diodes: 6GY8, 3-6AU6, 6BN8, 6AQ5, 6ME5, 2-silicon diode rectifiers. Multiplex output: The signal from this output can be used with a multiplex adapter to receive stereo FM broadcasts. Auxiliary audio input: A multiplex adapter, phonograph, AM tuner or any other high-level signal source may be played through this input. Switched AC outlet: This outlet can be used to turn other equipment on and off along with the radio. Power requirements: 105-125 volts AC, 50/60 cps. 47 watts.



GR-21
\$59.95

- ✦ 88 to 108 mc FM coverage
- ✦ 7 tubes function like 11
- ✦ 6" x 9" dual-cone speaker with heavy Alnico-5 magnet
- ✦ Equipped for use with FM Multiplex adapter
- ✦ High quality preassembled and prefinished walnut cabinet



XR-2L
\$34.95

XR-2P
\$29.95

- ✦ 6 transistor, 2 diode circuit
- ✦ Big 4" x 6" speaker
- ✦ Built-in rod antenna

Your best "Portable" buy—Heathkit!

You can have dependable quality portable radio entertainment anywhere with these amazing portables by Heath. Vernier tuning for smooth, easy station selection. Big set tone quality. Operates up to 1,000 hours on six standard size flashlight batteries. Handsomely styled in mocha-colored plastic or suntan simulated leather case. Each has a curved, beige plastic grille. 9 1/2" L x 7 1/4" H x 4" D. Less batteries. 5 lbs.

Kit XR-2P (plastic)...\$3 dn., \$5 mo. **\$29.95**

Kit XR-2L (sim. leather)...\$3.50 dn., \$5 mo. **\$34.95**

SPECIFICATIONS—Tuning range: 540-1620 kc. Sensitivity: 350 uv/m for 15 db signal-to-noise ratio at 50 mw output. Transistors: 6; 2N1108, 2N1110, 2N1111, R251, 2-R250. Diodes: 2.

Kit Form
or
Factory
Assembled

GC-1A
\$109.95



- ✦ Ten transistor, six diode circuit
- ✦ Covers 550 kc to 32 mc in 5 bands
- ✦ Flashlight battery power supply
- ✦ Quality designed—complete portability

Heathkit "Mohican" for short wave listening anywhere!

The Heathkit "Mohican" GC-1A is a 5-band receiver that will thrill every short wave enthusiast. Powered by 8 standard flashlight batteries, it operates anywhere. Fixed-aligned ceramic IF "Transfilters" operate like crystal lattice filters to shape the IF bandpass and offer superior stability and selectivity. Other features include: Zener diode voltage regulation, built-in telescoping 50" whip antenna, flywheel tuning, tuning meter and slide-rule dial. Controls include: on/off volume control, BFO pitch with on/off switch, RF gain, antenna tuning, electrical bandspread (oscillator tuning only). ANL on/off, AVC on/off and Bandswitch. One-piece all-metal cabinet. Experienced kit builders can assemble in 30 hrs. 18 lbs.

Kit GC-1A...\$11 dn., \$10 mo. **\$109.95**

Assembled GCW-1A...\$19.35 dn., \$17 mo. **\$193.50**

Kit XP-2...117 VAC plug-in power supply...2 lbs. **\$9.95**

SPECIFICATIONS—IF frequency: 455 kc. Frequency coverage: 550 kc to 32 mc in 5 bands with calibrated bandspread scales (oscillator tuning) for 80, 40, 20, 15 and 10 meter amateur bands and 11 meter citizens band. Selectivity: 3 kc wide at 6 db down. Sensitivity: 10 uv broadcast band, 2 uv short wave bands for 10 db signal-to-noise ratio. Output: 400 milliwatts max. Battery life: up to 400 hours normal intermittent service using 8 standard size "C" cells. Dimensions: 6 1/2" H. x 12" W. x 10" D.

with Heathkit® Home and Hobby Equipment



GD-61
\$69⁹⁵

- ✦ Makes music "come alive" brilliantly
- ✦ Works with any system
- ✦ Assembled cabinets in walnut or mahogany finishes
- ✦ Complete—including two 15' input leads

Heathkit Reverberation brings concert-hall realism to your favorite musical selections

Now your favorite recordings and radio programs can take on the added dimension of "spaciousness," thanks to the acoustical wonders of reverberation and the Heathkit GD-61. In concert halls and cathedrals that rich, spacious sound of music is the result of the sound echoing and reflecting off of the walls and ceilings. With the Heathkit GD-61 Reverberation System your entire music library can take on the thrilling aspect of "on-the-spot" listening.

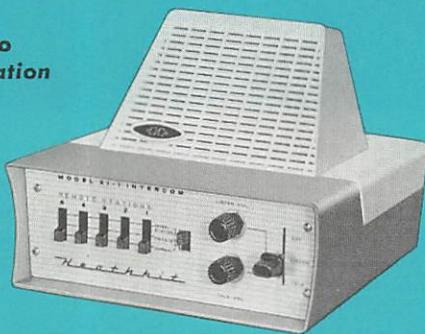
Complete and easy-to-use, the Heathkit GD-61 input leads connect to the speaker terminals of your present system, whether monophonic or stereophonic. No system disrupting electronic mixing, the GD-61 contains its own amplifier and speaker to produce a natural sound which is independent of your original sound speakers. A turn of the single control lets you adjust the right amount of reverberation to suit your desires and you can position the GD-61 anywhere in the room for best effect. It will work on any monophonic or stereo system—whether you use radio, phonograph, tape recorder, etc. The GD-61 is equipped with a Hammond-type IV reverberation unit, a low distortion 3-watt amplifier with built-in power supply and an 8" speaker. Housed in a preassembled birch cabinet with your choice of walnut or mahogany finish. 11½" H x 23" W x 11¾" D. 30 lbs.

Kit GD-61W (Walnut finish)...\$7 dn., \$7 mo. **\$69.95**
Kit GD-61M (Mahogany finish)...\$7 dn., \$7 mo. **\$69.95**

SPECIFICATIONS—Power output: 3 watts. Average frequency response: ±3 db from 200 cps to 4000 cps. Sensitivity: 250 mv for 3 watts output. Total harmonic distortion: less than 2% from 200 cps to 4000 cps, continuous tones. Inputs: stereo or mono; twin triode mixer. Controls: Input level (ganged for stereo), Reverberation control. Speaker: 8" mid-range (5.5 ohm voice coil). Tube complement: E281 full-wave rectifier, 12BH7 input mixer and delay line driver, 2-6EU7 voltage amplifiers, EL84 power amplifier. Power requirement: 117 volts, 50/60 cycles, 50 watts. Delay line: Hammond Organ Type IV; Input Impedance, 1500 ohms; Output Impedance, 2250 ohms. Reverberation time: Approximately 2 seconds at 300 cps. Delay time: Long spring, .037 second; Short spring, .029 second.

Heathkit TRANSISTOR INTERCOM SYSTEM saves steps and time at work or at home

- ✦ Operates up to 5 remote stations
- ✦ Flashlight batteries for low-cost power
- ✦ Can be converted to 110 volt AC operation with accessory power supply



XI-1
\$29⁹⁵

Ideal for home, shop or office, the Heathkit Transistor Intercom kit puts you into instant communication with any or all of five remote stations. You'll save time and steps, and because of its low price, you'll save money, too! Controls on the master unit provide "normal," "private" and "interstation" functions for each of 5 remote outlets. The master also has separate listen and talk volume controls and a 3-position "off-listen-talk" lever switch. The remote has a "private" switch and spring-return "call" switch, and can call other remotes when master is pre-set. 8 standard flashlight batteries power the master up to 300 hours. Each remote requires only a single 9-volt long-life battery and comes with 50' of connecting cable. Less batteries.

Kit XI-1 (Master)... 5 lbs....\$3 dn., \$5 mo. **\$29.95**
Kit XIR-1 (Remote)... 3 lbs. **\$ 8.95**
Transistor Power Supply Kit XP-1: Converts XI-1 to 110 volt AC operation... 1 lb. **\$ 9.95**

Your hands are free for any task when you use the Heathkit GD-71 TELEPHONE AMPLIFIER

- ✦ Ideal for offices, conference calls, or busy housewives
- ✦ All transistor circuit— instant operation
- ✦ One 9-volt battery lasts up to 2,000 3-minute calls



GD-71
\$19⁹⁵

With the Heathkit GD-71 Telephone Amplifier, you can carry on telephone conversations at home or at the office with both hands free. Now, by simply placing the telephone handset on the amplifier cradle, you're free to take notes, look through files or books, type, etc. You can also participate in "conference-type" calls with several persons able to listen and talk over the same telephone receiver. The volume and sensitivity of the GD-71 is more than adequate to permit talking and listening from the opposite end of an average room. Completely transistorized for instant operation, this telephone amplifier requires no "warm-up" time. When the telephone handset is placed on the amplifier, a switch automatically turns the amplifier "on." The single 9-volt battery included in the kit furnishes the power for the GD-71 and has a normal operating life of 100 hours. Also featured are: a built-in speaker, an inductive pickup coil, and an adjustable receiver volume control. A circuit board makes assembly of this kit very simple—everything can be completed in less than 4 hours. The GD-71 has a molded ivory cabinet and measures 5⅞" W x 6" H x 9¼" D. 2 lbs.

Kit GD-71 **\$19.95**

At your service...The new Heathkit® Radio-Controlled Garage Door Operator... unique in features, big in savings!



Just a push of a button on the dashboard of your car as you pull into your driveway and your garage door opens . . . push it again after you're inside and the garage door closes, automatically! What could be more simple! The new Heathkit radio-controlled garage door operator puts this great convenience within easy reach of home owners everywhere, and the cost . . . just \$11.00 down, \$10.00 a month, using Heath's easy time pay plan.

- ✦ **Opens and closes garage door automatically!**
- ✦ **Operates all overhead track type doors up to 8' high**
- ✦ **Fool-proof safety device disengages door upon meeting any obstruction**
- ✦ **Easy to install . . . complete instructions provided**



THROUGH HEATH
NEW
RESEARCH

GD-20
\$109⁹⁵

"Radio-Controlled" GARAGE DOOR OPERATOR

At this low Heathkit price anyone can afford the convenience of having their own garage door operator. Just imagine, with the touch of a button your garage can be opened, lighted and closed securely without leaving the comfort of your car. No need to expose yourself to the elements in bad weather . . . no more lifting or straining to open your garage . . . no more groping or stumbling in the darkness of an unlighted garage. Once you have used this great convenience, you will never want to be without it again . . . not only for its labor-saving advantages but for its safety and protection as well.

Kit includes *all parts and instructions* for simple assembly of transmitter, receiver and mechanism. Mechanism is easy to install with a minimum of parts for long, reliable, trouble-free operation and requires just 2½" clearance above highest point of door travel. A unique adjustable safety release disengages door from mechanism should it meet any obstruction or fail to operate for any reason. A light socket is included which turns on when door is opened, remains on for several minutes after door closes, then automatically turns itself off. Transmitter mounts under hood of auto and is crystal-controlled for high stability. Special receiver and high-power transmitter design features selectable tone coding of signal to allow operation near similar units without interference with one another, and to prevent operation from all but the strongest of signals. A push-button switch is provided to operate door from house or garage. Any number of switches may be

connected to the mechanism which uses a safe 12 volt line for easy inexpensive wiring. Door may be stopped in any position for ventilation, etc. Order your Heathkit garage door operator now, and enjoy the time-saving convenience and safety of this handy household servant! 67 lbs.

- Kit model GD-20** (includes mechanism, transmitter & receiver)
 . . . \$11 dn., \$10 mo. **\$109.95**
- Kit model GDA-20-1** (extra transmitter for second car) 4 lbs.
 . . . \$2.50 dn., \$5 mo. **\$24.95**

TRANSMITTER SPECIFICATIONS—6 or 12 volt operation, 5 watts max. (FCC requirements) to final, 3 modulation frequencies approx. 2KC, 2.9KC & 3.7KC fixed. Fused, 4½" wide x 6" long x 4" high. 6AU8 & 12BH7. 27.255 MC crystal controlled, 2¼ lbs.

RECEIVER SPECIFICATIONS—117 V.A.C. 4½" wide x 6" long x 4" high. 6BH6 & 6BC6, 10 W idle, 12 W with signal. 27.255 MC. 3 audio filter frequencies approx. 2KC, 2.9KC & 3.7KC adjustable to match Xmitter. Fused, 2 lbs.

MECHANISM SPECIFICATIONS—126" length x 8½" high x 13" wide. 100# max. operating force. Operate doors up to 8' high. 117 V.A.C. ¼" H.P. motor. Fused, 56 lbs.

NO DOWN PAYMENTS REQUIRED!

Now you can buy any Heathkit of \$25 or more with *no down payment!* Disregard down payment requirements shown in this catalog—to figure your monthly payments, check the order blank chart. These relaxed credit terms, coupled with our money-back guarantee that you can build any Heathkit, mean you can buy Heathkit with complete confidence and assurance of satisfaction.



New in the PUBLIC ADDRESS field . . .

a 20 watt high fidelity rated AMPLIFIER

AA-31
\$59.95



SPECIFICATIONS—Power output: 20 watts, high-fidelity rated. Input sensitivity: (Volts RMS for 20 watts output) Microphone input W/O matching transformer—1 mv; Magnetic phono input—6.5mv; High Level input—.25V. Input impedance: 100 K ohm nominal. Output impedance: 4, 8, 16 ohm and 70.7 volt. Tape recorder output level: approximately .15 volt. Tape recorder output impedance: approximately 5 K ohm. Power response: ±1 db 30—15,000 cps @ 20 watts. Damping factor: approximately 14. Harmonic distortion: (high level input) less than 0.7% @ 1 KC, 20 watts. Less than 2% @ 20 watts 30-15,000 cps. Intermodulation distortion: Less than 2% @ 20 watts, 60 cps and 6000 cps mixed 4:1. Hum and noise: (db below 20 watts output) Microphone Input—47 db; Mag. Phono Input—50 db; High Level Input—65 db. Equalization: mag. phono (RIAA). Controls: separate input matching switches, separate bass & treble controls, separate input gain control, master gain control, on-off switch, 2 hum balance controls. 117 V. AC Power receptacle: provides AC independent of AA-31 on-off switch. Power requirements: 105-125 volts, 50-60 cps AC 100 watts at 117 volts. Tube complement: (3) 6EU7, (1) 7199, (2) 7591, (1) GZ-34. Dimensions: 6 1/2" H. x 14 1/2" W. x 11 1/2" D.

A versatile PA value for store, factory, church, school, home or professional use. Provides true high fidelity performance with many special design features. Two mixing inputs—both with standard, quick disconnect 3-terminal plugs and receptacles. "Matching" switches on either input allow use with mag. phono cartridges, high impedance microphones, or high level sources such as tuners or tape preamps. When used with the Heathkit AN-11 plug-in transformers, the "matching" switches will select the proper input impedance for low output, 50, 150 and 300 ohm microphones or for balanced or unbalanced 600 ohm telephone lines of wired music systems. Designed for 24 hour service with rugged components and well-ventilated cabinet. Has 70 volt line output for easy speaker matching. 24 lbs.

Kit AA-31...\$6 dn., \$6 mo. \$59.95

MODEL AN-11 "PLUG-IN" INPUT MATCHING TRANSFORMER

Matches low impedance microphone and balanced or unbalanced lines. Primary impedance 30 to 600 ohms in four ranges. Secondary impedance 80,000 ohms. Two mu-metal shields keep hum down at least 70 db. Octal plug base. Steel outer case. 1 7/8" square x 2 3/8" h. 2 lbs.

\$11.95



Kit Form or Factory Assembled

IO-20
\$89.95



ID-11
\$14.95



Kit Form or Factory Assembled

- ★ High-efficiency 5-transistor circuit
- ★ 10 watt output
- ★ Easy to build and install

AA-80
\$39.95



Mobile PUBLIC ADDRESS AMPLIFIER for car, boat, trucks

Ideal for all outdoor events! All-transistor circuit operates from 12 volt car battery. Full 10 watts of power with minimum idling current drain. Inputs: low impedance mike and high impedance music source. Accepts 8 or 16 ohm speakers. 3 1/2" H x 8 7/8" W x 7 1/2" D. 6 lbs.

Kit AA-80...\$4 dn., \$5 mo. \$39.95

COMMERCIAL SOUND SYSTEM (CSS-1): Includes AA-80 Amplifier, Dynamic mike, car-top carrier (holds up to 4 speakers), one 16 ohm 15 watt hi-intelligibility reflex horn speaker, cables, hardware . . . 24 lbs.

Kit CSS-1...\$8.50 dn., \$8 mo. \$84.95

Extra Horn Sound Projectors, as above:

Model 401-38... 6 lbs. \$19.95 each

Anyone can be an automotive ignition specialist with the

Heathkit IO-20 IGNITION ANALYZER

- ★ Shows trouble spots or verifies corrective measures taken
- ★ New improved trigger circuit for steady, locked-in patterns
- ★ Easy to use with complete instructions provided

The Heathkit IO-20 Ignition Analyzer incorporates many desirable and time-saving features at savings of at least 50% of the cost of comparable units. Designed in close cooperation with automobile industry specialists, the IO-20 lets you observe these common ignition system defects . . . shorted spark plugs, bad points, defective wiring, worn distributor parts, incorrect point dwell time, coil and condenser problems, etc. A flexible switching system lets you select primary, secondary, parade or superimposed patterns without lead switching. A new, improved trigger circuit provides a steady locked-in pattern display with vertical and horizontal expand for magnified views of any waveform. The IO-20 is easy to use, just connect the leads, start the engine, select the pattern you want and view the tell-tale trace on the big 5" picture tube screen. Troubles can be pinpointed quickly and accurately without

removing engine parts. With a DC to AC inverter the IO-20 can be used for "on the road" checks of performance. 15 lbs.

Kit IO-20...\$9 dn., \$9 mo. \$89.95

Assembled IOW-20...\$17 dn., \$15 mo. \$169.95

SPECIFICATIONS—RPM range: 400-5000 rpm. Displays: Secondary, Primary, Parade, Superimposed. Screen size: 4 1/4" diameter. Dwell measurement: 4, 6 & 8 cylinder calibration on face plate. Pattern height: Secondary circuit, approx. 1"; Primary circuit, 6 volt system 3/4", 12 volt system 1". Vertical expand ratio: 2 to 1. Horizontal expand ratio: 10 to 1. Cable length: 12' pickup clamp, 2' ground, primary and secondary clips. Front panel controls: Vertical position, right edge, left edge. Front panel switches: Parade-Superimposed, 6-position rotary; Off, secondary expand, secondary normal, primary normal, primary expand and accessory. Internal controls: Focus, astigmatism, trigger adjust. Trigger method: Current transformer clamp in rugged plastic housing. Tube complement: 5UP1, 1V2, 6EA8, 12AU7(2), 12AX7(2). Rectifiers: (3) silicon. Power requirements: 105-125 V, 50/60 cycles AC, 30 watts.

IGNITION TIMING LIGHT ACCESSORY

Plugs into IO-20 analyzer only. Intense white light shows timing marks even in brightly-lighted areas. Speed range: 0-1250 flashes per minute (0-2500 rpm for 4 cycle engine of current conventional automobiles). Hard rubber pistol-grip case with 10' cable. 6" H x 7 1/2" L x 2" W. 2 lbs.

Kit ID-11 \$14.95

Assembled IDW-11 \$19.95

Now you can Learn Electronics and Build Practical Equipment at the same time!



A two-part course in **BASIC RADIO** that lets you learn by doing

- ✦ **Simplified basic theory**
- ✦ **2-part textbook/kit project**
- ✦ **You build a superheterodyne receiver**
- ✦ **Easy-to-understand instruction manuals**

Now, you can learn basic, practical radio theory and at the same time build a useful electronic product by following the simple instructions of the Heathkit Basic Radio Course, (Part I) and (Part II). Difficult mathematics are eliminated and all material is written in simple, easy-to-understand language, free of technical jargon. When you begin this basic radio course, you will start with "Basic Radio"—Part I (EK-2A), and learn the elementary theory and basic components of a radio. Some of the chapter headings are: "What is a Detector?", "What is a Tuned Circuit?", "How do Voice and Music Get From the Broadcast Station to Your Home?". As you explore the realm of radio fundamentals, you proceed to build a *crystal receiver*. Progressing from chapter to chapter, you improve upon this basic receiver by adding tuned circuits and tubes. The result is a *regenerative receiver* capable of pulling in stations hundreds of miles away.

Basic Radio Part II (EK-2B) advances your knowledge of radio theory and components with chapters titled: "What is a Local Oscillator?", "What is a Mixer?", and "What does Alignment Mean?". Additional parts are supplied to you in this kit which enable you to improve upon the receiver built in Part I. When you finish Part II, you have constructed a 2-band (550-1600 kc & 3-10 mc) *superheterodyne receiver* that picks up broadcast, amateur radio, marine and international stations. With the use of Heathkit's Accessory Cabinet AK-8, you are able to house your completed 2-band receiver in a handsome cabinet which can be placed in any room in your home.

Both parts of this Basic Radio Course are designed to educate youngsters and adults alike. From them you receive not only the wealth of information contained in the manuals, but are able to integrate theory with actual construction and experimentation. One of the finest ways to learn is by this type of "learn-by-doing" process, and with the Heathkit Basic Education Series you (and your youngsters) learn more, and more thoroughly.

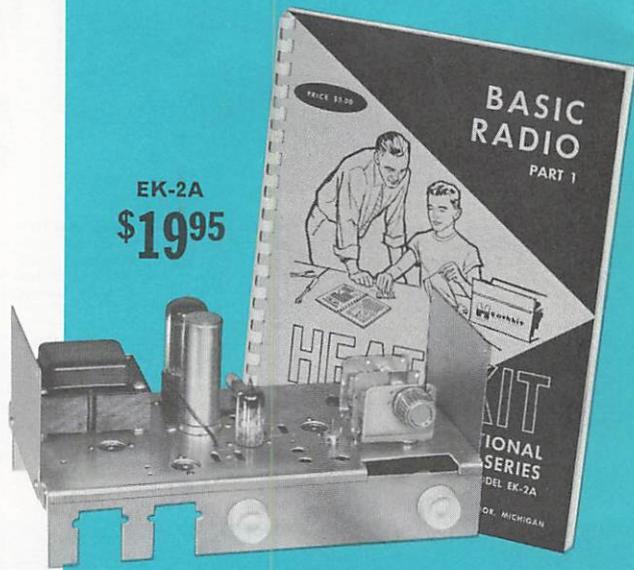
Basic Radio Part I (EK-2A) ... 6 lbs.....	\$19.95
Basic Radio Part II (EK-2B) ... 4 lbs.....	\$19.95
Accessory Cabinet AK-8. A handsome housing for your completed EK-2B Receiver... 4 lbs.....	\$3.95

This Heathkit teaches **BASIC ELECTRICITY** without complicated technical language

- ✦ **Designed by a science educator**
- ✦ **You build a handy DC volt-ohm-milliammeter**
- ✦ **Everyday terms — easy-to-understand manual of instructions**

Now you or your youngsters can learn about basic electricity easily and safely with this comprehensive educational kit offered by the Heath Company. The easy-to-understand *text-workbook* teaches and demonstrates such things as voltage, current, resistance, DC circuits, ohm's law, etc. While learning these primary facts, you also construct a practical *DC volt-ohm-milliammeter* which can be used for checking automobile circuits, etc., by just following the instructions in the manual. A science educator designed and developed this Heath Basic Electricity Kit especially for the "beginner" in the world of electricity and electronics. Because you start with the fundamentals of electricity and progress through the course by actually constructing a product, the educational process is enhanced by actual experience. This opens up a whole new world of understanding for the inquisitive mind of the student. You can't make a better investment in the "future scientist," than to get him a Heath Basic Electricity Kit. He'll learn-by-doing, the time-tested, proven, Heathkit way.

Basic Electricity Kit (EK-1) ... 4 lbs.....	\$19.95
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EK-2A
\$19.95



EK-2B
\$19.95
(less cab.)



EK-1
\$19.95

Proper Tools make kit building fun for everyone



Get perfect soldering results with the WELLER 8200K DUAL-HEAT SOLDERING GUN

One of the essentials of accurate, professional-type kit building is the proper use of solder. That's why the Triggermatic control on this Weller Soldering Gun is so useful; it switches instantly to "high" (125 watts) or "low" (90 watts) for just the right amount of heat to insure a good soldering job. High efficiency Weller tip combines superior heat transfer qualities of copper with iron plating for durability and unsurpassed efficiency. A prefocused spotlight on the gun illuminates your work. The soldering gun is completely preassembled and ready to plug-in. The complete kit contains: the gun, a soldering aid, a wire cleaning brush, and a roll of Kester radio solder. For building any Heathkit, you'll find this Weller Dual-Heat Soldering Gun superior in every way. 3 lbs.

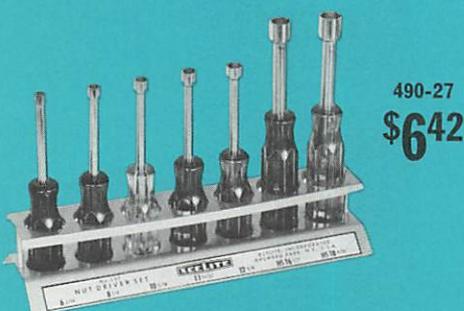
Model 490-26 **\$5.83**



All the tools you need for building any Heathkit are in the TK-1 TOOL SET

This tool set shows how simple it is to build any Heathkit. All the essentials are included: pliers, diagonal sidecutters, two screwdrivers and a 30-watt soldering iron. The pliers and sidecutters are equipped with vinyl insulated handles to provide maximum safety and convenience. Every one of the tools in this set is made from top quality case-hardened steel for rugged duty and long life. In addition to giving you all the necessary tools for Heathkit building, this set can prove valuable for other around-the-house "fixing." 2 lbs.

Model TK-1 **\$9.95**



"Tightening" problems are easily solved with the XCELITE #137 NUTDRIVER SET

Perfect for Heathkit building, as well as "fix-it-yourself" jobs around your home or shop, you'll find the seven color-coded nutdrivers in this set a real asset to your work or hobby. The nutdrivers have a handy self-supporting rack and each driver features a tough plastic handle. Included in the set are the following sizes: $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{11}{32}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{5}{8}$ ". The polished alloy steel shank of each nutdriver is drilled $1\frac{1}{4}$ " deep to allow nut tightening over long screws. The largest drivers have hollow shafts for nut installation on controls, switches, etc. 3 lbs.

Model 490-27 **\$6.42**



The GH-10 TOOL KIT gives your workshop a deluxe selection with economy

Containing tools that can take their place permanently and proudly on any home repair bench, the Heathkit GH-10 Deluxe Tool Kit includes a handsome assortment of practical devices that will help you do a better Heathkit building job. Included are: Midget Diagonal Cutters, Midget Longnose Pliers with plastic-covered handles by Klein; three screwdrivers by Excelite ($\frac{1}{8}$ " with 3" blade, $\frac{3}{16}$ " with 4" blade, and $\frac{5}{32}$ " with 3" blade and pocket clip). Also supplied in this complete selection of tools are: a Weller 8200K "Dual-Heat" Soldering Gun and a spool of Kester radio solder; a set of Excelite nut drivers ($\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{11}{32}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ "); and a spring-action Wire Stripper and Cutter by Miller. The GH-10 is an amazing value in a tool kit that will make your Heathkit building or any fix-it task easy—and fun! 6 lb.

Model GH-10 **\$19.95**

Here's a money saving microphone value . . . the Heathkit AK-1

This attractively-styled and versatile microphone kit will fill many needs for you in high fidelity recording jobs, public address systems, and amateur radio work. The AK-1 kit consists of a rugged crystal mike and three holders (mike stand adapter, lavalier neckband and desk stand). The frequency response of this fine accessory is 30 to 10,000 cps. Also included in the kit is an 8 ft. cable with phone plug. 1 lb.

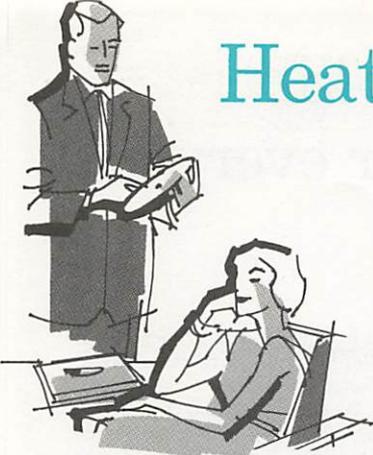
Model AK-1 **\$9.95**



NO DOWN PAYMENTS REQUIRED!

Now you can buy any Heathkit of \$25 or more with *no down payment!* Disregard down payment requirements shown in this catalog—to figure your monthly payments, check the order blank chart. These relaxed credit terms, coupled with our money-back guarantee that you can build any Heathkit, mean you can buy Heathkit with complete confidence and assurance of satisfaction.

Heathkit® Record Players and Changers



Never before has such a wealth of masterful performances in the field of music been available to you. Thanks to the modern miracles of high fidelity monophonic and stereophonic records, tapes, and radio, the world's greatest artists are at your beck and call with everything from Grand Opera to Jazz.

We here at Heath are proud of the part we have contributed to this renewed interest in better music. Our Heathkit products are found in music systems the world over, for both professional and home use. They have been put there by people who realize that Heathkit is the standard of value in hi-fi/stereo equipment. Begin enjoying today's modern miracle of music . . . begin with Heathkit for greater satisfaction, greater performance, greater value.

Just \$22.95 for a quality STEREO/MONO RECORD PLAYER

Here's a money saving kit design by Heath combined with the quality craftsmanship of an assembled mechanism by Garrard of England—the low-cost Heathkit AD-10 stereo/mono 4-speed record player. The resiliently mounted, accurately-formed turntable has a protective rubber pad for record safety. The tone arm has a convenient "finger-lift" and when the arm is moved into position the player starts. An automatic shut-off at the end of the record also disengages the drive mecha-

nism. Other features include: a plug-in cartridge holder and stylus pressure adjustment; a "pop" filter to reduce switching noise; and a 4-pole motor. Flutter and wow is below .28% at 33 $\frac{1}{3}$ rpm. With 12" records, the unit requires a mounting area of 15" W x 13" D x 6" H. Cables are included. Cocoa brown and beige color. 9 lbs.

Kit AD-10C (Sonotone 8TA4-SD ceramic stereo cartridge, diamond and sapphire styli) . . . \$3.30 dn., \$5 mo.	\$32.95
Kit AD-10A (GE VR-227 magnetic stereo cartridge, diamond stylus) . . . \$3.80 dn., \$5 mo.	\$37.95
Kit AD-10B (Shure M8D magnetic stereo cartridge, diamond stylus) . . . \$3.90 dn., \$5 mo.	\$38.95
Kit AD-30 (Mechanism only; less cartridge, base and cables) . . . 7 lbs.	\$22.95



AD-10C
\$32.95

- ✦ *Garrard of England quality*
- ✦ *4 speeds—16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45 & 78 rpm*
- ✦ *Preassembled mechanism, arm and base*
- ✦ *Available with or without cartridge*

The FAIRCHILD TURNTABLE, arm, cartridge and base . . . now only \$124.95!

- ✦ *33 $\frac{1}{3}$ & 45 rpm speeds*
- ✦ *"Push-pull" speed selector knob*
- ✦ *Linear separation, high compliance "moving magnet" stereo cartridge*
- ✦ *Hidden belt drive is rumble-free*
- ✦ *Anti-skate arm-transport*
- ✦ *.0007" diamond stylus*
- ✦ *Rifle-drilled bearing well*
- ✦ *Shock-mounted walnut top plate with matching wrap-around base*
- ✦ *Separate on-off switch*
- ✦ *Speed sentinel control*

This Fairchild turntable is the ultimate in precision workmanship, designed to satisfy the most discerning music connoisseur. The entire combination includes the Fairchild 440 turntable in kit form, a completely assembled Fairchild 500 tone arm, Fairchild SM-2 cartridge, and the Fairchild 440 CBW walnut mounting board and matching wrap-around base . . . all at a new low price—exclusive with Heath. The 33 $\frac{1}{3}$ and 45 rpm speeds are controlled by a push-pull selector knob. "Speed Sentinel" control permits $\pm 1\frac{1}{2}\%$ variation for recording studio accuracy (strobe disc is included). Solid cast aluminum turntable is covered with compliant rubber pad for record safety. Arm transport has anti-skate device and dynamic balancing. 36 lbs.

Kit ADP-21 . . . \$12.50 dn., \$11 mo. **\$124.95**

SPECIFICATIONS—Impedance: 200 ohms per channel. **Inductance:** 500 mh per channel. **Dynamic mass:** 2 milligrams. **Track force:** 2.5 grams. **Compliance:** 5 x 10⁻⁶cm/dyne. **Response:** 20-15,000 cps (± 2 db). **Separation:** 20 db (± 2 db) from 20-15,000 cps. **Recommended load:** 47K ohms per channel. **Output:** 5 mv at 3.8 cm/sec. **Wow:** .08% peak to peak. **Flutter:** Immeasurable. **Rumble (vertical and lateral):** -56 db below 7 cm/sec at 500 cps. **Dimensions:** 17 $\frac{1}{2}$ " W x 15" D, 3 $\frac{1}{2}$ " below mtg. board.



ADP-21
\$124.95

are better for every need!



Only \$37.95 for Heath's New Automatic STEREO RECORD CHANGER KIT!

Now you can enjoy the convenience of stereophonic or monophonic automatic record changing at a new low cost with the Heathkit AD-80 . . . and prices start at just \$37.95. Featuring a new 11" oversize turntable, the AD-80 also has an anti-skate device to protect your records. And the plug-in cartridge mounting head makes inspection or replacement simple. The AD-80 plays 16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45 and 78 rpm records, either automatically or manually, with automatic "shut-off" after the last record is played. The kit is easy to assemble and you need no special tools. Color styled in brown and beige. Add a stereo record

music source to your music system, get the Heathkit AD-80 . . . the inexpensive and practical way to a precision automatic record changer. 10 lbs.



AD-80C
\$37.95

- ✦ Stereo-mono function switch
- ✦ "Speed-minder" lets you mix 33 $\frac{1}{3}$ & 45 rpm records
- ✦ "Turntable pause" protects records
- ✦ Quick-change cartridge holder

Kit AD-80C (Sonotone 8TA4-SD ceramic stereo cart., diamond and sapphire styli) . . . \$3.80 dn., \$5 mo.	\$37.95
Kit AD-80A (GE VR-227 magnetic stereo cart., diamond stylus) . . . \$4.20 dn., \$5 mo.	\$41.95
Kit AD-80B (Shure M8D magnetic stereo cart., diamond stylus) . . . \$4.30 dn., \$5 mo.	\$42.95
ADA-80-1: 45 RPM Adapter Spindle . . . 2 lbs.	\$2.95

SPECIFICATIONS—Flutter & wow: .2% rms or less. **Turntable speed:** Accurate within $\pm 2\%$. **Change cycle:** Varies with turntable speed, completed in 8 seconds at 33 $\frac{1}{3}$ rpm. **Motor type:** 4-pole hum shielded. **Type of drive:** Friction. **Tracking force variation:** Less than 0.9 grams from first to last record. **Record capacity:** 10-12", 12-10". **Control functions:** on-off switch with "pop filter"; manual reject; manual speed selector. **Dimensions:** 13 $\frac{1}{4}$ " W x 11 $\frac{1}{4}$ " D x 5-11/16" above and 2 $\frac{1}{2}$ " below mounting board.

CHANGER BASES For AD-80 and AD-60 models (3 lbs.)

Assembled ADA-50M (brown mahogany)	\$5.95
Assembled ADA-50W (walnut)	\$5.95
Assembled ADA-50U (unfinished)	\$4.95

- ✦ 4 speeds—automatic or manual
- ✦ 11" oversize turntable
- ✦ Diamond stylus
- ✦ Plug-in cartridge head



AD-60C
\$59.95
(less base)

Deluxe STEREO/MONO AUTOMATIC RECORD CHANGER . . . Heathkit AD-60

In addition to the many features highlighted above, the Heathkit AD-60 Deluxe Automatic Record Changer has an automatic "shut-off," a muting switch and "pop" filter that eliminates noises during "change" and "shut-off" cycles. It plays 16, 33 $\frac{1}{3}$, 45 and 78 rpm records. The quick-change cartridge assembly makes changing or inspection simple. Has anti-skate device and jam-proof mechanism. Special AC socket is switched by changer mechanism for accessories. Color: Satin black and gold trim. 12 lbs.

SPECIFICATIONS—Flutter & wow: 0.18% rms or less. **Turntable speed:** Accurate within $\pm 2\%$. **Change cycle:** Completed in 9 seconds. **Motor type:** 4-pole, hum shielded. **Type of drive:** Friction. **Tracking force:** 2 grams reliably initiates change cycle. **Record capacity:** Maximum of 10 records. **Control functions:** On-off switch; Manual Reject; Automatic-Manual Speed Selector; Stereo/Mono Switch (parallels the outputs of the two stereo channels for mono operation). **Dimensions:** 13 $\frac{1}{2}$ " W x 12" D x 5 $\frac{1}{2}$ " above and 3" below mounting board.

Kit AD-60C (Sonotone 8TA4-SD ceramic stereo cart., diamond and sapphire styli) . . . \$6 dn., \$6 mo.	\$59.95
Kit AD-60A (GE VR-227 magnetic stereo cart., diamond stylus) . . . \$6.20 dn., \$6 mo.	\$61.95
Kit AD-60B (Shure M8D magnetic stereo cart., diamond stylus) . . . \$6.30 dn., \$6 mo.	\$62.95
Model ADA-60-1 45 rpm adapter spindle . . . 2 lbs.	\$2.95
Preassembled Bases . . . see ADA-50 series above	

Now, Pick the Stereo Twins that fit your Stereo Amplifiers are designed

The Heathkit AJ-11 AM/FM Multiplex-Engineered Tuner Offers top-flight styling and performance at medium price

Offering handsome appearance as well as fine performance, the AJ-11 AM/FM Tuner is designed as the perfect companion to the Heathkit AA-151 Amplifier below. Easy, accurate tuning is assured with the two eye-tube indicators. Engineered for full FM stereo reception when used with converter (see p. 20 for details). Drift-free FM operation provided with the preassembled, prealigned FM front end. A 3-position AFC switch holds FM stations to proper settings, regardless of signal strength. The AM Fidelity Switch gives you either increased selectivity or greater fidelity. Individual flywheel tuning provides selection ease and precision. There is a built-in AM rod antenna and FM line antenna, as well as terminals for external AM and FM antennas. Output level controls can be adjusted to suit your preamplifier. Multiplex adapter output jack is included. Large slide-rule dial is

edge-lighted to accentuate numerals. Luggage tan vinyl-clad steel case with charcoal-grey front panel. 20 lbs.

Kit AJ-11 . . . \$7 dn., \$7 mo. \$69.95

Assembled AJW-11 . . . \$13 dn., \$12 mo. \$129.95

SPECIFICATIONS (FM)—Tuning range: 88-108 mc. **Quieting sensitivity:** 2.5 uv for 20 db quieting; 3.5 uv for 30 db; 25 uv for max. quieting (43 db). **Image ratio:** —45 db, 25 uv, 30% mod, 98 mc. **IF frequency:** 10.7 mc. **IF rejection:** (98 mc) —63 db. **Output:** Cathode follower type, variable to 800 ohms; level: 0.45 v, 25 uv, 30% mod. **Frequency response:** ±2 db, 20-20,000 cps. **Harmonic distortion:** Less than 1%, 25 uv, 100% mod., 98 mc. **Hum and noise:** —43 db, 25 uv, 30% mod. **RF stage:** 1 tuned RF amplifier. **AFC:** Switched, 3-positions, off-half-full. **Multiplex output:** Output supplied for external multiplex adapter.

SPECIFICATIONS (AM)—Tuning range: 550-1600 kc. **Sensitivity:** Narrow position: 1400 kc, 10 uv; 1,000 kc, 15 uv; 600 kc, 40 uv. **Frequency response:** ±2.5 db, 20-9,000 cps (40 db down at 10 kc). **Image rejection:** 1400 kc, 46 db; 1,000 kc, 45 db; 800 kc, 60 db. **IF frequency:** 455 kc. **IF rejection:** 1400 kc, 40 db; 600 kc, 33 db. **Output:** Cathode follower type, variable to 800 ohms; level, 1 v, 750 uv, 30% mod. **Harmonic distortion:** less than 1%, 750 uv, 95% mod. **Hum and noise:** 30 db down (5,000 uv, 30% mod). **RF stage:** 1 tuned RF amplifier. **AVC:** Derived from voltage doubler detector.

SPECIFICATIONS (general)—Tuning indicators: 2 magic eye tubes, one AM, one FM. **Controls:** AM bandwidth, broad/narrow; function selector, AM/Stereo/FM; FM AFC, full/half/off; AC power on-off; AM tuning; FM tuning; AM level; FM level. **Tube complement:** (AM) 2-6BA6, 1-6BE6, 1-6BN8, 1-6ME5. (FM) 1-6CY5, 1-6EZ8, 3-6AU6, 1-6BN8, 1-6ME5. Transformer operated, full wave voltage doubler with 2 silicon rectifiers. **Power requirements:** 117 v, 50-60 cycles, 40 watts. **Dimensions:** 15½" W. x 5¼" H. x 11" D.



AJ-11
\$69.95

Kit Form
or
Factory
Assembled

- ✦ Works with new Multiplex Converter for stereo FM
- ✦ Two eye-tube tuning indicators
- ✦ Adjustable AFC on FM
- ✦ New built-in FM antenna
- ✦ Fidelity switch for AM

- ✦ 28 hi-fi rated watts (14 per channel)
- ✦ 4 stereo inputs
- ✦ 6 versatile controls
- ✦ Matches the AJ-11 AM/FM Tuner perfectly

The new Heathkit AA-151 STEREO AMPLIFIER delivers a full 28 hi-fi rated watts for only \$59.95 and gives you the latest in high-style design features

The Heathkit AA-151 is a medium-priced stereo amplifier that delivers a full 28 hi-fi rated watts (14 per channel) and in addition gives you styling, features and performance that surpasses other units which sell for twice its price. Exquisitely designed with the latest in functional characteristics, the AA-151 has a handsome luggage-tan vinyl-clad steel cabinet and charcoal grey front panel that blends with any room decor in your home. Its exciting lines match perfectly with those of the Heathkit AJ-11 AM/FM Stereo Tuner and together they make a stereo control center which is unsurpassed for economy and value despite the low kit price. The 4-position source selector enables you to select Mag. Phono, Crystal Phono, Tuner or Auxiliary inputs. The 6-position mode selector lets you select not only "Stereo" and "Stereo Reverse," but complete monophonic operation of all inputs. The clutched volume control provides single or dual channel adjustments. The tone controls are ganged, providing adjustment of both channels simultaneously. 28 lbs.



AA-151
\$59.95

Kit Form
or
Factory
Assembled

Kit AA-151 . . . \$6 dn., \$6 mo. \$59.95

Assembled AAW-151 . . . \$12 dn., \$11 mo. \$119.95

SPECIFICATIONS—Channels: 2. **Power output:** 28 watts (14 w. per channel) Heath Hi-Fi Rating; 32 watts (16 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db from 20 cps to 20 kc at 14 watts output per channel. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc at 14 watts output per channel. **Intermodulation distortion:** Less than 2% at 14 watts output per channel using 60 cps and 7 kc signal mixed 4:1. **Hum and noise:** Mag. phono input, 65 db below 14 watts; Tuner and crystal phono 65 db below 14 watts. **Channel separation:** Better than 35 db. **Input sensitivity:** For 14 watt output each channel (tone controls in "Flat" position); mag. phono, 0.004 volts at 1 kc; crystal phono, 0.2 volts; tuner and aux., 0.2 volts. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 10. **Controls:** Dual clutched volume, ganged bass; ganged treble; 4-position source selector; 6 position mode selector speaker phasing switch. **Tube complement:** 2-6EU7, 2-6AU6, 2-6AN8, 4-EL84/6BQ5, 1-GZ34/5AR4. **Power requirements:** 117 volts, 50-60 cycles, 130 watts. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 15½" W x 5¼" H x 11" D.

budget! These Heathkit® Tuners and for each other for complete performance



The Deluxe Heathkit AJ-30 AM/FM Multiplex-Engineered Tuner brings you the finest at low cost

The Heathkit AJ-30 Deluxe AM/FM Stereo Tuner offers you the finest value at any price in a completely versatile and quality engineered tuner. This time-proven design was engineered from inception to fully utilize the new FCC approved multiplex stereo FM system (see page 20 for details). The AJ-30's individual flywheel tuning and individual tuning meters for AM and FM insure ease of operation with visibly measured accuracy. Also provided in this deluxe tuner are an AM bandwidth-fidelity switch, an FM multiplex converter output jack and a function selector switch for AM, FM or Stereo AM/FM. It features a 300 ohm FM antenna input and a built-in FM line coupler antenna. The AJ-30 also has a built-in AM rod antenna and terminals for outside AM and FM antennas. Another outstanding feature is the balanced, full-wave germanium diode AM detector. Delayed and amplified Automatic Volume Control assures quality AM reception while Automatic Frequency Control makes FM listening a joy. In addition to these superb qualities of performance, the Heathkit AJ-30 styling

is the fashion leader of the industry. Its smartly-designed luggage-tan vinyl-clad steel cabinet and polished anodized trim will highlight any room setting. The refracted lighting from above is glare-free and provides positive dial illumination at all times. If you want the very best AM/FM Stereo Tuner on the market today, you should choose the Heathkit AJ-30 with its superbly-engineered 16-tube circuit. For ease of assembly, you'll like the three printed circuit boards that also provide high stability. The wired, prealigned 3-tube tuned cascode FM tuning unit is also indicative of Heathkit quality and dependability, all at low prices which save you money over competitive models with similar features. 24 lbs.

Kit AJ-30 . . . \$10 dn., \$9 mo. \$99.95
Assembled AJW-30 . . . \$16 dn., \$14 mo. \$159.95

SPECIFICATIONS FM—Tuning range: 88 mc to 108 mc. **IF frequency:** 10.7 mc. **Antenna:** 300 ohm balanced (or internal for local reception). **Output impedance:** Low impedance up to 4000 ohms. **Output voltage:** Nominal .5 volts (with 2 uv 30% modulation in). **Cathode follower:** Variable up to 4000 ohms. **Quieting sensitivity:** 2 uv for 20 db of quieting; 3 uv for 30 db of quieting; 20 uv for full quieting (40 db). **Maximum deviation sensitivity:** 5 uv; (400 cycle 100% modulation) **Deviation sensitivity:** 20 KC (1100 uv in). **Harmonic distortion:** Less than 1% (1100 uv 400 cycle 100% modulation). **Image ratio:** 40 db. **Capture ratio:** 18 db. **AFC correction factor:** 12 db. **Amplitude modulation suppression:** 25 db. **Hum and noise:** 40 db below 30% modulation (20 uv in).

SPECIFICATIONS AM—Sensitivity, narrow bandwidth position: 1400 kc, 4.5 uv; 1000 kc, 5 uv; 600 kc, 5.5 uv (at antenna terminals through standard IRE dummy antenna, .1 volt RMS reference output). **Reference output .1 volt RMS:** 600 kc 5.5 uv. **Sensitivity change, narrow to broad position:** -5 db. **IF bandwidth, narrow:** 14 kc, 6 db down; **Broad:** 20 kc, 6 db down. **Image ratio:** 1400 kc 55 db; 600 kc 80 db. **Harmonic distortion:** Less than 1%. **Hum and noise:** 35 db below 30% modulation (1000 kc unmodulated with 100 uv in). **IF rejection ratio:** 1400 kc 42 db; 600 kc 30 db. **Power supply:** Transformer operated 50-60 cycle, 100 watts. **Tube complement:** (6) 6AU6, (3) 6BA6, (1) 6BS8, (1) 6AB4, (1) 12AT7, (1) 6AL5, (1) 6BE6, (2) 12AU7. **Dimensions:** 15 1/2" W. x 5 1/2" H. x 13 1/2" D.

Kit Form
or
Factory
Assembled



- ✦ 5 stereo inputs
- ✦ Mixed channel speaker output
- ✦ Separate mono mag-phono cartridge input
- ✦ Versatile controls for every function

AJ-30
\$99⁹⁵

Kit Form
or
Factory
Assembled

Deluxe in every way, the Heathkit AA-100 STEREO AMPLIFIER delivers 50 Hi-Fi Rated Watts!

This Heathkit AA-100 is truly the finest 50-watt stereo amplifier on the market today. Hi-fi rated, it delivers a full 25 watts per channel and features 5 stereo inputs, including one which can take tape heads directly without additional preamplification. Also featured is a separate input for mono mag phono. In addition to the regular stereo speaker outputs, a mixed-channel speaker output is provided for stereo center "fill-in" or monophonic sound in other rooms. Cathode follower outputs are provided for tape recorder. Among the many controls in this matchless instrument are: preamplifier input level controls, power amplifier input level controls, hum controls, "mode" selector, phase reversal switch, balance and separation controls, ganged volume controls and separate concentric bass and treble tone controls. The exquisite styling of the AA-100 with its luggage-tan vinyl-clad metal case and charcoal grey front panel make it suitable for any room decor. It's also designed to match perfectly with the AJ-30, Heathkits' Deluxe AM/FM Stereo Tuner. Together, you'll find these two top

quality products from Heath will bring you the finest in hi-fi/stereo at lowest possible cost. 31 lbs.

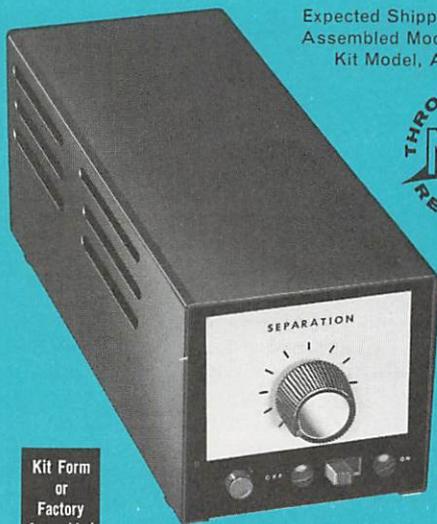
Kit AA-100 . . . \$8.50 dn., \$8 mo. \$84.95
Assembled AAW-100 . . . \$14.50 dn., \$13 mo. \$144.95

SPECIFICATIONS—Channels: 2. **Power outputs:** 50 watts (25 w. per channel). Heath Hi-Fi Rating; 60 watts (30 w. per channel). IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db from 30 cps to 15 kc at 25 watts output per channel. **Harmonic distortion:** Less than 0.5% at 25 watts, 1 kc. Less than 2% at 25 watts, 30-15,000 cps (each channel). **Intermodulation distortion:** Less than 1% at 25 watts, 60 and 6,000 cps signals mixed 4:1 (each channel). **Hum and noise:** Mag phono, 55 db below 25 watts output at 6 mv sensitivity. Tape head, 35 db below 25 watts output. Tuner and aux. inputs, 70 db below 25 watts output. **Channel separation:** 42 db min. at 1 kc. **Input sensitivity:** For 25 watts output per channel; mono mag. phono, 1.5 mv; stereo mag. phono, 1.5 mv; tape head, 1 mv; tuner, 0.2 v.; aux. 1 & 2, 0.2 v. **Input impedance:** Mag phono, 47 K ohms (may be changed); tape head, 470 K ohms; tuner & aux., 250 K ohms each. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 15. **Controls:** Function switch (4-position); selector switch (6-position); balance control (total range, 16 db); separation control; ganged level controls; dual concentric bass & treble controls; phase and power switch. **Tube complement:** 2-EF86, 4-12AX7, 2-7199, 4-7591, 1-GZ34, 1-selenium bias rectifier. **Power requirements:** 117 volts, 50-60 cycles, 150 watts. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 5 1/2" H. x 15 1/2" W. x 13 1/2" D. (allow 1" for cables at rear).



AA-100
\$84⁹⁵

Expected Shipping Dates:
Assembled Model, July 21
Kit Model, Aug. 11



Kit Form
or
Factory
Assembled

AC-11
\$32.50

**ENJOY STEREO FM
WITH ANY HEATHKIT FM TUNER!**
Save by ordering tuner and converter together

The new Heathkit AC-11 FM Multiplex Converter can be purchased at the same time that you order your Heathkit tuner. For your convenience, we have established the following model numbers which combine the AC-11 Multiplex Converter with your choice of Heathkit FM tuners for ease of ordering, and extra savings.

- Kit AJ-30S** (includes AC-11 Converter kit above and AJ-30 Tuner kit, p. 19) 28 lbs., no money down, \$12 mo. **\$129.95**
- Assembled AJW-30S** (includes assembled ACW-11 Converter above and assembled AJW-30 Tuner, p. 19) 28 lbs. no money down, \$21 mo. **\$211.20**
- Kit AJ-11S** (includes AC-11 Converter kit above and AJ-11 Tuner kit, p. 18) 23 lbs., no money down, \$10 mo. **\$99.95**
- Assembled AJW-11S** (includes assembled ACW-11 Converter above and assembled AJW-11 Tuner, p. 18) 23 lbs. no money down, \$18 mo. **\$181.20**
- Kit FM-4S** (includes AC-11 Converter Kit above and FM-4 Tuner kit below) 12 lbs., no money down, \$7 mo. **\$69.95**
- Assembled FMW-4S** (includes assembled ACW-11 Converter above and assembled FMW-4 Tuner below) 12 lbs. no money down, \$11 mo. **\$114.20**

Attention MX-1 Owners...
Save \$20 on the New AC-11 Multiplex Converter!

Here's a special offer to all owners of the original Heathkit MX-1 FM Multiplex Adapter. Your old MX-1 adapter is worth \$20 on the purchase of the new Heathkit AC-11 Multiplex Converter described above. When you send in your order for the AC-11, send us your old MX-1 adapter and the date on which you purchased it... we will give you a \$20 trade-in allowance.

Kit Form
or
Factory
Assembled



FM-4
\$39.95

STEREO FM IS HERE!

On April 20, 1961 the Federal Communications Commission authorized FM radio stations across the nation to begin broadcasting multiplex stereophonic FM programs on June 1, 1961. Many FM stations have recognized the tremendous possibilities of this new form of broadcasting and its benefits to persons whose stereo systems can receive stereo FM. As each day passes, more stations convert to this stereo method of broadcasting FM music—if stations in your locality are not yet broadcasting multiplex stereo, perhaps a call from you expressing your interest in this medium will hasten their decision to change over.

Many have asked, "What is stereo FM? How does it work?" Simply, here are the highlights of this complex and exciting new system. First, the stereo FM station broadcasts a composite signal made up of the sound from a left and right stereo source. This composite signal is picked up by the FM receiver you own, taken from the multiplex output jack, and fed into the input of the FM stereo converter. In the Converter, the composite signal is separated, the difference between the two stereo signals is detected and reinserted, and the original left and right channel sounds are recovered as they were broadcast. The left and right channel outputs of the stereo Converter are fed into the stereo amplifier where the signals are handled like other two-channel stereo.

Here is the NEW HEATHKIT FM MULTIPLEX CONVERTER
you need to receive stereo FM

- ✦ **Designed especially for the new FCC approved FM Multiplex system**
- ✦ **Easy-to-use with a minimum of controls**
- ✦ **Separation control for maximum stereo effect**
- ✦ **Cathode follower outputs for installation versatility**
- ✦ **Built-in power supply** ✦ **Slim, black metal cabinet**

Now, with the Heathkit AC-11 FM Multiplex Converter, you can get stereo FM programs from any good quality FM tuner which has provision for multiplex output. The Heathkit AC-11 multiplex converter is designed specifically for stereo FM broadcast reception of the F.C.C. approved FM multiplex system. Easy-to-build, the AC-11 needs only simple adjustments and it's ready to plug into the multiplex output jack of your FM tuner and the input jacks of your stereo amplifiers. It has 3 tubes, a self-contained, built-in fused power supply with a silicon rectifier and prealigned coils. Low distortion is insured through use of a simplified balanced diode detector. Controlled signal matrixing assures maximum separation of channels and gives you true stereo effect; a front panel separation control is provided for fine adjustment. The frequency response is 50 cps to 15 kc with built-in de-emphasis. It features cathode follower outputs for both A & B channels; this eliminates high-frequency loss and allows mounting of the amplifiers at any distance from the converter. The AC-11 Converter includes 3 connecting audio cables (1 input, 2 output).

If your FM stations are broadcasting FM Stereo now or if they will be in the future, you should order your Heathkit AC-11 FM Stereo Converter immediately and be ready to enjoy the exciting new sound of Stereo FM. 3 3/8" H. x 3 1/2" W. x 9 7/8" D. 4 lbs.

- Kit AC-11** . . . no money down, \$5 mo. **\$32.50**
- Assembled ACW-11** . . . no money down, \$6 mo. **\$56.25**

A Quality FM Tuner for just \$39.95!

- ✦ **Accepts AC-11 Stereo FM Converter**
- ✦ **Switched AFC**
- ✦ **5 tube circuit (7 tube functions)**
- ✦ **Flywheel tuning and slide-rule dial**

The Heathkit FM-4 is the low cost way to enjoy the pleasures of FM radio. And with the Heathkit AC-11 Multiplex Converter (above) you're all set to receive stereo FM broadcasts, for the FM-4 has a multiplex output jack. The FM-4 is carefully engineered and has an easy-to-build circuit. Flywheel tuning and switched Automatic Frequency Control "locks in" stations for drift free performance. Cathode follower output lets you install the FM-4 any distance from the amplifier. Features a built-in power supply. Black and gold design. 8 lbs.

- Kit FM-4** . . . \$4 dn., \$5 mo. **\$39.95**
- Assembled FMW-4** . . . \$6.30 dn., \$6 mo. **\$62.95**

SPECIFICATIONS—Tuning range: 88 to 108 mc. **Quieting sensitivity:** 2.5 uv for 20 db of quieting; 3.5 uv for 30 db of quieting; 25 uv for maximum quieting (45 db). **IF frequency:** 10.7 mc. **Image ratio:** 45 db. **AFC correction factor:** 75 kc per volt. **AM suppression:** 25 db. **Frequency response:** ±2 db 20-20,000 cps. **Harmonic distortion:** less than 1.5%. **1100 uv, 400 cycles 100% modulation. Intermodulation distortion:** less than 1%. **60 cycles and 6 kc; mixed 4:1 1100 uv, 30% modulation. Antenna:** 300 ohms unbalanced. **Output impedance:** 600 ohms (cathode follower). **Output voltage:** nominal .5 volt (with 30% modulation, 20 uv signal). **Power requirements:** 105-125 volts 50/60 cycle AC at 25 watts. **Overall dimensions:** 4 1/2" H. x 13 1/2" W. x 5 1/2" D.

Heathkit®—The low-cost way to enjoy 4-track Stereo Tapes

Heathkit AD-70 . . . a quality

4-track STEREO TAPE PLAYER for just \$74.95

- ✦ Plays through any "tape head" input
- ✦ 3 $\frac{3}{4}$ " or 7 $\frac{1}{2}$ " speed
- ✦ Single control lever
- ✦ Mechanism Same As TR-1AQ below

The Heathkit AD-70 can operate with any stereo amplifier or preamplifier that has a tape head input, such as the Heathkit AA-100 or SP-2A, all without extra electronics. This low cost tape player brings you playback of 4-track stereo tapes with precision and saves you money at the same time. It operates at 3 $\frac{3}{4}$ " or 7 $\frac{1}{2}$ " IPS speeds and a single control lever selects "play," "fast-forward" or "rewind." Also has "on-off" switch. Can be mounted vertically, horizontally or in the bases listed below. 15 $\frac{1}{2}$ " L x 9 $\frac{1}{2}$ " W x 4" D. 11 lbs.

Kit AD-70 (less base) . . . \$7.50 dn., \$7 mo. **\$74.95**

ASSEMBLED TAPE RECORDER BASES

As shown on AD-70 illustration; also fits TR-1A or TR-1AQ; 3 lbs.

Model ADA-70M: Mahogany **\$6.95**

Model ADA-70W: Walnut **\$6.95**

Model ADA-70U (Unfinished) **\$4.95**

Record and playback in stereo with these low cost HEATHKIT 4-TRACK STEREO TAPE RECORDERS

- ✦ Eye-tube recording level indicators
- ✦ Safety-interlock prevents accidental erasing
- ✦ 3 $\frac{3}{4}$ " & 7 $\frac{1}{2}$ " IPS speeds
- ✦ Fan-cooled motor

Heath's TR-1AQ 4-track stereo tape recorder has earned a world-wide reputation for playing and recording mono or stereo tapes with high fidelity and low cost. The tape mechanism has a single control lever that enables you to select "play," "rewind," and "fast-forward" functions easily. Separate record and playback volume controls on each amplifier and separate "eye-tube" recording level indicators assure top quality performance. A safety interlock prevents accidental tape erasure. Accommodates tape reels up to 7" and easily adjusts to operate at speeds of 3 $\frac{3}{4}$ " or 7 $\frac{1}{2}$ " IPS. Includes microphones.

Kit TR-1AQ (4-track stereo version; has 2 preamps & 2 mikes) . . . 36 lbs. . . . \$15 dn., \$13 mo. **\$149.95**

Kit TR-1A (half-track mono version; has 1 preamp & 1 mike) . . . 23 lbs. . . . \$10 dn., \$9 mo. **\$99.95**

SPECIFICATIONS—Frequency response: ± 3 db 40-15,000 cps @ 7 $\frac{1}{2}$ " IPS. Flutter and wow: below 0.35%. Harmonic distortion: less than 2% at full output. Dimensions: 15 $\frac{1}{2}$ " L x 9 $\frac{1}{2}$ " W x 4" D. Vertical or horizontal mounting.

Get high quality STEREO TAPE RECORDING

and PLAYBACK FACILITIES with Heathkit—only \$169.95

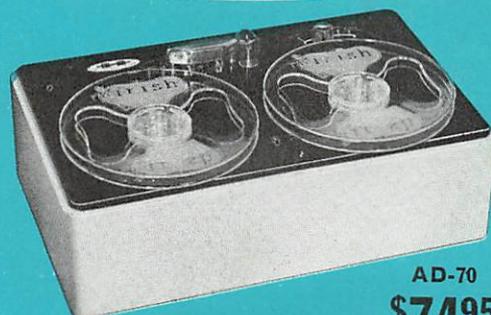
The Heathkit TR-1E provides stereo playback of 4-track tapes plus half-track monophonic record and playback at 3 $\frac{3}{4}$ " or 7 $\frac{1}{2}$ " IPS tape speeds. Separate record and playback tape heads and preamplifiers permit monitoring while recording. A "pause" control is provided for editing ease. A db meter indicates recording level, bias setting or playback level. The tape mechanism is completely assembled. With the two circuit boards provided, the assembly of the electronics is simple and fast. Minimum distortion and low noise level is achieved with the push-pull bias-erase oscillator. Features NARTB tape equalization. Outperforms tape recorders selling for \$350 to \$400. 15 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " H x 10 $\frac{3}{4}$ " D. Less microphones. 30 lbs.

Kit TR-1E . . . \$17 dn., \$15 mo. **\$169.95**

Kit TR-1C (mono version) . . . half-track mono record & playback . . . \$16 dn., \$14 mo. **\$159.95**

Recommended microphones: see p. 15, Model AK-1 . . . 1 lb. **\$9.95 ea.**

SPECIFICATIONS—Tape speed: 7.5 and 3.75" per second. Maximum reel size: 7". Frequency response: (record-playback): ± 2.5 db, 30-12,000 cps at 7.5 IPS. ± 2.5 db, 30-6,500 cps at 3.75 IPS. Harmonic distortion: 1% or less at normal recording level; 3% or less at peak recording level. Signal-to-noise ratio: 50 db or better, referred to normal recording level. Flutter and wow: 0.3% RMS at 7.5 IPS. 0.35% RMS at 3.75 IPS. Heads (3): erase, record, and in-line stereo playback. Playback equalization: NARTB curve, within ± 2 db. Inputs: (2); Microphone and line. Input impedance: 1 megohm. Outputs: (2); A and B stereo channels. Output levels: approximately 2 volts maximum. Output impedance: Approximately 600 ohms (cathode followers). Recording level indicator: Professional type db meter. Bias-erase frequency: 60 kc. Timing accuracy: $\pm 2\%$. Power requirements: 105-125 volts AC, 60 cycles, 32 watts. Dimensions: 15 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D x total height 10 $\frac{3}{4}$ ". Mounting: requires minimum of 8 $\frac{1}{2}$ " below and 1 $\frac{1}{2}$ " above mounting surface. May be operated in either horizontal or vertical position.



AD-70
\$74.95



TR-1AQ
\$149.95



TR-1E
\$169.95

- ✦ Recording level meter—pause control—NARTB tape equalization
- ✦ Tape transport assembled—just build the electronics
- ✦ Professional features—compares to \$400 units



Heathkit® Amplifiers and Preamplifiers

- ✦ 14 "hi-fi" rated watts
- ✦ 3 inputs—complete controls
- ✦ Built-in preamplifier
- ✦ Separate bass and treble tone controls
- ✦ Attractive "bookshelf" styling

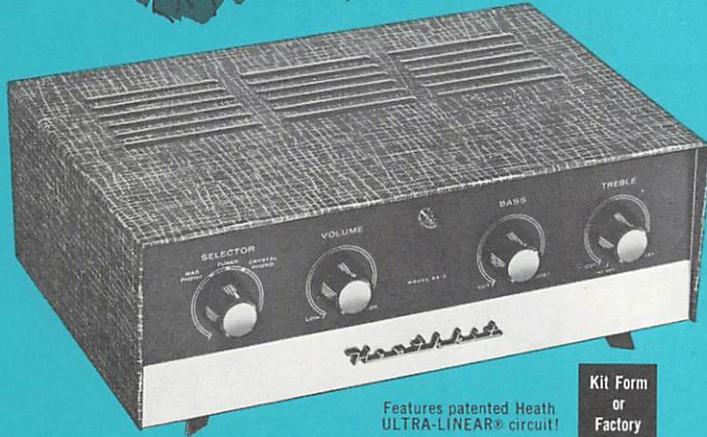
EA-3
\$29.95

The Heathkit EA-3 MONOPHONIC AMPLIFIER combines quality, power and low cost

Thousands have recognized the great dollar value of the Heathkit EA-3. This attractively-styled unit delivers a full 14 watts of "hi-fi" rated monophonic power with its combination amplifier and preamplifier—and it's just \$29.95 in kit form. The EA-3 gives wide range sound reproduction with low noise and distortion levels. Three separate inputs will accommodate magnetic and crystal phono, and tape recorder or tuner sources. A push-pull output circuit with special output transformer combine with miniature tubes for compact chassis layout and remarkable fidelity. Controls include: selector switch, separate tone controls for treble and bass, and volume control. Filament-balance adjustment assures minimal AC hum at low volume. Black leather-like vinyl cover on steel case with gold accents. 15 lbs.

Kit EA-3...\$3 dn., \$5 mo. **\$29.95**
Assembled EAW-3...\$5.30 dn., \$5 mo. **\$52.95**

SPECIFICATIONS—Power output: 14 watts Heath Hi Fi Rating; 15 watts IHFM Music Power Output (0.7% THD, 1 kc). Power response: ±1 db 20-20,000 cps, 14 watts output. Harmonic distortion: Less than 3% 30 cps to 15 kc, at 14 watts output. Intermodulation distortion: Less than 1% at 16 watts output using 60 and 6,000 cps signals, 4:1. Hum and noise: mag phono input, 47 db below 14 watts; tuner and crystal phono, 63 db below 14 watts. Input sensitivity: For 14 watts output; mag phono, 0.004 v at 1 kc; crystal phono, 0.2 v; tuner 0.25 v; with tone controls flat. Outputs: 4, 8 and 16 ohms. Damping factor: 4.3:1. Controls: 3-position function selector switch, bass and treble tone controls, volume control. Tube complement: 1-12AX7, 1-6AU6, 1-6AN8, 2-EL84/6BQ5, 1-EZ81/6CA4. Power requirements: 117 v, 50-60 cycles, 55 watts. Color and finish: Black panel with brushed gold trim; black and gold vinyl-clad steel cover. Dimensions: 4 3/4" H. x 12 1/2" W. x 6-3/16" D.



Features patented Heath
ULTRA-LINEAR® circuit!

Kit Form
or
Factory
Assembled

Combination STEREO AMPLIFIER . . . just \$29.95

The Heathkit SA-3 Stereo Amplifier combines an amplifier and pre-amplifier into one compact, low cost unit. Use it to start a stereo system in your home or to provide the necessary power for stereo in that second system you've wanted in the den, patio or children's room. The SA-3 delivers 3-watts per channel, enough for average listening tastes. It has separate dual-channel tone controls and clutched volume controls. The seven-position function switch and two high-level inputs per channel make this amplifier capable of handling practically any system you arrange. In satin black with gold trim. 12 lbs.

Kit SA-3...\$3 dn., \$5 mo. **\$29.95**

SPECIFICATIONS—Channels: 2. Power output: 6 watts (3 w. per channel) Heath Utility Rating. Power response: ±1 db, 50-20,000 cps at 3 watts output per channel. Harmonic distortion: Less than 3% 60-20,000 cps at 3 watts output per channel. Intermodulation distortion: Less than 3% at 3 watts output, 60 and 6,000 cps signals, 4:1. Hum and noise: 65 db below 3 watts output. Input sensitivity: 150 mv for 3 watts output each channel, crystal phono and tuner. Outputs: 4, 8 and 16 ohms. Controls: Dual clutched volume, ganged treble, ganged bass, 7-position selector switch, speaker phasing switch, on-off switch. Tube complement: 2-EL84; 2-7199; 1-EZ81. Power requirements: 117 v, 50-60 cycle, 75 watts. Color and finish: Satin black, gold trim. Dimensions: 12 1/2" W. x 3 1/4" H. x 6 1/4" D.



SA-3 **\$29.95**

- ✦ Works with tuners and crystal or ceramic pickups
- ✦ Separate bass and treble tone controls
- ✦ Clutched volume controls
- ✦ 3-watt power output each channel



EA-1 **\$15.95**

- ✦ 3 controls—bass, treble, volume
- ✦ Two separate inputs
- ✦ 3-watt power output
- ✦ Built-in high level preamplifier
- ✦ Easy to build

SPECIFICATIONS—Power output: 3 watts, Heath Utility Rated. Power response: ±1 db, 50-20,000 cps at 3 watts output. Harmonic distortion: Less than 3% 60-20,000 cps at 3 watts output. Intermodulation distortion: Less than 3% at 3 watts output, 60 and 6,000 cps signal mixed 4:1. Hum and noise: 70 db below 3 watts. Input sensi-

3-Watt MONOPHONIC AMPLIFIER . . . Just \$15.95

The Heathkit EA-1 provides low cost monophonic power for an excellent extra system or for beginners. Add it to your radio or TV for increased power and fidelity. The three-tube amplifier has both tone and volume controls. Two inputs accommodate tuner or tape recorder and crystal or ceramic cartridge record player. Outputs for 4, 8 and 16 ohm speakers. Black with gold trim. 7 lbs.

Kit EA-1... .. **\$15.95**

tivity: 0.15 v for 3 watts output, crystal phono and tuner. Outputs: 4, 8 and 16 ohms. Controls: bass, treble, volume, input selector switch, on-off switch. Tube complement: 1-EF86, 1-EL84/6BQ5, 1-6X4. Power requirements: 117 v, 60 cycles, 49 watts. Color and finish: Satin black, gold trim. Dimensions: 9 1/2" W. x 3 3/4" H. x 6" D.

for Every Purpose and Budget



AA-20
\$34⁹⁵

- ✦ Concentric Baxandal-type tone controls
- ✦ Built-in power supply
- ✦ 6-position function selector
- ✦ Low distortion—high output performance

Value-packed STEREO PREAMPLIFIER AA-20 only \$34.95

A low-cost, high-quality stereo preamplifier, the Heathkit AA-20 performs with amazing versatility in any high fidelity system. While specifically designed to operate in conjunction with the Heathkit AA-30 or AA-40 amplifiers, it can be used efficiently in front of any stereo amplifier. The AA-20 has separate concentric Baxandal-type tone controls which provide bass and treble control to suit your individual taste. The 4-position input selector includes magnetic phonograph (RIAA equalized), crystal or ceramic phonograph, and two auxiliary high level sources (AM /FM tuners, TV, Tape recorder, etc.). Any mode can be chosen with the 6-position selector switch. 2 AC accessory outlets and a built-in power supply are other quality features. The carefully-designed circuit and "check-by-step" instructions make assembly easy. 13 1/8" W x 3 7/8" H x 6 3/8" D. 7 lbs.

Kit AA-20... \$3.50 dn., \$5 mo. **\$34.95**

SPECIFICATIONS—Channels: 2. **Inputs:** 4 each channel: Mag. phono, 47 K ohms; crystal phono, 2.4 megohms; aux. 1 & 2, 500 K ohms each. **Input sensitivities:** (For 2.5 v rms output) Mag. phono 0.004 v; crystal phono 0.15 v; aux. 1 & 2, 0.2 v. **Outputs:** 2 each channel, output to power amp. and tape output. **Frequency response:** ±1 db from 20 to 20,000 cps. **Harmonic distortion:** Mag. phono 0.2%, crystal phono and aux. inputs 0.15% at 2.5 volts output. **Intermodulation distortion:** .05% at 2.5 volts output. **Hum and noise:** Mag. phono, 50 db or better; crystal phono and aux. inputs, 65 db or better below 2.5 volts output. **Channel separation:** 45 db or better. **Controls:** Separate bass and treble controls each channel; 4-position input selector; separate volume each channel (clutched); 6-position function switch; filament balance. **Tube complement:** 5-12AX7. **Power requirements:** 117 v, 50-60 cycles, 17.5 watts. **External power supplied:** 2 AC receptacles, 1 switched 1 unswitched. **Color and finish:** Panel, black with brushed gold trim; cover, black and gold vinyl-clad steel.

Heathkit SP-2A—DELUXE STEREO PREAMP facilities!

The Heathkit Deluxe Stereo Preamplifier SP-2A gives you more features at a lower price than any other model. The 6 dual inputs combine with separate bass, treble, loudness and level controls for each channel to bring you versatile performance. Also included in this quality unit are a scratch filter, a remote balance control on a 20' cable, an 8-position input-equalization selector, a 4-position function selector, "off-on" switches and hum balance. The NARTB equalized tape head input does away with the need for separate tape playback electronics. Self-powered for complete versatility. 15 5/16" W x 4 5/8" H x 8 1/2" D. 14 lbs.

Kit SP-2A... \$5.70 dn., \$6 mo. **\$56.95**

SPECIFICATIONS—Channels: 2. **Inputs:** 6 each channel; tape head, 100 K ohm; mag. phono, 47 K ohm; microphone, 1 megohm; 3 auxiliary inputs at 470 K ohms each. **Input sensitivities:** (For 2.5 volt rms output) Tape head, 0.002 v; microphone, 0.015 v; mag. phono, 0.002 v; aux. 1, 2 & 3, 0.25 v. **Outputs:** 2 each channel, to tape recorder and low impedance cathode follower to power amp. **Frequency response:** ±1 db 20-20,000 cps. **Harmonic distortion:** Max. 0.25% at 2.5 volts output. **Intermodulation distortion:** Max. 0.5% at 2.5 v. output. **Hum and noise:** 2.5 mv at tape head input, 50 db or better below 2.5 v rms; 6 mv at mag. phono 65 db below 2.5 v. rms, 20 mv at microphone input, 65 db below 2.5 v rms; 0.1 v at aux. inputs, 75 db below 2.5 v rms. **Channel separation:** 40 db or better.



SP-2A
\$56⁹⁵

- ✦ 8 position input/equalization selector
- ✦ Tape head input
- ✦ Remote balance control—20' cable
- ✦ Built-in power supply



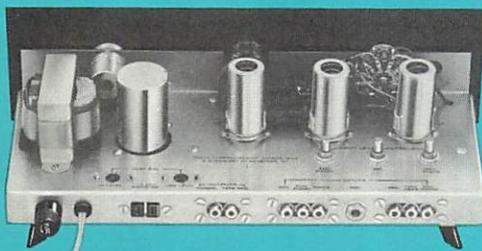
AA-60
\$24⁹⁵

Only \$24.95 brings you a quality Heathkit MONO PREAMP!

Successor to the world-famous WA-P2, the new Heathkit AA-60 monophonic preamplifier is already attracting thousands of hi-fi fans with its money-saving price and its quality performance. It features 6 inputs including mag. phono, tape head (enough gain and NARTB equalized to bypass tape recorder playback electronics), microphone, tuner, crystal phono and auxiliary! The mag. phono, microphone, and crystal phono inputs have individual input level controls. The cathode followers feeding the tape recorder and normal outputs insure minimum high frequency loss regardless of cable length. The Baxandal type tone controls give flexible treble and bass adjustments. The AA-60 can be used with any monophonic power amplifier, because it is self-powered. Handsomely styled in black and gold vinyl-clad steel case with gold trim. 6 lbs.

Kit AA-60... \$2.50 dn., \$5 mo. **\$24.95**

SPECIFICATIONS—Input impedance: (At 1 KC) mag. phono 47 K ohm; tape head 82 K ohm; mike 500 K ohm; tuner 1 megohm; xtal phono 1 megohm; aux. 1 megohm. **Input sensitivity:** (2.5 v. rms output at 1 KC) Mag. phono .0035 v; tape head .004 v; mic. .01 v; tuner .1 v; xtal phono .12 v; aux. 1 v. **Outputs:** (2) Normal & Tape recorder. **Frequency response:** ±1 db 20-20,000 cps. **Harmonic distortion:** 0.2% or less. **IM distortion:** 0.25% or less. **Dimensions:** 4 1/4" H. x 13 1/2" W. x 5 1/2" D.



- ✦ Self-powered use with any mono amplifier
- ✦ Baxandal-type tone controls
- ✦ 6 inputs give versatility

NO DOWN PAYMENTS REQUIRED!

Now you can buy any Heathkit of \$25 or more with *no down payment!* Disregard down payment requirements shown in this catalog—to figure your monthly payments, check the order blank chart. These relaxed credit terms, coupled with our money-back guarantee that you can build any Heathkit, mean you can buy Heathkit with complete confidence and assurance of satisfaction.

For the best in stereo or mono



Features patented Heath ULTRA-LINEAR® circuit!



AA-30
\$45⁹⁵

Hi-Fi Rated 28-watt STEREO POWER AMPLIFIER

- ✦ Conservatively rated at 14 watts per channel
- ✦ Individual amplifier gain controls
- ✦ Phase reversal switch
- ✦ Supplies preamp power if required

This compact AA-30 Power Amplifier delivers a full 28-watts for just \$45.95. Has Heath's patented ULTRA-LINEAR® circuit. Works with any preamp and supplies 300 VDC @ 10 ma and 6.3 VAC @ 1.1 amp for preamp power. Etched circuit boards make construction easy. Has individual amplifier gain controls and speaker phase reversal switch. Color styled in black and gold. 21 lbs.

Kit AA-30...\$4.60 dn., \$5 mo. **\$45.95**

SPECIFICATIONS—Channels: 2. **Power output:** 28 watts (14 w. per channel) Heath Hi Fi Rating; 32 watts (16 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ± 1 db from 30 cps to 15 kc at 14 watts output per channel. **Harmonic distortion:** 2% or less at 14 watts, 30 cps to 15 kc. **Intermodulation distortion:** 2% or less 60 and 6,000 cps signals mixed 4:1 at 14 watts output per channel. **Hum and noise:** 76 db below 14 watts output. **Channel separation:** 65 db. **Input sensitivity:** 0.74 v for 14 watts output per channel. **Input impedance:** 500 K ohm pot. **Outputs:** 4, 8 and 16 ohm. **Damping factor:** 5.25:1, 4 ohm tap; 10.2:1, 8 ohm tap; 11.5:1, 16 ohm tap. **Controls:** Left and right channel gain; AC switch; phase switch. **Tube complement:** 2-7199; 4-EL84/6BQ5; 1-GZ34/5AR4. **Power requirements:** 117 v, 50-60 cycles, 115 watts. **Power outlets:** 2 octal sockets for pre-amp power; supply 300 v at 10 ma, 6.3 volts at 1.1 amps at each socket. **Color and finish:** Black, expanded metal dust cover; gold chassis. **Dimensions:** 13" W. x 8½" D. x 6" H.

80 Stereo Watts for only \$80.00

- ✦ Conservatively rated—can deliver 98 watts
- ✦ Balancing circuit eliminates need for matched tubes
- ✦ Mixed-channel center speaker output

The powerful Heathkit AA-40 Stereo Power Amplifier delivers 40 watts per channel under Heath's conservative hi-fi rating system. In addition to regular speaker outputs, a mixed-channel center speaker output is included for "fill-in" stereo or mono power to other rooms. Convenient controls include left and right channel bias voltage level and balance, audio level for each channel, function selector, speaker phase and power switches. ULTRA-LINEAR® output circuit and balancing circuit insures optimum power response. 2 AC outlets are provided for accessories. 40 lbs.

Kit AA-40...\$8 dn., \$8 mo. **\$79.95**

SPECIFICATIONS—Channels: 2. **Power output:** 80 watts (40 w. per channel) Heath Hi Fi Rating; 98 watts (49 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ± 0.5 db, 20-20,000 cps, at 40 watts output per channel. **Harmonic distortion:** 1.5% or less, 20-20,000 cps, at 40 watts output per channel. **Intermodulation distortion:** 0.5% or less at 40 watts output per channel, 60 and 6,000 cps mixed 4:1. **Hum and noise:** 85 db below 40 watts output. **Channel separation:** 70 db or better at 1 kc. **Input sensitivity:** 0.95 volts rms for 40 watts output per channel. **Outputs:** 4, 8, 16, and 32 ohms per channel; center speaker terminals can be used with 4, 8 or 16 ohm speakers. **Damping factor:** 16:1, 8 and 16 ohm taps; 12.5:1, 4 ohm tap. **Controls:** A Channel: bias balance, bias voltage, level, B Channel: bias balance, bias voltage, level, Function selector; phase and power switches. **Tube complement:** 2-6AN8; 4-EL34, 4 silicon diode rectifiers, 1 selenium bias rectifier. **Power requirements:** 117 v, 50-60 cycles, 180-320 watts. **Power outlets:** 2 AC outlets; 1 switched, 1 unswitched. **Color and finish:** Black, expanded metal dust cover, gold chassis. **Dimensions:** 7½" H. x 15" W. x 11" D.



AA-40
\$79⁹⁵

Features patented Heath ULTRA-LINEAR® circuit!

Hi-Fi rated 35 watt MONOPHONIC POWER AMPLIFIER . . . Only \$49.95

- ✦ Ideal power level for most speakers
- ✦ Conservative ratings—rugged, long life
- ✦ Replaces the famous W-5M with greater power and sensitivity at a lower price

Delivering a full hi-fi rated 35-watts for only \$49.95 the Heathkit AA-10 Monophonic Power Amplifier is 10 watts more powerful than its predecessor, the W-5M, yet it costs \$10 less. Some of the special features include Heath's patented ULTRA-LINEAR® circuit for maximum performance, and bias and balance controls to insure low distortion—even with unmatched output tubes. A built-in level control and AC switch make the AA-10 extra convenient to use and a specially designed output transformer provides top flight performance. The unit is mounted on a gold finished chassis and has a black ventilated dust cover of expanded metal. Easy to assemble. 24 lbs.

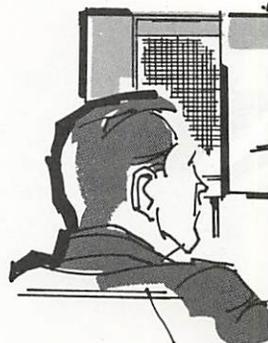
Kit AA-10...\$5 dn., \$5 mo. **\$49.95**



AA-10
\$49⁹⁵

Features patented Heath ULTRA-LINEAR® circuit!

SPECIFICATIONS—Power output: 35 watts Heath Hi Fi Rating; 42 watts IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ± 1 db, 20 cps to 20 kc, at 35 watts. **Harmonic distortion:** Less than 2%, 20-20,000 cps, at 35 watts output. **Intermodulation distortion:** 2% or less at 35 watts output, 60 and 6,000 cps signals, 4:1. **Hum and noise:** 80 db below 35 watts. **Input sensitivity:** 0.9 v for 35 watts output. **Outputs:** 4, 8, 16 and 32 ohms. **Damping factor:** 16:1 at 8 and 16 ohm taps; 12.5:1 at 4 ohm tap. **Controls:** Bias voltage, Bias balance, Level, On-off. **Tube complement:** 1-6AN8, 2-EL34, 1-GZ34, 1 selenium bias rectifier. **Power requirements:** 117 v, 50-60 cycles, 100-130 watts. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched; Octal socket for pre-amp power, supplies 300 v at 10 ma DC and 6.3 V @ 1.0 amps AC. **Color and finish:** Satin gold enamel chassis, black expanded metal cover. **Dimensions:** 12" W x 6½" H x 8" D.



amplifiers . . . buy Heathkit®!



A Hi-Fi rated 55-watt MONOPHONIC AMPLIFIER for \$59.95!

- ✦ Speaker and 70 V. line outputs for any application
- ✦ EL-34 output tubes with balancing circuit
- ✦ Use with any preamplifier

The Heathkit W-7A delivers a full 55 watts that meets both professional and hi-fi ratings. Superior circuit design provides a comfortable margin of distortion free power. Has a silicon diode power supply and a device for circuit protection during warmup. Balancing circuit eliminates need for matched set of output tubes. Compact, well ventilated cabinet, with pilot light. Wiring harness aids assembly. 26 lbs.

Kit W-7A . . . \$6 dn., \$6 mo. **\$59.95**

SPECIFICATIONS—Power output: 55 watts Heath Hi Fi and Professional Rating; 67 watts IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db, 20-20,000 cps, at 55 watts output. **Harmonic distortion:** Less than 2%, 20-20,000 cps, at 55 watts output. **Intermodulation distortion:** Less than 1% at 55 watts output, 60 and 6,000 cps signals, 4:1. **Hum and noise:** 80 db below 55 watts output. **Input sensitivity:** 2 volts for 55 watts output. **Outputs:** 4, 8 and 16 ohms, plus 70.7 volt line output. **Damping factor:** Switched for unity or max (20). **Controls:** Gain, on-off, damping factor. **Tube complement:** 1-6AN8, 2-EL34. **Rectifiers:** 4-500 ma silicon rectifiers, 1-selenium bias rectifier. **Power requirements:** 117 v, 50-60 cycles, 90-160 watts. **Power outlets:** Octal socket for pre-amp power, supplies 300 volts at 10 ma DC, 1 AC receptacle-switched. **Color and finish:** Satin gold enamel chassis; black ventilated cover. **Dimensions:** 15" W. x 6 1/2" H. x 8 1/2" D.



W-7A
\$59.95

Features patented Heath ULTRA-LINEAR® circuit!

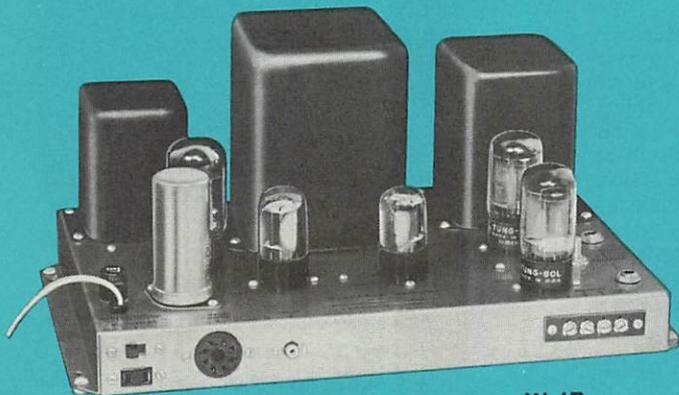
Dependable Mono Power . . . 20 hi-fi rated watts

- ✦ Use with any preamplifier
- ✦ Chassis or remote "On-Off" Provision
- ✦ Chicago Standard Output Transformer

Renowned to all high fidelity fans is Heath's W-4B, 20-watt monophonic amplifier . . . for years it has been giving excellent performance in a variety of audio applications. The W-4B is a "Williamson-type" amplifier with 5881 "push-pull" output tubes in Heath's patented ULTRA-LINEAR® output circuit for true hi-fi performance. Special filament balance resistors enable you to use your W-4B with any self-powered or externally-powered preamplifier (preamp power is available from a socket on the chassis). "On-Off" can be operated either from the chassis or from a remote location. Chassis is finished in a satin-gold enamel. 24 lbs.

Kit W-4B . . . \$3.98 dn., \$5 mo. **\$39.75**

SPECIFICATIONS—Power output: 20 watts Heath Hi Fi Rating; 20 watts IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db, 30 cps to 15 kc, at 20 watts output. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc, at 20 watts output. **Intermodulation distortion:** Less than 1% at 20 watts output using 60 and 6,000 cps signals, 4:1. **Hum and noise:** 95.2 db below 20 watts output. **Input sensitivity:** 2 v for 20 watts output. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 28.5:1. **Controls:** Output tube balance control, on-off switch. **Tube complement:** 2-5881, 2-6SN7, 1-5V4. **Power requirements:** 117 v, 50-60 cycles, 115 watts. **Power outlets:** Octal socket for pre-amp power, supplies 275 v DC at 10 ma, 6.3 v AC at 1.1 amperes; 1 AC outlet, switched. **Color and finish:** Satin gold enamel. **Dimensions:** 15 1/2" W. x 7" H. x 8 1/2" D.



Features patented Heath ULTRA-LINEAR® circuit!

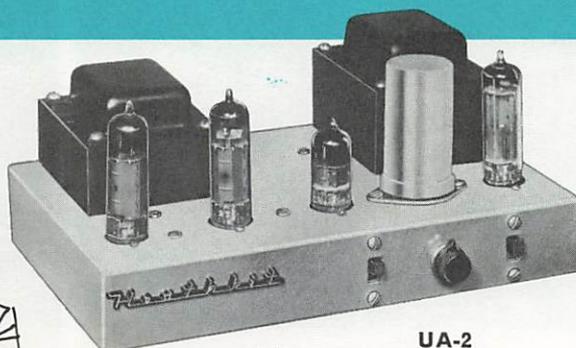
W-4B
\$39.75

Just \$22.95 for this 14-WATT MONOPHONIC AMPLIFIER!

- ✦ 14 Hi-Fi rated watts
- ✦ Supplies power for preamps
- ✦ Input level control

The Heathkit UA-2 is an amazingly versatile instrument designed to be used in practically any hi-fi application or as a line bridging amplifier for unbalanced lines in public address networks, wired music systems, etc. And nowhere will you find a comparable unit at this low price! Heath's patented ULTRA-LINEAR® output circuit provides excellent performance with low distortion. Improved speaker performance can be obtained with the selection of "unity" or "maximum" damping. Also featured are an input level control and an "on-off" switch. The UA-2 can also supply preamp power when necessary or operate with self powered preamps. Easy to build with its straight-forward circuit and complete instructions. 12 lbs.

Kit UA-2 **\$22.95**



Features patented Heath ULTRA-LINEAR® circuit!

UA-2
\$22.95

SPECIFICATIONS—Power output: 14 watts Heath Hi Fi Rating; 16 watts IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db 20-20,000 cps, at 14 watts output. **Harmonic distortion:** Less than 2%, 20-20,000 cps, at 17 watts output. **Intermodulation distortion:** Less than 2% at 16 watts output, 60 and 6,000 cps signals, 4:1. **Hum and noise:** 73 db below 14 watts. **Input sensitivity:** 0.7 v for 14 watts output. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** Switched for unity or max. (15.66:1). **Controls:** Gain control, damping switch, on-off switch. **Tube complement:** 1-6AN8, 1-EZ81/6CA4, 2-EL84/6BQ5. **Power requirements:** 117 v, 50-60 cycles, 50 watts. **Power outlets:** Octal socket for pre-amp power, supplies 300 v at 10 ma, 6.3 v AC at 1.1 ampere. **Color and finish:** Satin gold enamel. **Dimensions:** 10" W. x 4 1/4" H. x 6 1/2" D.



Heathkit® speakers and systems



Only \$39.95 for this remarkable Hi-Fi Speaker System—SS-2

- ✦ 8-inch woofer
- ✦ Compression-type tweeter
- ✦ Tweeter level control
- ✦ Special bass-reflex enclosure
- ✦ Can be used vertically or horizontally

One of the most popular speaker systems in the Heathkit line, the SS-2 is enjoyed by thousands of music lovers for its unique combination of quality performance and low price. The 8" woofer and true compression-type tweeter with a flared horn are mounted in a specially-designed bass-reflex enclosure. The attractive cabinet is suitable for either light or dark finishes and in kit form the cabinet parts are pre-cut and pre-

drilled for easy assembly. The mounting plate for the tweeter in the SS-2 allows it to be mounted vertically or horizontally. The SS-2 has a frequency response of ± 5 db from 50 to 12,000 cps with crossover at 1600 cps. The impedance is 16 ohms. Power rating is 25 watts of program material. Especially designed for bookshelf use, the compact cabinet measures just 11½" H x 23" W x 11¾" D. 24 lbs.

Kit SS-2...\$4 dn., \$5 mo. **\$39.95**

Kit SS-2A (Assembled Cabinet)
... \$4.40 dn., \$5 mo. **\$43.95**

SPECIFICATIONS—Frequency response: ± 5 db, 50 to 12,000 cps; **Crossover frequency**: 1600 cps; **Power rating**: Program Material—25 watts, Single Frequency—15 watts; **Nominal impedance**: 16 ohms; **Speakers**: Low Frequency—8" Jensen (special design), 6.8 oz. Alnico 5; High Frequency—Jensen compression driver with exponential horn (special design), 4.7 oz. Alnico 5; L-pad—level control for high frequency driver.



SS-2
\$39.95

An Acoustic Suspension Speaker System for just \$59.95!

You can now enjoy all the performance of acoustic suspension speakers with the Heathkit AS-10 Speaker System and make substantial savings . . . you'll get extended bass response and brilliant high frequency coverage at savings of ten to forty dollars! A 10" acoustic suspension woofer and two 3½" cone-type tweeters mount in a bookshelf sized cabinet that will fit practically anywhere in your room. As little as 10 watts are needed to drive this system and you get response from 30-15,000 cps. The system can be arranged vertically or horizontally. A high frequency control and crossover network are included. The system has an impedance of 16 ohms. The preassembled cabinets come in walnut or mahogany finishes or unfinished. 24" L x 11½" D x 13½" H. 39 lbs.

Kit AS-10U (unfinished) . . . \$6 dn., \$6 mo. **\$59.95**

Kit AS-10M (mahogany finished) . . . \$6.50 dn., \$6 mo. **\$64.95**

Kit AS-10W (walnut finished) . . . \$6.50 dn., \$6 mo. **\$64.95**

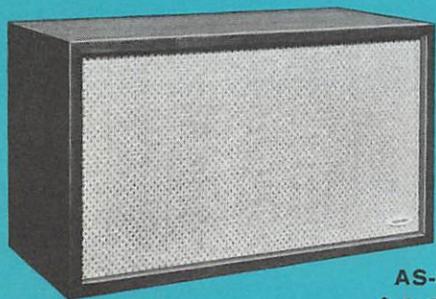
SPECIFICATIONS—Frequency response: ± 5 db 30 to 15,000 cps; **Crossover frequency**: 2250 cps; **Recommended amplifier power**: 10 to 40 watts rms; **Nominal impedance**: 16 ohms; **Tweeter**: two 3½" cone units, in dispersed array, 1.47 oz. Alnico 5 mag.; **Woofer**: 10" Acoustic Suspension, 1 lb. Alnico 5 mag. Resonant frequency (mounted) 58 cps; **Crossover**: L-C network; **Horizontal dispersion**: 90 degrees.



AS-10U

\$59.95

- ✦ 10" acoustic suspension woofer
- ✦ Two 3½" cone-type tweeters
- ✦ Covers 30-15,000 cps



AS-2U
\$69.95

- ✦ Two 5" cross-fired tweeters
- ✦ 10" acoustic suspension woofer
- ✦ Unfinished, preassembled cabinet

Now . . . the famous AR-2 system in kit form

The famous AR-2 acoustic suspension speaker is now yours in kit form thanks to an exclusive license granted Heath by Acoustic Research, Incorporated. The 10" woofer and two cross-fired tweeters give you the fine performance for which the AR-2 is famous . . . low distortion, extended bass response and outstanding high frequency distribution. The assembled cabinet measures 24" W x 13½" H x 11¾" D . . . just install the speakers. 44 lbs.

Kit AS-2U (unfinished) . . . \$7 dn., \$7 mo. **\$69.95**

SPECIFICATIONS—Frequency response: ± 5 db, 40 to 15,000 cps; **Crossover frequency**: 1,000 cps; **Recommended amplifier power**: 20 to 40 watts RMS; **Nominal impedance**: 8 ohms; **Tweeter**: Two 5" cone units, specially treated and equalized, in dispersed array, 2.15 oz. Alnico 5 Magnet; **Woofer**: 10" Acoustic suspension, 1.1 lb. Alnico 5 Magnet. Resonant frequency (mounted) 58 cps; **Crossover**: L-C network; **Horizontal dispersion**: 90°.

Low Cost Speaker System—ASW-41

This completely factory-built, low-cost speaker system, the Heathkit ASW-41, can be used as an extension speaker in other rooms, as a stereo center fill-in speaker, and in numerous other ways. It has a 6" x 9" extended range dual-cone speaker with 60-16,000 cps response. 11" W x 8" H x 6½" D. Walnut finish or unfinished. Ready to play when you unpack it. 8 lbs.

Assembled ASW-41U (unfinished) . . . **\$10.95**

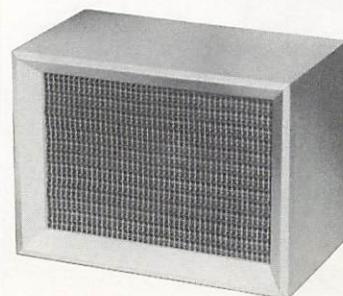
Assembled ASW-41W (walnut finished) . . . **\$12.95**

SPECIFICATIONS—Frequency response: 60 to 16,000 cps; **Speaker**: 6" x 9" oval extended range dual cone; **Magnet**: 6.8 oz. Alnico 5; **Power handling capacity**: 12 watts peak; **Impedance**: 8 ohms. **Resonant frequency**: 85 cps. **Leads**: 15' 2-conductor, rubber-covered.

26

- ✦ Completely assembled—ready to play
- ✦ Walnut or unfinished
- ✦ 60-16,000 cps response

ASW-41U
\$10.95



give you more for less money!



AS-21U
\$224⁹⁵

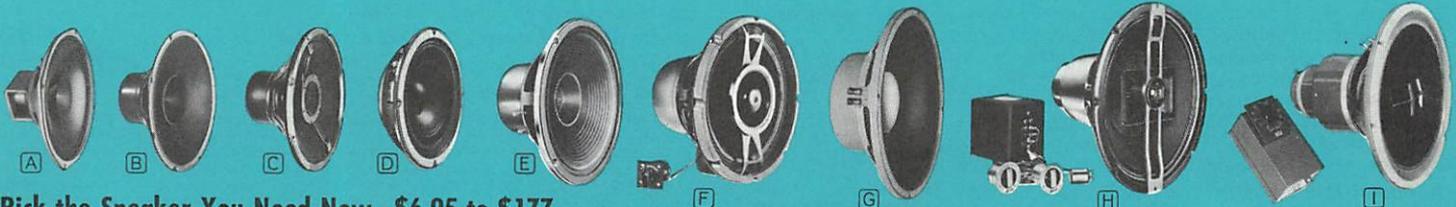
- ✦ Altec Lansing speakers cover 30 to 22,000 cycles per second
- ✦ 800 cps crossover network—completely assembled in factory
- ✦ Styling matches AE-20 cabinets shown on page 28

Best at any price . . . the "Legato-Compact" deluxe Heathkit speaker system

The Heathkit AS-21 "Legato-Compact," is truly a remarkable speaker system. Named after its predecessor, the "Legato", it offers the same fine sound reproduction, but achieves a space saving in cabinetry and a lower price tag. This beauty is a rare blend of precision engineering and tasteful design that offers you not only a superb speaker component for your hi-fi/stereo system, but an elegant piece of quality furniture as well. The Legato-Compact features two 12" Altec Lansing high compliance, low-frequency speakers that cover 30-800 cps with rich, full-bodied tone. A newly-designed, special Altec Lansing exponential horn and high frequency driver combination covers frequencies from 800 to 22,000 cps with remarkable fidelity and brilliance of tone. The special 800 cps crossover network is factory assembled and ready to install when you receive it. Because the speakers in the Legato-Compact are so efficient, even amplifiers with only 3 watts output power can drive the system with ease . . . the system is rated to handle program material of up to 30 watts. The beautifully styled, factory-assembled cabinet is ready for easy installation of the speakers when you unpack it. Choose from beautiful walnut or mahogany finishes or the unfinished model. 132 lbs.

- Kit AS-21W (walnut) . . . \$23 dn., \$20 mo. **\$229.95**
- Kit AS-21M (mahogany) . . . \$23 dn., \$20 mo. **\$229.95**
- Kit AS-21U (unfinished) . . . \$22.50 dn., \$20 mo. **\$224.95**
- AS-31: All components of AS-21 except cabinet for custom installations; cabinet dimensions included. . . 53 lbs. . . \$18 dn., \$16 mo. **\$179.95**

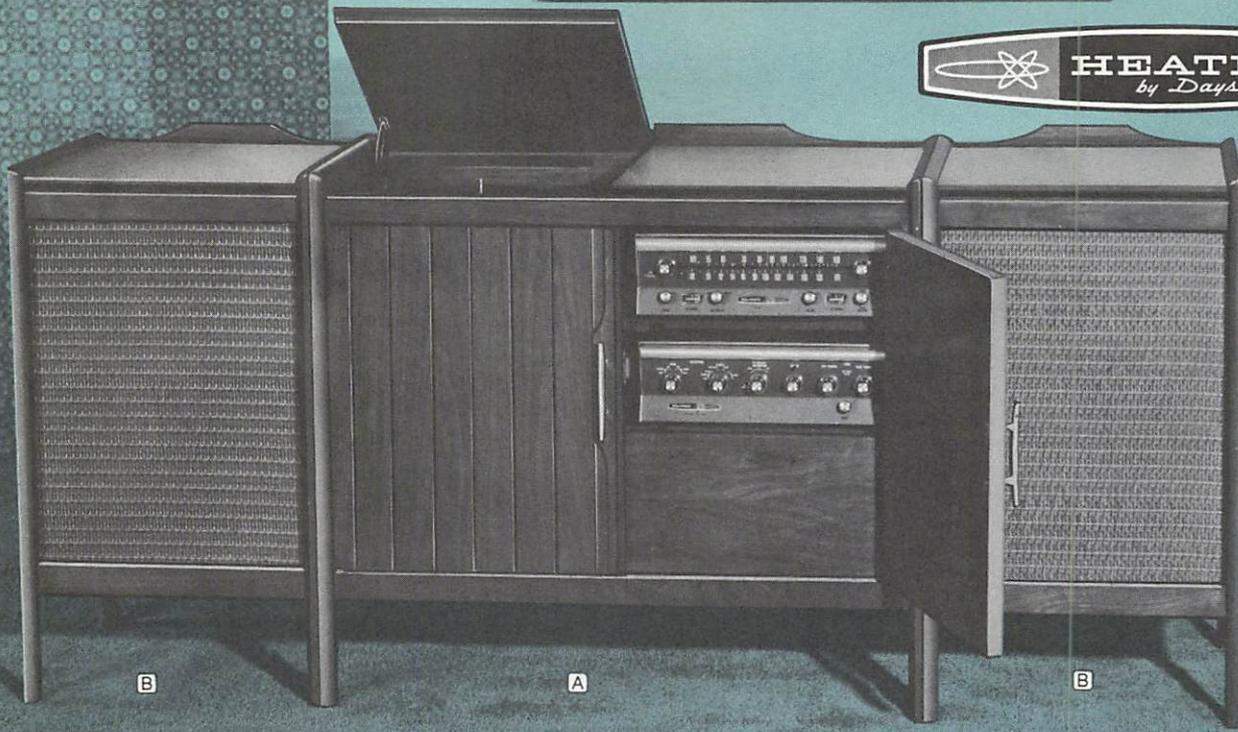
SPECIFICATIONS—Frequency response: 30-22,000 cps. Power rating: 30 watts program material. Nominal impedance: 16 ohms. Cabinet type: Modified infinite baffle. Dimensions: 32" L. x 19" D. x 32 3/4" H. Magnet wts.: Low-frequency drivers: 1 1/2 lbs. each. High-frequency driver: .53 lbs. Crossover network: 800 cps constant K high frequency shelving type. Driving power: as low as 3 watts.



Pick the Speaker You Need Now—\$6.95 to \$177

- A 8" DUAL-CONE SPEAKER**
Frequency response: 60 to 15,000 cps. Impedance: 8 ohms. Power rating 8 watts. Recommended enclosure instructions included. 2 lbs.
US-4 **\$6.95**
- B 12" DUAL-CONE SPEAKER**
Covers 50 to 12,000 cps. Handles up to 14 watts. Impedance is 8 ohms and magnet weight is 6.8 oz. Instructions for a speaker enclosure included. 5 lbs.
US-2 **\$11.95**
- C COAXIAL HI-FI SPEAKER**
15 watt rating with a frequency response of 50 to 15,000 cps. Uses a 12" PM woofer (6.8 oz. magnet) and a 3" PM tweeter (1.47 oz. magnet). Built-in 2 kc crossover network. Instructions provided. 6 lbs.
US-3 **\$19.95**
- D ALTEC 755C 8" SPEAKER**
Combines true high-fidelity reproduction, compact size, slim profile and low cost. Unique pancake design is ideal for wide-angle P.A. use or custom hi-fi. Power rating 15 watts. Response 40-13,000 cps. Impedance 8 ohms (2" voice coil); Distribution angle: 90°. Depth 2 1/4". 5 lbs.
AS-20 . . . \$3 dn., \$5 mo. **\$29.95**
- E ELECTRO-VOICE SP12B 12" COAXIAL HI-FI SPEAKERS**
Features high-compliance, viscous-damped cloth suspension; resonant frequency 40-50 cycles. Deep 2" voice coil. 16 ohms impedance. 1 1/2 lb. ceramic magnet. Power rating, 20 watts. Response, 40 to 13,000 cps. Mechanical crossover, 4500 cps. 11 lbs.
AS-30 . . . \$3.43 dn., \$5 mo. **\$34.30**

- F JENSEN H-233F COAXIAL 2-WAY 12" SPEAKER**
Exceptional low frequency performance from special "Flexair" woofer in combination with new concentric re-entrant compression driver tweeter. 20-15,000 cps. 16 ohms impedance. 30 watt power rating. 1 3/4 lb. magnet. 13 lbs.
AS-40 . . . \$7.25 dn., \$7 mo. **\$72.50**
- G JBL D130 15" EXTENDED RANGE HI-FI SPEAKER**
The only 15" speaker with 4-inch edge-wound aluminum ribbon voice coil. Used in more high-quality systems than any other extended range speaker. Impedance 16 ohms. Power rating 25 watts. 23 lbs.
AS-50 . . . \$9.18 dn., \$9 mo. **\$91.80**
- H JENSEN G-600 15" "TRIAx" HI-FI SPEAKER**
Three electrically and acoustically independent low, medium, and high frequency channels. MF and HF sections employ compression-driver horn-loaded units for low distortion and wide angle dispersion of highs. Separate dual crossover network. Response is 30 cps to upper hearing limit. 16 ohm impedance. 35 watts. 3 1/2 lb. magnet. 37 lbs.
AS-60 . . . \$13.45 dn., \$12 mo. **\$134.50**
- I ALTEC 605A 15" DUPLEX HI-FI SPEAKER**
The 605A covers 20 to 22,000 cps with unusual smoothness in highs; extremely high linearity and clean transient response in lows. 3" voice-coil for high efficiency, 2 1/4 lb. magnet. High frequency exponential multi-cellular horn provides 90° horizontal distribution (1/2 lb. magnet). Power rating 35 watts (50 watts peak), cone resonance 25 cps, impedance 16 ohms. 37 lbs.
AS-70 . . . \$17.70 dn., \$15 mo. **\$177.00**



HFS-28
\$675⁰⁰

Everything you need in a magnificently styled Home Entertainment Center . . .

Deluxe STEREO-PHONO CONSOLE with AM/FM Tuner

This superbly integrated stereo high fidelity system features the deluxe line of Heathkit hi-fi components, all housed in beautiful contemporary cabinets with choice of hand-rubbed walnut or mahogany finishes. Entire system comes completely factory assembled, ready to use the moment you receive it! Latest styling innovations and advanced engineering design bring you high fidelity performance with uncompromising quality. System includes: 50-watt Deluxe Stereo Amplifier AA-100 (p. 19), 16 tube Deluxe AM/FM tuner AJ-30 (p. 19), Automatic speed-selecting Stereo/Mono Record Changer AD-60 with Shure diamond stylus Stereo Cartridge (p. 17), Two Jensen H-223F Coaxial 2-way 12" speakers AS-40 (p. 27), Two speaker cabinets AE-40 and Equipment Cabinet AE-20 above. 264 lbs.

Assembled HFS-28W (walnut finish) . . . \$75 dn., as low as \$40 a mo. **\$675.00**
Assembled HFS-28M (mahogany finish) . . . \$75 dn., as low as \$40 mo. **\$675.00**

MONEY SAVING OPTIONAL PLAN

Includes preassembled prefinished cabinet as above. Electronic equipment and changer in kit form. You assemble and save.

Kit HFS-29W (walnut finish) . . . \$55 dn., as low as \$32 mo. **\$550.00**
Kit HFS-29M (mahogany finish) . . . \$55 dn., as low as \$32 mo. **\$550.00**



TAPE RECORDER DRAWER

Converts record storage compartment of AE-20 equipment enclosure above to accept tape recorder or player. Holds either Heathkit-model AD-70, TR-1A, TR-1E or AD-40 tape deck. Drawer is assembled and complete with hardware, track and instructions for installation. Measures 11 1/8" H x 14 1/2" D x 16" W outside. 15 lbs.

Model AEA-20U (unfinished) **\$12.95**
Model AEA-20W (walnut) **\$14.95**
Model AEA-20M (mahogany) **\$14.95**

A Custom Designed EQUIPMENT CABINET

Elegant in appearance, quality in materials and construction, versatile in function, these handsome cabinets were expressly designed for your Heathkit stereo/hi-fi equipment. Quality 3/4" woods in solids and veneers are used with hand-rubbed finishes.

Model AE-20U (unfinished) . . . \$7.45 dn., \$7 mo. **\$74.50**
Model AE-20W (walnut) . . . \$9.45 dn., \$9 mo. **\$94.50**
Model AE-20M (mahogany) . . . \$9.45 dn., \$9 mo. **\$94.50**

EQUIPMENT ACCOMMODATIONS AND SIZES—Cabinet, overall: 36" W. x 32 1/2" H. x 19" D. Changer compartment: 17" W. x 15 1/2" D., mounting board height is variable to accept any Heath record changer or player or Heath AD-70, TR-1A tape recorders; lid has adjustable, friction-loaded support. **Record-tape recorder compartment:** 14 1/2" H. x 17" W. x 17" D. for record storage; space is convertible with accessory sliding drawer below to accommodate Heath tape recorders. **Shelf compartments (2):** each 17" W. x 6" H. x 17" D. inside (shelf 14" deep); either shelf accepts any Heath Stereo or Mono tuner, Stereo or Mono preamplifiers, AA-100 or AA-151 stereo amplifier. **Power amplifier compartment:** 8 1/2" H. x 17" W. x 15 1/2" D. inside; accepts two Heath UA-2's, an AA-30 or AA-40 for stereo power or any Heath monophonic power amplifier. Shipping weight 81 lbs.

B 15" SPEAKER CABINET

Completely assembled, factory finished or unfinished. Designed for 15" speakers with adapter ring included for 12" speakers. 3 3/8" x 10 3/16" slot provided for horn-type tweeter. Tube-vented design allows matching cabinet to speaker. Constructed of 3/4" stock. Measures 18 1/4" W x 19" D x 32 3/8" H outside. Suitable speakers shown on page 27. 44 lbs.

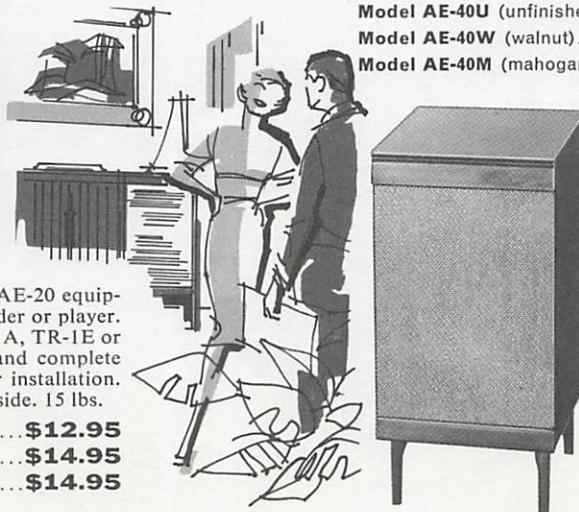
Model AE-40U (unfinished) . . . \$3.55 dn., \$5 mo. **\$35.50 ea.**
Model AE-40W (walnut) . . . \$4.15 dn., \$5 mo. **\$41.50 ea.**
Model AE-40M (mahogany) . . . \$4.15 dn., \$5 mo. **\$41.50 ea.**

12" SPEAKER CABINET

- ✦ Accepts all 12" or 8" speakers
- ✦ Provision for horn-type tweeter

Completely assembled, ready for speaker. Designed for 12" speakers with adapter ring for 8" speakers. 3 3/8" x 10 3/16" slot provided for horn-type tweeter. Tube-vented design allows matching cabinet to speaker. Assembled of 3/4" stock. 15" W x 19" D x 32 3/8" H outside. 35 lbs.

Model AE-30U (unfinished) . . . \$2.95 dn., \$5 mo. **\$29.50 ea.**
Model AE-30W (walnut) . . . \$3.45 dn., \$5 mo. **\$34.50 ea.**
Model AE-30M (mahogany) . . . \$3.45 dn., \$5 mo. **\$34.50 ea.**



High Quality at Low Cost . . . Heathkit® Amateur Radio Equipment

For "MOBILE" or "FIXED STATION" use . . .

New feature-packed TRANSCEIVERS for "6" and "2" meters

- ✦ 10 watt CW RF output to antenna—6360 final
- ✦ Tracked VFO and exciter stages for single knob tuning
- ✦ Built-in low pass filter—push-to-talk microphone
- ✦ Built-in 3-way power supply for 117 V. AC, 6 V. DC or 12 V. DC
- ✦ Ideal for use in CAP & MARS operations

Top dollar-value in quality and performance are yours in the new Heathkit 6 meter "Shawnee" and 2 meter "Pawnee"! Both models offer complete AM & CW facilities with the latest in design features for complete versatility and operating convenience, in either mobile or fixed station modes of operation.

CHECK THESE FEATURES:

Transmitters feature switch-selection of a built-in, temperature, stabilized VFO or four crystal positions for net, novice, CAP or MARS operation; tracked VFO and exciter stages for convenient single knob tuning over any 500 kc band segment; "spotting" switch to zero-in signals with transmitter off-the-air; efficient 6360 final RF amplifier for 10 watt output to antenna; built-in low-pass filter to suppress harmonics and other spurious radiation; dual-purpose modulator which doubles as a 15-watt PA amplifier with an added, external speaker; and push-to-talk ceramic element microphone with coil cord and mounting clip.

Superheterodyne receivers feature double conversion with first oscillator crystal controlled; voltage regulation on all oscillators for high stability; large, illuminated slide-rule dial for easy receiver and VFO tuning; automatically switched panel meter to read signal strength or relative power output; front panel squelch and noise limiter controls for maximum clarity, minimum noise; 3" x 5" weatherproof PM speaker; RF gain, BFO and AVC on/off controls.

Built-in 3-way power supplies feature transformer operation on 117 Volt, 50/60 cycles and heavy-duty, full-wave, split-reed, 8-contact, interrupter type vibrator for operation on 6 or 12 volt DC. Primary fused relay controls all power to the transceiver in mobile installations. Heavy-duty AC & DC power cables included.

Sturdy construction features wrap-around steel case for maximum protection. Power supply, transmitter and receiver sections are individually shielded, using feed-through type capacitors for maximum stability and noise-free operation.

Handsomely styled in traditional Heathkit gray and gray-green. Solid die cast knobs. Functional panel layout has all controls located for easy, convenient operation.

Easy to use and install. Kit includes mounting bracket for convenient installation on automobile transmission hump, under dash, etc. Adjustable thumb nuts allow tilting unit up to desired angle for best viewing and operating position. Quick disconnect leads and slotted mounting bracket allow fast, easy removal of unit.

NOTE: Recommended for the more experienced kit builder. Average assembly time is 70 hours.



HW-20
\$199⁹⁵

Kit HW-10 (6 meter) . . . 34 lbs. . . \$20 dn., \$17 mo. **\$199.95**
Kit HW-20 (2 meter) . . . 34 lbs. . . \$20 dn., \$17 mo. **\$199.95**

SPECIFICATIONS—RECEIVER SECTION—Frequency coverage: HW-20; 143.8 to 148.2 mc. HW-10; 49.8 to 54.0 mc. **IF frequencies:** Double conversion—First IF, 22 to 26 mc (tunable); Second IF, 2 mc. **Noise figure:** HW-20; 8.5 db or less, HW-10; 6 db or less. **Sensitivity:** .5 microvolts of input signal will provide an output signal better than 10 db over the noise level. **Squelch sensitivity:** Less than 1 microvolt. **Selectivity:** 15 kc at 6 db down. **Image rejection:** Better than 70 db. **IF rejection:** 50 db. **Input impedance:** 50 to 72 ohm, unbalanced. **Audio power output:** 3 watts (receiver operation); 15 watts (public address operation). **Headphone jack:** Low impedance, accepts PL-55 type plug (standard 2-conductor 1/4" sleeve). **External speaker socket:** 8 ohm impedance, accepts RCA type phono plug.

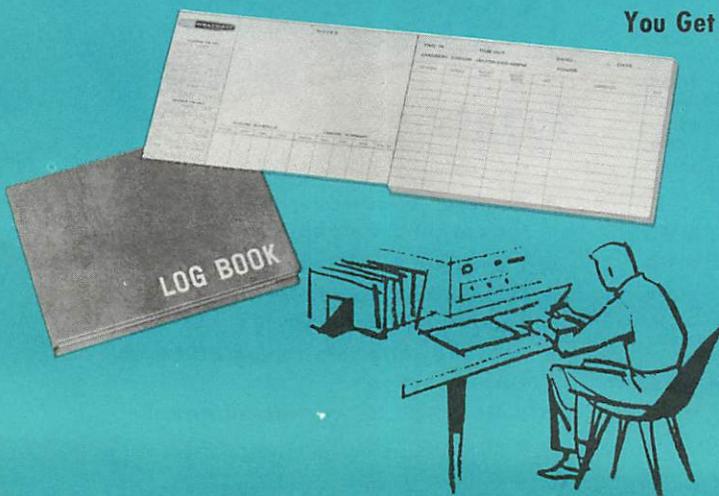
TRANSMITTER SECTION—Frequency coverage: HW-20; 143.8 to 148.2 mc (crystal or VFO control). HW-10; 49.8 to 54.0 mc (crystal or VFO control). **Modulation:** .01 volts minimum at 1000 cps=100%. **RF power output:** 8 watts nominal AM, 50 ohm; 10 watts nominal CW, nonreactive load. **Distortion:** 10% or less, with 100% modulation at 1000 cps. **Output impedance:** 50 to 72 ohm, unbalanced. **Low pass filter:** HW-20; 152 mc cutoff frequency. HW-10; 54 mc cutoff frequency. **Key jack:** Accepts PL-55 type plug (standard 2-conductor 1/4" sleeve). **Crystal sockets:** Accepts FT-243 type holders, pin diameter .093", pin spacing .466". **Microphone:** High impedance ceramic element push-to-talk type with coil cord. **Crystals:** (Not furnished) HW-20; 8 mc fundamental range (8.000 to 8.222 mc for 2 meter band). HW-10; 8 mc fundamental range (8.333 to 9.000 mc for 6 meter band).

GENERAL—Power requirements: Input voltage: 6.3V DC, 12.6V DC, 117V AC. Transmit—14.5 amps, 7.5 amps, 120 watts. Receive—8.5 amps, 4.5 amps, 60 watts. **Cabinet dimensions:** 6" H. x 10" D. x 12" W. **Shipping weight:** 34 lbs.

You Get This Special Free "BONUS"

with each Heathkit Amateur Gear Order of \$50 or More!

5 FREE new-style amateur log books and cover will be included with each amateur gear order of \$50 or more if you order now! Recognizing the limitations of today's log books, Heath engineers have come up with a real FB-log book, with a page for each QSO and with basic data logged only once. No more laborious transferring of notes for permanent filing. In addition to spaces provided for each station, you have room for additional info, such as handle, reports, rig and comments. There's a calendar on each page and space for traffic and schedule summaries. It measures just 8 1/2" x 5 1/2" when closed, just right for your operating position. With your Heathkit Amateur Gear order of \$50 or more, you get five of these special log books and a handsome vinyl cover in which to insert the current log book to keep it neatly in place on your desk ready for instant use . . . all free! Order your Heathkit amateur gear today . . . this free offer ends September 1, 1961.



Choose Heathkit® Amateur Gear . . .

Low Cost RECEIVER for the beginning amateur or short wave listener

Receives 'round the world signals from broadcast band to 10 meters. High sensitivity, good stability and versatile control features. Electrical bandspread is provided for fine tuning. Transformer operated power supply for safety and high efficiency. Quality components and neat, efficient circuit layout for easy assembly. Easily aligned with signal generator and voltmeter: 9 lbs.

Kit AR-3 (less cab.) . . . \$3 dn., \$5 mo. **\$29.95**
CABINET No. 91-15: For AR-3 above. . . 3 lbs. **\$4.95**

SPECIFICATIONS—Frequency range: 550 kc to 30 mc on four bands. Amateur bands plainly marked on dial. **Tube complement:** (1) 12BE6, (1) 12BA6, (1) 12AV6, (1) 12V6, (1) 5Y3. **Controls:** General coverage tuning, Bandspread tuning, Antenna trimmer, Bandswitch, Noise limiter, on/off, Phone-Standby-CW switch, RF gain control/AVC, on/off; audio gain; AC on/off—Headphone jack, Accessory socket. **Power requirements:** 105-125 V, 50/60 cycles AC, 40 watts. **Dimensions:** 11½" W x 5¼" H x 6¼" D.

- ✦ **Covers 550 kc to 30 mc in four bands**
- ✦ **Large slide-rule dial—electrical bandspread**
- ✦ **Neat, efficient circuit layout for easy assembly**
- ✦ **Modern 5-tube superheterodyne circuit**



AR-3
\$29.95



MR-1
\$119.95

- ✦ **1 uv for 10 db signal-to-noise ratio**
- ✦ **Built-in panel "S" meter**
- ✦ **Crystal lattice-type IF filter**
- ✦ **Rotating slide rule tuning dial**

Designed for rugged mobile use . . .

"COMANCHE" MOBILE AMATEUR RECEIVER Kit

All the features you've ever wanted in a mobile receiver . . . superb styling . . . rugged construction . . . lasting quality . . . top mobile performance. The Comanche's modern, 8-tube superhet circuit with crystal-lattice type IF filter and product detector provides excellent sensitivity, selectivity and stability. Operates AM, CW and SSB on 80 through 10 meters. Circuit includes an RF stage, converter, 2 IF stages, 2 detectors, noise limiter, 2 audio stages and a voltage regulator. A 30-1 gear driven, spring-loaded tuning assembly and rotating slide-rule tuning dial assure smooth, easy station selection. A versatile performer, the Comanche is designed to operate from a 12-volt car battery with the Heathkit HP-10 Mobile Power Supply or it can be converted in a matter of minutes to "fixed station" operation using the Heathkit HP-20 AC Power Supply. Steel chassis and compartmental construction withstands mobile vibrations and shock for long life. 19 lbs.

Kit MR-1 . . . \$12 dn., \$11 mo. **\$119.95**
 Kit AK-7 Accessory speaker for MR-1 . . . 3 lbs. **\$5.95**

SPECIFICATIONS—IF frequency: 3 mc. **Frequency coverage:** 80, 40, 20, 15, 10 meter bands. **Crystal-lattice IF filter:** Center frequency, 3 mc; Bandwidth at 6 db, 3 kc; Bandwidth at 60 db, 10 kc max. **Panel controls:** BFO tuning, RF gain, AF gain on/off, CW-SSB-AM, NL, AVC, Main tuning, Bandswitch, Antenna trimmer. **Tube complement:** (2) 6BZ6, (2) 6EA8, (1) 6BE6, (1) 6T8, (1) 6AO5, (1) OA2. **Sensitivity:** Less than 1 uv for 10 db signal to noise ratio. **Power requirements:** 12 V at 1.65 amp or 6 V at 3.3 amp AC or DC for filaments, 300 VDC at 125 ma for B+. Total power 60 watts. **Dimensions:** 6½" H x 12¼" W x 9 15/16" D.

Designed to the highest standards . . .

"MOHAWK" DELUXE AMATEUR RECEIVER Kit

This superbly designed receiver incorporates many "deluxe" features for clear, rock-steady reception and operating convenience. The expertly-engineered 15-tube circuit features double conversion with IF's at 1682 kc and 50 kc and covers all amateur bands from 160 through 10 meters, including 11 meter Citizen's Band. Each amateur band is separately calibrated on an 8-position rotating slide-rule tuning dial for precise frequency settings and ample bandspread. One band is calibrated to cover 6 & 2 meters using converters. Superb SSB reception is provided by a product detector and crystal-controlled oscillators for upper and lower side-band reception. The front-end coil/bandswitch assembly is factory wired and aligned for top performance and greatly simplifies assembly. Other features include 5 selectivity positions, bridged T-notch filter, built-in 100 kc crystal calibrator and vernier gear drive tuning. Rugged well-rated components are used throughout for years of dependable, trouble-free performance, and the rich, professional styling of the "Mohawk" adds the final touch of quality. 66 lbs.

Kit RX-1 . . . \$27.50 dn., \$23 mo. **\$274.95**
 Kit AK-5 Accessory speaker for RX-1 . . . 6 lbs. **\$9.95**

SPECIFICATIONS—Fifteen tube double conversion superheterodyne receiver with selectable sideband. **First IF frequency:** 1682 KC. **Second IF frequency:** 50 KC. **Band coverage:** 160-10 meters. **Selectivity range:** 5 kc, 3 kc, 2 kc, 1 kc, .5 kc. **Bridged T-notch filter:** 50 db rejection notch. **Panel controls:** RF Gain, Tuning, IF Gain, Antenna Trimmer, AF Gain w/on-off switch, Calibrate Set, T-Notch Tuning, Calibrate On, T-Notch Depth, CW-SSB-AM, ANL, Receive Standby, AVC, Upper-Lower Sideband, BFO, Selectivity, Band, Phones. **Tube complement:** 6BZ6 RF Amplifier, 6CS6 First Mixer, 12AT7 Oscillator-Cathode Follower, 6BA6 1682 kc IF amplifier, 6CS6 Second Mixer, 12AT7 1632-1732 kc crystal Oscillator, 6BA6 50 kc IF amplifier, 6BJ7 DET-AVC-ANL, 6CS6 Product Detector, 12AT7 First Audio S Meter Amp., 6AO5 Audio Output, 6BA6 100 kc Oscillator, OA2 Voltage Regulator, 5V4 Rectifier. **Signal to noise ratio:** 10 db at less than 1 microvolt input. **Power required:** 117 VAC, 50/60 cycle, 75 watts. **Cabinet size:** 19½" W x 11¼" H x 16" D.



RX-1
\$274.95

- ✦ **Amateur band coverage only for maximum stability and accuracy**
- ✦ **1 uv input for 10 db signal to noise ratio**
- ✦ **Factory assembled and aligned coil/bandswitch assembly**
- ✦ **Rotating slide rule tuning dial with vernier action**
- ✦ **Built-in 100 KC crystal calibrator**

for Value and Performance



DX-60
\$82.95

The DX-60 Surpasses Quality and Performance of Transmitters Costing Far More!

- ✦ 90 watts phone or CW
- ✦ Neutralized 6146 final amplifier
- ✦ Grid block keying
- ✦ Built-in low pass filter

This outstanding phone and cw transmitter offers far more in quality and performance than any other unit in its price and power class! A front panel switch selects any of four crystal positions or external VFO. Controlled carrier modulator and silicon diode power supply are built in. Single knob bandswitching for 80 through 10 meters and pi-network output coupling provide complete operating convenience. Panel meter shows final grid or plate current for easy tuning. Assembly is a marvel of simplicity with clean, rugged construction and thoughtful circuit layout. A pre-cut, cabled wiring harness eliminates tedious wiring and the informative instructions furnished make it an ideal kit for the novice. May be run at reduced power for novice operation. Less crystals. 25 lbs.

Kit DX-60...\$8.30 dn., \$8 mo. **\$82.95**

SPECIFICATIONS—Power input: 90 watts peak, carrier controlled phone or CW. Output impedance: 50-72 ohm (coaxial). Output coupling: Pi-network. Operation: CW or AM phone—crystal or VFO control. Band coverage: 80 through 10 meters. Power requirements: 117 V 60 cycle AC, 225 watts. Dimensions: 13 3/4" W. x 11 1/2" D. x 6 1/2" H.

High power mobile facilities at low cost . . .

HEATHKIT "CHEYENNE" MOBILE AMATEUR TRANSMITTER

Get in on the fun and excitement of mobile amateur operations with the Heathkit "Cheyenne" transmitter. Provides up to 90 watts input on AM phone or CW on 80 through 10 meters. Features include a built-in VFO, controlled carrier modulator, three exciter stages plus 6146 final amplifier and pi network (coaxial) output. A spotting switch allows "zero-beating" incoming signals for off-the-air tuning, and a specially designed microphone with push-to-talk switch assures effective modulation with plenty of "punch" by properly shaping the audio response. All power necessary for mobile operation is furnished by the Heathkit HP-10 Mobile Power Supply (page 33). The "Cheyenne" can also be used for fixed station operation on 117 V household current using the Heathkit HP-20 AC Power Supply (page 33). Styling features die-cast knobs and front panel with raised meter, tuning dial and control panel escutcheons. 23 lbs.

Kit MT-1...\$10 dn., \$9 mo. **\$99.95**

SPECIFICATIONS—Power input: 90 watt peak carrier controlled phone. Output impedance: 50-72 ohms. Output coupling: Pi network (coaxial). Band coverage: 80, 40, 20, 15, 10 meters. Panel controls: Meter switch, spotting switch, final tuning, drive adjust, bandswitch, VFO tuning, audio (gain), loading, function switch. Tube complement: 12AX7, 6DE7, 6AU6, 6CL6, 5763, 6146, OA2. Power requirements: 500-600 V DC @ 150 ma; 300 V DC @ 100 ma; 6.3 V @ 4.7 amps or 12.6 V @ 2.35 amps AC/DC. Dimensions: 6 1/2" H x 12 3/4" W x 9 15/16" D.



MT-1
\$99.95

- ✦ 6146 final amplifier—Pi network output
- ✦ Spotting switch for "off-the-air" tuning
- ✦ Rugged, vibration-proof construction
- ✦ Specially designed push-to-talk microphone



TX-1
\$239.95

- ✦ 150 watts phone, 180 watts CW & SSB
- ✦ Rotating slide-rule dial with vernier tuning
- ✦ Time sequence keying
- ✦ Adjustable low-level speech clipping
- ✦ Provision for SSB adapter built-in

The standard in amateur AM transmitters . . .

THE FAMOUS HEATHKIT "APACHE"

Recognized in Amateur Radio circles everywhere for its high quality and dependability, the "Apache" provides all the extras for truly fine performance and ease of operation. The "Apache" transmitter and its matching counterpart, the "Mohawk" Receiver, together form a fixed-station combination with amateur radio facilities unmatched at this price anywhere! The "Apache" VFO features improved frequency control for SSB transmission and has provision for plug-in connection of the Heathkit SB-10 SSB adapter. Covers amateur bands from 80 through 10 meters. Each band is separately calibrated on a rotating slide-rule VFO dial with vernier tuning for precise frequency settings with ample band spread. Precision mechanical controls operate smoothly with the positive action characteristics found only in the most expensive equipment. Other features include adjustable, low-level speech clipping, time sequence keying for a clean, chirpless CW note, spotting push-button for off-the-air tuning, neutralized and extensively shielded final amplifier for TVI protection and high stability, and pi network output coupling for smooth loading into antenna. A fine rig for the amateur who wants the best . . . at the lowest possible cost! 110 lbs.

Kit TX-1...\$24 dn., \$21 mo. **\$239.95**

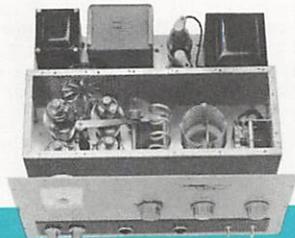
SPECIFICATIONS—Power input: 150 w PHONE, 180 w CW. Output impedance: 50-72Ω (non-reactive). Output coupling: Pi Network (coaxial). Operation: Crystal-VFO, CW-SSB-PHONE (time sequence keying, SSB requires external adapter). Band coverage: 80, 40, 20, 15, 10. Audio output: 100 watts at 300-3000 cycle (Adjustable low-level speech clipping; 500Ω output available). Tube complement—power section: 2 selenium rectifiers, 5V4 low voltage rectifier, 2-5R4GY HV rectifier, OA2 voltage regulator, 2-OB2 voltage regulators. Audio section: 12AX7 speech amplifier, 12AU7 clipper amplifier, 6AL5 clipper, 12BY7 audio driver, 2-6CA7/EL34 modulator. RF section: 6AU6, VFO, 6CL6 crystal oscillator-buffer, 5763 driver, 2-6146 parallel power amplifier, 6AQ5 clamp. Power requirements: 115 V AC, 50-60 cycles. Standby (AM, CW): 150 watts. Standby (SSB): 230 watts. CW: 420 watts (intermittent). Phone: 500 watts (peak). SSB: 500 watts (peak). Cabinet size: 19 1/2" W x 11 1/2" H x 16" D.

For the Big Boost in Amateur Transmitting Power! . . . The Heathkit® Warrior

- ✦ Operates SSB, AM and CW on 80 through 10 meters
- ✦ Exclusive internal RF shielding for maximum TVI suppression
- ✦ Interlocked switching of HV for maximum circuit protection
- ✦ Low cost, high quality, 811A and 866A tubes
- ✦ Fan forced-air cooling—clean, functional styling

Kit Form
or
Factory
Assembled

HA-10
\$229⁹⁵



Here's the Heathkit That Won Instant Acceptance By Amateurs Everywhere

The new Heathkit "Warrior" puts high quality and power-packed performance within easy reach of the amateur who wants the big boost in amateur transmitting power! It is a completely self-contained desk-top, kilowatt linear loaded with special features . . . at half the cost of comparable equipment. Note these many quality features: *Completely self-contained* . . . Amplifier and power supplies for HV, filament and bias are built-in. *Versatile* . . . May be driven by a 50 to 100 watt output transmitter (no matching or swamping network required). *Efficient* . . . Stable grounded-grid circuit puts part of drive in output for up to 70% efficiency. *High quality, low-cost tubes* . . . Four paralleled 811A's and two 866A's forced air cooled by built-in fan. *Dynamic Regulation* . . . Large oil-filled, 8 MFD, 2 KV capacitor and 5-50 henry swinging choke for high peak power output with low distortion. *Neutralized Final* . . . Careful design provides a high degree of overall stability in conjunction with the grounded grid circuit configuration. *Interlocked switching* . . . to prevent accidental application

of HV before switching on filament and bias. *Exclusive internal RF shielding* . . . for maximum protection against TVI. *Monitor Output* . . . gives constant output to scope regardless of frequency. *Rugged construction* . . . 16 gauge steel chassis— $\frac{1}{8}$ " aluminum front panel—welded one-piece cabinet.

Compare the Heathkit "Warrior" . . . feature for feature . . . quality component for quality component . . . you'll find no shortcuts . . . only the finest watts-per-dollar value in a kilowatt linear amplifier anywhere! 99 lbs.

Kit HA-10 . . . \$23 dn., \$20 mo. **\$229.95**
Assembled HAW-10 . . . \$33 dn., \$28 mo. **\$329.95**

SPECIFICATIONS—Maximum power input: SSB-1000 watts P.E.P., CW-1000 watts, AM-400 watts (500 watts using controlled carrier modulation), RTTY-650 watts. **Output circuit:** Variable pi-network (50 to 75 ohms). **Driving power required:** 50 to 75 watts—depending on frequency. **Input circuit:** Broad banded—requires no tuning. **Input impedance:** approximately 70 ohms; provides effective match for exciters having 50 ohm output Z. **Band coverage:** 80, 40, 20, 15, 10 meters. **Panel metering:** Switch-selected, grid current, plate current, high voltage and relative power output for ease of loading. **Tube complement:** 4-811A, 2-866A. **Dimensions:** 19 $\frac{1}{2}$ " W x 11 $\frac{1}{2}$ " H x 16" D.



VHF-1
\$159⁹⁵

- ✦ Built-in VFO, modulator and power supplies
- ✦ Extensive RF shielding
- ✦ "Spotting" push button for "zero-beat"

High Power 6 & 2 Meter "SENECA" VHF TRANSMITTER Kit

You'll find the "Seneca" hard to beat for real value and DX power on the VHF amateur bands! Provides up to 120 watts input on phone and 140 watts input on CW on 6 meters. Ratings are only slightly reduced on 2 meters. Design features include: controlled carrier phone operation, built-in VFO for both 6 & 2 meters, four switch-selected crystal positions, extensive RF shielding, large slide-rule dial with vernier tuning and rugged, handsome styling. Circuit has two built-in power supplies, five RF stages, two dual-triode audio stages and two 6146's in the final amplifier. Panel controls select VFO or crystal control, phone or CW operation on both amateur bands. Covers popular CAP and MARS VHF frequencies. 59 lbs.

Kit VHF-1 . . . \$16 dn., \$14 mo. **\$159.95**

SPECIFICATIONS—Power input: 6 meters, 140 watts CW; 120 watts phone (peak). 2 meters, 110 watts CW; 95 watts phone (peak). **Output impedance:** 50 to 72 ohm (non-reactive). **Output coupling:** adjustable link (coaxial connector). **Operation:** crystal, VFO, CW, phone. **Band coverage:** 50 to 54 mc, 144 to 148.3 mc. **Audio:** screen modulated, controlled carrier. **Power requirements:** 117 volts AC, 60 cycles; Standby (phone, CW) 120 watts. Full load (phone, CW) 400 watts (intermittent). **Dimensions:** 16 $\frac{1}{2}$ " W x 10 $\frac{1}{4}$ " H x 10" D.



SB-10
\$89⁹⁵

- ✦ Built-in VOX with anti-trip circuit
- ✦ Sealed audio phase shift network
- ✦ Produces USB, LSB or DSB signals with or without carrier insertion

Switch to SSB for More Talk Power, Less Fade and Interference

This Single Sideband Adapter lets you enjoy the advantages of SSB operation without affecting the normal AM and CW functions of your transmitter. Designed primarily as a plug-in adapter for the Heathkit TX-1 "Apache" transmitter, the SB-10 may also be used with similar transmitters by making a few simple circuit modifications. The SB-10 uses the phasing method of generating a single sideband signal, allowing operation entirely on fundamental frequencies. The critical audio phase shift network is supplied completely preassembled and wired in a sealed plug-in unit. Produces USB, LSB and DSB signals with or without carrier insertion on 80 through 10 meters. An easy-to-read panel meter indicates relative power output to aid in tuning, and single knob bandswitching provides extra operating convenience. Also featured is a built-in electronic voice control with anti-trip circuit and an EL 84/6BQ5 for linear RF output. 12 lbs.

Kit SB-10 . . . \$9 dn., \$9 mo. **\$89.95**

SPECIFICATIONS—Power output: 10 watts P.E.P. (peak envelope power). **Power input:** Less than 3 watts of RF at the fundamental operating frequency required. **Carrier suppression:** 40 DB. **Sideband suppression:** 30 DB. **Output:** Pi network, low impedance, coaxial. **Input:** Low impedance, coaxial. **Band coverage:** 80, 40, 20, 15, 10 meters. **Circuitry:** Phasing method of SSB signal generation with voice control and anti-trip action. **Power requirements:** 350 VDC at 85 ma and 6.3 VAC at 3.5 a. **Meter:** 2 $\frac{1}{2}$ " 200 ua movement, indicates carrier null and relative power output. **Dimensions:** 10" H x 6 $\frac{1}{2}$ " W x 13" D.

These Outstanding TRANSCEIVER Values put you on the 2, 6 or 10 Meter Amateur Bands at Minimum Cost!

These low cost transceiver kits provide excellent performance in emergency work or local net operations. All models have crystal-controlled transmitters and tuneable, super-regenerative receivers with RF preamplifiers. The high sensitivity receivers pull in signals as low as 1 uv! Both 6 & 2 meter models multiply to straight-through finals from an oscillator using a fundamental crystal in the 8 mc range. Features include a front-panel transmit-receive switch with transmit-hold position, metering jack, ceramic element microphone and two power cords (one for built-in AC supply and one for DC, using GP-11 vibrator power supply below). Less crystal. 8 lbs. each.

Kit HW-19 (10 meter) . . . \$4 dn., \$5 mo.	\$39.95
Kit HW-29A (6 meter) . . . \$4.50 dn., \$5 mo.	\$44.95
Kit HW-30 (2 meter) . . . \$4.50 dn., \$5 mo.	\$44.95

SPECIFICATIONS—Receiver type: Superregenerative detector with RF amplifier stage. Sensitivity: Usable with signals as low as 1 microvolt at antenna terminals. Speaker size: 3½" (round). Audio power output: Approximately 1 watt (undistorted). Transmitter power input to final RF amplifier: Approx. 5 watts. Frequency control: Quartz crystal; 3rd overtone, 10 meter; 8 mc fundamental 6 & 2 meter, (not supplied). Power requirements: With built-in supply; 105-125V AC, 50-60 cycle, 35 watts (10 meter), 45 watts (6 & 2 meter); with external power supply: Plate requirements; 260 V DC @ 60 ma (10 meter), 90 ma (6 & 2 meters). Filament requirements: 6 V @ 1.8 amps or 12 V @ 0.9 amps (10 meter), 6 V @ 2.35 amps or 12 V @ 1.2 amps (6 & 2 meter). Cabinet dimensions: 8" H x 6" D x 9¾" W.



HW-19
\$39.95

- ✦ Crystal controlled transmitters
- ✦ Tuneable, superregenerative receivers with RF stage
- ✦ Ideal for mobile or fixed station use



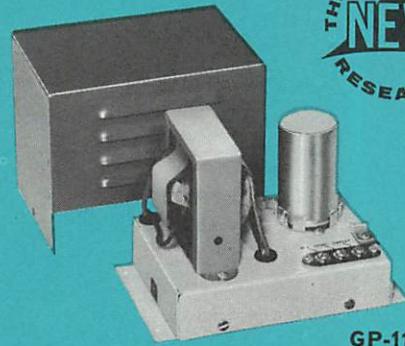
New Mobile VIBRATOR POWER SUPPLIES for 6 or 12 volt operation

This new Heathkit GP-11 Vibrator Power Supply is heavy-duty rated to convert 6 or 12 volt battery power to the plate power requirements of a wide variety of mobile equipment. Its higher power handling capabilities make it especially suited for use with the Heathkit Amateur Band Transceivers models HW-19, HW-29A, HW-30 and the Heathkit CB-1. Silicon diode rectifiers and alternate wiring instructions allow use on either 6 or 12 volt systems. The small, physical size of the unit lends itself well to the often limited space available in cars, boats, trucks, etc. Provision is made for switching the unit on and off from remote locations allowing installation away

from the equipment with which it is used. Clear, concise non-technical instructions make this kit easy to assemble, and the high quality parts furnished assure fine performance. A ventilated cover is furnished to protect all internal components and the unit is attractively color styled in green and gray-green. 6 lbs.

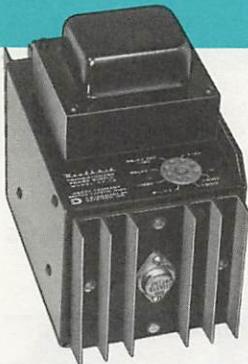
Kit GP-11 **\$16.88**

SPECIFICATIONS—Power requirements: 6 volt version, 6.3 VDC @ 6.5 amperes; 12 volt version, 12.6 VDC @ 3 amperes for rated output. Power output: 250 VDC @ 100 ma. ACAS. Power rectifier: Two silicon diodes in voltage doubler circuit. Vibrator: Mallory Type 1610 or equivalent. Vibrator frequency: Approximately 115 cps. Overall dimensions: 4¾" H x 6¾" W x 4¼" D.



GP-11
\$16.88

- ✦ Silicon diode rectifiers
- ✦ Current-rated for HW-19, 29A, 30 and "CB-1"
- ✦ Small, compact size



- ✦ All semi-conductor circuit
- ✦ Instant starting
- ✦ High efficiency
- ✦ Rugged construction

HP-10
\$44.95

High Performance Transistor MOBILE POWER SUPPLY Kit

Furnishes all power required to operate the Heathkit MT-1 mobile transmitter and MR-1 mobile receiver. Circuit features include such refinements as relay control of primary power, heavy filtering of input and output leads, capacitor discharge resistors, effective suppression of voltage transients, efficient silicon rectifiers and rugged construction. Two heavy-duty power transistors are used in the switching circuit with extruded aluminum heat sinks for efficient cooling. Power take-off for equipment is through a standard octal socket with voltage points clearly screened on the power supply chassis. The HP-10 operates from 12 volt DC source and is fused for protection. 10 lbs.

Kit HP-10 . . . \$4.50 dn., \$5 mo. **\$44.95**

SPECIFICATIONS—Input voltage: 11 to 15 V DC (12.6 nominal). Input current: 2 to 13 amps (as a function of output load). Total power output: 120 watts continuous, 150 watts normal intermittent operation. Power available: 600 VDC @ 200 ma or 600 VDC @ 150 ma & 300 VDC @ 100 ma, and bias of —125 VDC @ 30 ma. Efficiency: Approximately 75%. Maximum ambient operating temperature: 120 degrees F. at 120 watt continuous, 150 degrees F. at 120 watt intermittent operation (50% duty cycle). Dimensions: 8" W x 7¾" H x 6¾" D.



- ✦ Extensive line filtering
- ✦ Silicon diode rectifiers
- ✦ Dynamic regulation

HP-20
\$29.95

Enjoy Maximum Versatility of your Mobile Amateur Gear with this AC POWER SUPPLY Kit

With the HP-20 you can convert your mobile gear to "fixed-station" operation with a simple plug-in connection. Supplies filament, B+ and bias voltages to operate Heathkit and most other mobile gear on 117 VAC. High value capacitors in the output of RF filters provide good dynamic regulation and silicon diode rectifiers are used throughout for long life and dependable performance. Unit has local on/off switch and pilot light indicator. Octal socket output connection information is screened on the chassis for permanent reference. Fused for protection. 14 lbs.

Kit HP-20 . . . \$3 dn., \$5 mo. **\$29.95**

SPECIFICATIONS—Power requirements: 117 volts AC, 50/60 cycles, 200 watts. Total DC continuous power output: 120 watts (600 volts @ 200 ma or 600 volts @ 150 ma & 300 volts @ 100 ma; bias of —130 volts @ 30 ma also provided). Filament power: 6.3 volts @ 8 amperes or 12.6 volts @ 4 amperes. Regulation: Approximately 10% (50% load to 100% load, from high voltage tap). Overall dimensions: 9" L x 4¾" W x 6" H.

Heathkit® brings you the latest in Test

The New Heathkit HANDY LAB . . .

a thousand and one uses at home or at work!

Here is a practical, all-in-one hand-held tester for the service technician, Ham operator, or hobbyist. This Handy Lab combines the functions of a DC voltmeter, transistorized signal generator, continuity checker, resistor and condenser substitution boxes, and may be used as a code practice oscillator. The Heathkit Handy Lab is battery powered allowing use anywhere, any time for complete operation flexibility. A single, 18-position switch selects any of the functions.

The 1000 ohms-per-volt DC voltmeter has four ranges: 0-15 V, 50 V, 150 V and 500 V full scale. The signal generator has both RF and AF output and is designed for servicing AM radios. The RF signal can be set to any frequency between 450 KC and 700 KC. For example, if the preset fundamental frequency were set to 455 kc, it could be used for IF alignment of most AM radios. The harmonics of 455 KC (910 KC and 1365 KC) could then be used for oscillator and RF alignment. The 1000 cycle (approximate) audio signal that modulates the RF signal is also available at the test leads for checking audio circuits. There are five 1 W resistors: 100 ohms, 1 K ohms, 10 K ohms, 100 K ohms and 1 megohm. Five capacitors: .001, .005, .02, .1, and 8 MFD @ 400 volts available for substitution tests. A neon bulb is provided to indicate AC voltage over 75 volts. A #49 pilot lamp indicates continuity up to 50 ohms, adequate for most continuity testing purposes. The IM-20 also makes a handy code practice oscillator. By connecting the test leads to a telegraph key and placing the IM-20 near any AM radio, you can practice code with audible indication or use the #49 lamp which will flash for visual indication. The many functions of the IM-20 coupled with its portability make it ideal for use both in the shop or on service calls. Its small, compact size fits easily in tool case or coat pocket. The instrument comes complete with test leads and batteries. 2 lbs.

Kit IM-20 \$14.95



IM-20
\$14.95



- ✦ 5 functions in one instrument
- ✦ Fills all basic service needs
- ✦ Simple one-switch operation
- ✦ Battery operated for complete portability
- ✦ Coat-pocket size—attractively styled
- ✦ Easy to build . . . low in cost



IT-10
\$6.95

Eliminate guesswork . . . Check transistors and diodes

the safe, easy way with this HANDY CHECKER

- ✦ Tests low and high power transistors
- ✦ Tests forward and reverse current of diodes
- ✦ Rugged self-protecting case design

SPECIFICATIONS—**Transistor test:** leakage, short, open and current gain. **Diode test:** forward and reverse current. Also serves as a continuity checker. **Switches:** Forward-Reverse/PNP-NPN, Diode/HI-LO Leakage-Gain. **Power supply:** self-contained, two 1.5 volt size "C" flashlight cells. **Dimensions:** 3 1/4" H. x 3 3/4" W. x 3 3/4" D.

Transistors are being used to greater extent than ever before in the electronics industry, calling for a reliable checker to help speed service operations and eliminate guesswork. The IT-10 tests transistors, diodes and also serves as a handy continuity tester . . . just the thing for carrying with you on service calls or for use in the shop. Its small, compact size fits easily into tool case, glove compartment, etc., and is self-protecting with its extended-edge case. Removable test leads are provided for checking transistors which do not fit the tester socket. The versatile switching system used in the IT-10 provides testing for either PNP or NPN types and eliminates need for switching test leads for diode testing. Easily assembled. 2 lbs.

Kit IT-10 \$6.95

Specially designed for critical AC measurements . . . Heathkit AUDIO VTVM

- ✦ Wide frequency response
- ✦ Precision 1% voltage divider
- ✦ Easy-to-read 4 1/2" 200 ua meter
- resistors

This audio VTVM uses a tried and proven circuit emphasizing stability, sensitivity and broad frequency response. A cascode amplifier with cathode follower input provides high input impedance (1 megohm at 1 kc) to minimize circuit loading and assure wide frequency response. The high gain and low-noise features of cascode type circuits make possible a 10 millivolt full scale sensitivity. The meter circuit uses four germanium diodes in a full wave bridge circuit with negative feedback for good linearity and features increased damping to stabilize the meter in low frequency measurements. The wide voltage range, switch-selected in 10 db steps, makes it especially valuable in high fidelity and laboratory applications. Neat, straightforward circuit layout for easy assembly. Test leads included. 4 lbs.

Kit AV-3 . . . \$3.20 dn., \$5 mo. \$31.95
Assembled AVW-3 . . . \$4.45 dn., \$5 mo. \$44.50

Kit Form
or
Factory
Assembled

AV-3 \$31.95

SPECIFICATIONS—**Frequency response:** ±1 db, 10 cps to 400 kc, .01 volt through 100 volt ranges ±2 db from 10 cps to 40 kc, 300 volt range. **Sensitivity:** 10 millivolts full scale (lowest range). **Range volts:** 0.01, 0.03, 0.1, 0.3, 1, 3, 10, 30, 100, 300 volts, RMS, full scale. **Decibels:** Total range -52 db to +52 db. Scale -12 to +2 db. Ten switch selected ranges from -40 to +50 db. **Input impedance:** 1 megohm at 1 kc. **Accuracy:** Within 5% of full scale. **Multipliers:** 1% precision type. **Meter:** 4 1/2" streamlined case with 200 microampere movement. **Tube complement:** (2) 12AT7, (1) 6C4. **Power supply:** Power transformer; selenium rectifier with resistance-capacitance filter. **Power requirement:** 105-125 volts AC, 50/60 cycles, 10 watts. **Dimensions:** 7 3/4" H. x 4 3/4" W. x 4 1/4" D.



Extra features for extra performance . . .



IT-11
\$29⁹⁵

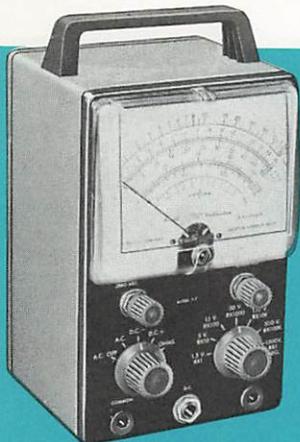
in this new Heathkit CONDENSER CHECKER

The outstanding qualities of this new Heathkit condenser checker now bring you features and performance unheard of in this price range. The new IT-11 tests condensers of all types for value, leakage, shorts and power factor, and it also measures resistance from 5 ohms to 50 megohms. Capacity measurements are made in four ranges from 10 mmf to 1000 mfd. All readings are made on direct-reading scales without the need of involved calculations. The specially-designed low-voltage bridge circuit used in the IT-11 permits safe testing of easily-damaged miniature electrolytics such as those used in transistorized equipment. A wide range of leakage test voltages and three leakage sensitivities (determined by type switch) allow testing condensers at their rated values. As an additional safety measure, the leakage/discharge switch places a short across the internal standard and discharges the condenser under test through a 10 k ohm resistor to prevent damage to both capacitor and tester. The extra comparator circuit provided in the IT-11 has "external-standard" terminals for use in comparing similar components up to a ratio of 25 to 1, to measure unknown "R," "L" or "C" values, or to determine transformer turns ratio directly. Other special circuit features include DC operation of "eye" tube to minimize the fuzzy edge normally encountered when the AC bridge voltage is applied directly to the "eye" tube. Provision is also made for switch selection of either internal 60 cycle generator or external generator for measurements at other frequencies up to 10 kc. The many circuit refinements of the IT-11 coupled with its versatile overall operation make it one of the most useful test instruments the service technician or experimenter can own! Instructions on assembly and operation included. 7 lbs.

Kit IT-11 . . . \$3 dn., \$5 mo. **\$29.95**

SPECIFICATIONS—Power requirements: 105-125 V AC 50/60 cycles, 30 watts. Power supply: Transformer operated, half-wave rectifier. Capacity: four ranges + external standard, .0001-.005 mfd, .001-.5 mfd, .1-50 mfd, 20-1000 mfd. Resistance: Three ranges + external standard, 5-5 K ohm, 500-500 K ohm, 50 K-50 megohm. Inductance: External standard only. DC Leakage test voltages: 3, 6, 10, 15, 25, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600. Leakage circuit sensitivity: Electrolytic, 2 ma; Miniature electrolytic, 15 ua; Paper, Mica, Ceramic, etc., 2 ua. Test circuit: AC bridge powered by internal 60 cycle supply or external generator. Tube complement: 6ME5, 6BN8, 6AX4. Dimensions: 9¹/₂" H x 6¹/₂" W x 5" D.

- ✦ **NEW! . . . Low bridge-voltage for checking miniature electrolytics**
- ✦ **NEW! . . . 16 switch-selected, leakage testing voltages**
- ✦ **NEW! . . . Comparator circuit to measure "L," "C" or "R" using an external standard**
- ✦ **Measures capacity and resistance using internal standards**
- ✦ **Direct reading scales—no involved calculations**
- ✦ **Calibrated power factor control—"eye" tube indicator**
- ✦ **Checks all common capacitor types, including miniature electrolytics**



Kit Form
or
Factory
Assembled

Leader in its field . . . V-7A, World's Largest Selling VTVM

- ✦ **Easy-to-read 4¹/₂" 200 ua meter**
- ✦ **7 AC, 7 DC and 7 ohms ranges**
- ✦ **1% precision resistors**

SPECIFICATIONS—Meter scales: DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale. AC peak-to-peak: 0-4, 14, 40, 140, 400, 1400, 4000. Resistance: 10 ohm center scale x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures .1 ohm to 1000 megohms with internal battery. Meter: 4¹/₂" 200 ua movement. Multipliers: 1% precision type. Input resistance DC: 11 megohms (1 megohm in probe) on all ranges. Circuit: Balanced bridge (push-pull) using twin triode. Accuracy: DC ±3%, AC ±5% of full scale. Frequency response: ±1 db 42 cps to 7.2 mc (600 ohm source). Tubes: 12AU7, 6AL5. Battery: 1.5 volt, size "C" flashlight cell. Power requirements: 105-125 volt 50/60 cycle AC 10 watts. Dimensions: 7³/₄" H x 4-11/16" W x 4¹/₂" D.

V-7A \$25⁹⁵

No basic service instrument has contributed more to the field of electronics than the world-famous Heathkit V-7A. Its high quality and performance at low cost have made it a favorite for years. Measurement functions include AC volts (RMS), AC volts peak-to-peak, DC volts, resistance and db. Front panel controls include a rotary function switch (with DC polarity reversing positions to eliminate lead switching), rotary range selector, zero adjust and ohms adjust controls. High 11 megohm DC input resistance reduces circuit loading in equipment under test for highly-accurate readings. Circuit board makes assembly easy. Complete instructions provided for assembly and use of the finished instrument. Attractively styled in two-tone grey with high-definition white lettering. Test leads included. 5 lbs.

Kit V-7A . . . \$2.60 dn., \$5 mo. **\$25.95**

Assembled VW-7A . . . \$3.60 dn., \$5 mo. **\$35.95**

New King-Size VTVM . . . for fast, easy reading of all measurements

All you could ask for in a service bench VTVM and more! The IM-10 takes all the time-proven circuitry of the world famous V-7A and puts deluxe touches to it for even greater ease of operation and accuracy. Its big 6" 200 ua panel meter with multi-colored scales and high contrast panel screening shows at a glance the correct scale and range to use for fast, easy reading of all measurements. Separate 1.5 and 5 volt AC scales are provided for high accuracy. Recessed thumbwheel "zero" and "ohms" adjust guard against accidental change in settings. Broad frequency response and DB scale with 10 db steps between ranges for relative AC voltage measurements are among the many design features that make this kit of special value in service or laboratory applications. The clean, open circuit layout and wiring harness provided assure easy assembly. Test leads included. 6 lbs.

Kit IM-10 . . . \$3.30 dn., \$5 mo. **\$32.95**

- ✦ **Large 6" 200 ua meter**
- ✦ **High visibility panel screening**
- ✦ **Separate low voltage AC scales**

SPECIFICATIONS—Meter scales DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale (1.5 and 5 volt AC ranges read on separate scales). Ohmmeter: Scale with 10 ohm center x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures .1 ohm to 1000 megohms with internal battery. Multipliers: 1% precision type. Meter: 6" 200 ua movement. DC input resistance: 11 megohms (1 megohm in probe) on all ranges. AC input impedance: 320 K ohm shunted by 30 uuf (measured at input terminals). Circuit: Balanced bridge (push-pull) using twin triode. Accuracy: DC ±3%, AC ±5% of full scale. Frequency response: ±1 db 25 cps to 1 mc (600 ohm source). Tubes: 12AU7, 6AL5. Battery: 1.5 volt size "C" flashlight cell. Power requirements: 105-125 volts 50/60 cycle AC, 10 watts. Dimensions: 9¹/₂" H x 6¹/₂" W x 5" D.



IM-10 \$32⁹⁵

Equip your lab or service bench with Dependable



Kit Form
or
Factory
Assembled

- ✦ Output variable from 90 to 130 volts AC
- ✦ Big linear expanded scale meter, 90-140 V
- ✦ Protects against AC/DC set shock hazard

IP-10
\$54.95

ISOLATION TRANSFORMER KIT

An essential instrument in any efficient service shop or well equipped lab, the Heathkit IP-10 performs in a variety of situations with complete adaptability. It *controls* AC line voltage, *isolates* from the power line, *reduces* shock hazard, *protects* fuses, *solves* difficult service problems. Two heavy-duty 8-position switches vary output in .75 volt steps from 90-130 volts. A built-in expanded-scale meter accurately monitors output voltage and a spring-return slide switch gives a fast check of power line input voltage. Two AC receptacles on the front panel will accept 3-prong as well as standard type plugs. Unit is fused for protection. 21 lbs.

Kit IP-10...\$5.50 dn., \$5 mo.....**\$54.95**

SPECIFICATIONS—Input: 105-125 volts 50/60 cycles. **Output:** Variable from 90-130 volts in steps of approximately .75 volt by means of transformer secondary tap switching. **Meter:** 90-140 volt scale, ± 1 volt accuracy. Switch selection of input or output voltage indication. **Power rating:** 300 watts continuous, 500 watts intermittent. **Fuse:** 8 ampere. **Dimensions:** 6 $\frac{1}{2}$ " W x 9 $\frac{1}{2}$ " H x 5" D.



- ✦ Provides regulated B+, variable 0-400 V
- ✦ Provides bias and filament voltages
- ✦ Separate panel meters monitor output voltage & current

PS-4
\$56.95
Variable-Voltage
REGULATED POWER SUPPLY

Perfect for experimenters, engineers... the PS-4 eliminates the need for building up a separate power supply for each new circuit tried in design and development work. Provides variable, regulated B+, variable bias voltage, and 6.3 volt filament voltage for a variety of uses. Separate filament and high voltage transformers with "standby" switch eliminate waiting for filament warmup of tubes in equipment under test. Output terminals are separate and well insulated from chassis ground for safety in AC/DC work. Voltage and current output are continuously monitored by separate panel meters. Rugged, well-rated components are used throughout for long, reliable service and the instrument is fused for protection. A current limiting resistor prevents damage to the power supply should the bias voltage be accidentally shorted. For professional performance as well as appearance, you'll want the PS-4 on your work bench. 15 lbs.

Kit PS-4...\$5.70 dn., \$6 mo.....**\$56.95**
Assembled PSW-4...\$8.25 dn., \$8 mo.....**\$82.50**

SPECIFICATIONS—Output: 0-400 volts regulated DC at 0-100 ma, cont., 125 ma intermittent. 0 to -100 volts DC at 1 ma variable bias voltage, 6.3 volts AC at 4 amps. filament voltage. **Regulation:** Output variation less than 1% from no load to full load; Output variation less than ± 0.5 volt for a ± 10 v. change at 117 v. AC input. **Ripple:** less than 10 millivolts RMS, ripple, jitter and noise. **Output impedance:** less than 10 ohms, DC to 1 mc. **Meters:** Voltmeter 0-400 V or 0-150 V.; Milliammeter 0-150 ma. **Dimensions:** 13" W x 8 $\frac{1}{2}$ " H x 7" D.

No finer TUBE TESTER in kit form... and professional by any standard of comparison



TT-1
\$134.95

- ✦ Checks over 1100 tube types with data supplied
- ✦ Indicates Gm to 24,000 micro-mhos
- ✦ Constant, current heater supplies
- ✦ Ultra-sensitive grid current test
- ✦ Direct-reading ohmmeter leakage test

The Heathkit TT-1 tube tester with its modern functional styling, many unique design features and solid rugged construction now puts deluxe tube testing facilities within easy reach of all who want top-quality at lowest cost. Features include a built-in switch-operated calibration circuit for initial calibration and continued high accuracy; slide switches allow checking either section of dual-section tubes without changing selectors; specially designed roll chart mechanism for free, easy operation and a smooth taut viewing surface; special "disconnect" switch to remove all voltage potentials while setting up tube type. Kit assembly is simplified by seven color-coded wiring harnesses and detailed construction manual; technician assembly time approximately 40 hours. Attractive panel layout is designed for easy operation and the unit is handsomely styled in silver with black screening, black control knobs with silver inserts and housed in black leatherette case with white trim, nylon feet and removable top. 27 lbs.

Kit TT-1...\$13.50 dn., \$12 mo.....**\$134.95**

SPECIFICATIONS—Power requirements—Voltage: 105-125, 60 cycle AC. **Watts:** 10-60 (dependent upon tube under test). **Plate supply:** (SILICON RECTIFIERS), DC volts: 26, 90, 135, 225 + variable 80 to 200 (Separate DC supply for space charge grids). **AC volts:** 20, 45, 177. **Bias supply:** (SILICON RECTIFIER), Low range: 0 to negative 5 volts DC. High range: 0 to negative 20 volts DC. **Signal voltages:** 2, 1, .5, .25 volts AC 5000 cycles. **Filament supply voltage:** .65, 1.1, 1.5, 2, 2.5, 3.3, 5, 6.3, 7.5, 10, 13, 20, 27.5, 35, 47, 70 and 115. **Currents:** 300, 450, 600 ma. (Note: Filament voltage is reduced 10% during life test). **Testing circuits GM:** (Mutual conductance-amplifiers) 0-24,000 micro-mhos. **Emission:** Rectifiers and diodes. **Leakage:** Direct reading ohmmeter. **Grid current:** $\frac{1}{4}$ microampere sensitivity. **Voltage regulators:** Firing voltage and regulation tolerance. **Low power thyratrons:** Grid characteristics, conduction capabilities. **Eye tubes:** Control grid characteristics. **Meter AC:** 1000 ohms/volt (1 volt full scale). **DC:** 89 ma full scale. **Scales GM:** 0-3000 micromhos. VR test volts: 0-200 volts. Leakage: 0-10 megohms. Diodes O.K. Rectifiers O.K. Line check arrow at midscale. **Tube complement:** (1) 3A4 oscillator, (1) 12AV6 meter control. **Calibration circuit:** Built-in switch operated. **Socket accommodations:** 4-pin, 5-pin, 6-pin, 7-pin combination and pilot light, 7-pin miniature, 7-pin sub-miniature, 8-pin sub-miniature, octal, loctal, 9-pin miniature, blank. **Line voltage adjustment:** Continuously variable. **Roll chart mechanism:** Constant tension, free rolling, thumb wheel operated, illuminated. **Dimensions:** Cabinet (outside): 17 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " H x 7 $\frac{1}{2}$ " D. **Panel and chassis:** 17" W x 12 $\frac{1}{2}$ " H x 5 $\frac{1}{2}$ " D.

NO DOWN PAYMENTS REQUIRED!

Now you can buy any Heathkit of \$25 or more with *no down payment!* Disregard down payment requirements shown in this catalog—to figure your monthly payments, check the order blank chart. These relaxed credit terms, coupled with our money-back guarantee that you can build any Heathkit, mean you can buy Heathkit with complete confidence and assurance of satisfaction.

Heathkit® Test Instruments



- ✦ Large, easy-to-read dial scales
- ✦ Wide frequency range—100 kc to 220 mc
- ✦ Prewired/prealigned coil/bandswitch for easy assembly

RF-1
\$2795

Extended-range RF SIGNAL GENERATOR KIT

A basic instrument on any test bench, the Heathkit RF-1 with its expertly-engineered circuit offers you an accurate, wide range RF signal source at low cost. Signals are available from 100 kc to 110 mc on fundamentals in six bands, and up to 220 mc on calibrated harmonics. Three large easy-to-read dial scales allow precise frequency settings. Sine wave output is achieved with outstanding accuracy (2%) on all bands. Provides modulated (400 cps) or unmodulated output up to 100,000 microvolts, controlled by both step and continuously variable controls. Complete instructions for easy assembly and alignment tips for AM and FM tuners and receivers are included. 6 lbs.

Kit RF-1...\$2.80 dn., \$5 mo.....\$27.95

SPECIFICATIONS—Frequency range: Band A, 100 kc to 320 kc; Band B, 310 kc to 1.1 mc; Band C, 1 mc to 3.2 mc; Band D, 3.1 mc to 11 mc; Band E, 10 mc to 32 mc; Band F, 32 mc to 110 mc. **Calibrated harmonics:** 110 mc to 220 mc. **Accuracy:** 2%. **Output:** Impedance, 50 ohms; Voltage, 100,000 uv. **Modulation:** Internal, 400 cps, 30% depth; External, approx. 3 V across 50 k ohms for 30%. **Audio output:** Approx. 10 V open circuit. **Tube complement:** (1) 12AT7, (1) 6AN8. **Power requirements:** 105-125 V 50/60 cycles AC, 15 watts. **Dimensions:** 6½" W. x 9½" H. x 5" D.



- ✦ Variable 10.7 mc sweep, 200 kc to over 1 mc
- ✦ Switch-selected, 90, 100 & 107 mc rf signals
- ✦ Built-in 10 mc crystal controlled oscillator

FMO-1 \$3495

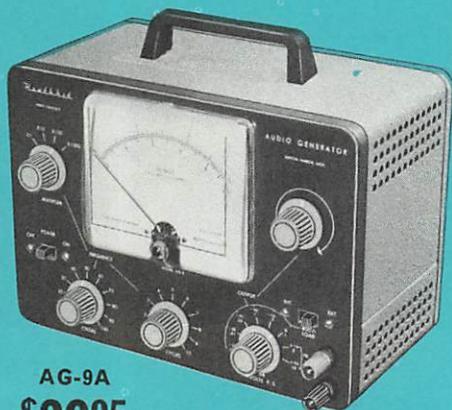
Neat, compact and uniquely designed FM ALIGNMENT GENERATOR

Complete FM alignment generator facilities for FM tuners and receivers are yours in this specially designed instrument. Provides 10.7 mc sweep (variable from 200 kc to over 1 mc) with crystal controlled center marker and 100 kc sub-marker oscillator for IF alignment. RF "front-end" signals of 90, 100 and 107 mc are conveniently switch-selected for fast, easy servicing. Complete instructions for easy assembly and operation included. 4 lbs.

Kit FMO-1...\$3.50 dn., \$5 mo.....\$34.95

SPECIFICATIONS—Output frequencies... for RF alignment: 90, 100 and 107 mc, switch-selected. **Modulation:** 400 cycle incidental FM. **For IF and detector alignment:** 10.7 mc sweep. **Sweep width:** 200 kc to over 1 mc. **Markers:** 10.7 mc (crystal); 100 kc sub-markers. **Modulation:** 400 cycle AM. **For other applications:** 10.0 mc (crystal) and harmonics; 100 kc and 400 cycle audio. **Tube complement:** (2) 6U8. **Power supply:** Transformer, selenium rectifier. **Power requirements:** 105-125 V, 50/60 cycle, 12 watts. **Cabinet size:** 7½" H. x 4¼" W. x 4¾" D.

- ✦ Metered output voltage
- ✦ Switch-selected output frequencies
- ✦ 600 ohm or hi Z output impedance
- ✦ Less than 1/10 of 1% distortion



AG-9A
\$3995

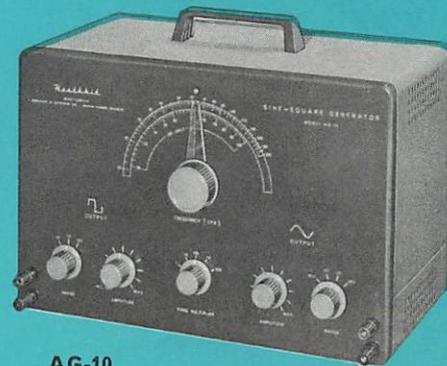
Accurate and versatile... AUDIO GENERATOR KIT

With the Heathkit AG-9A as a signal source you can forget about unknown input frequency variations and distortion when working with audio circuits. Frequencies are switch-selected... no human tuning error to consider. Three rotary switches select two significant figures and a multiplier to determine frequency. Accuracy is well within ±5% and distortion is actually less than .1 of 1% between 20 and 20,000 cps. Output is indicated on a large 4½" panel meter calibrated in volts and decibels. Audio frequency can be varied in steps of 1 cps from 10 to 100 cps and a 4-position multiplier increases this range in multiples of 10 for an overall range of 10 to 100,000 cps. Output attenuator operates in steps of 10 db and is calibrated in 8 full-scale meter ranges. An outstanding example of Heath engineering, the AG-9A is simple, yet versatile... compact, yet easy to build with complete instructions provided for assembly and operation. 7 lbs.

Kit AG-9A...\$4 dn., \$5 mo.....\$39.95

SPECIFICATIONS—Frequency: 10 cps to 100 kc, switch selected, 2 significant figures and multiplier. **Output:** 6 ranges 0 to .003, .01, .03, .1, .3, 1 volts RMS into external 600 ohm load or with internal load into Hi-Z, 2 ranges 0 to 3, 10 volts RMS into a minimum of 10,000 ohms, -60 db to +22 db in 8 steps -60 db to +2 dbm (0 dbm=1 mw to 600 ohms). **Distortion:** less than .1%, 20 to 20,000 cps. **Tubes:** (1) 6AU6, (1) 6CL6, (1) 6X4. **Power:** 105-125 volts AC, 50/60 cycles, 40 watts. **Dimensions:** 9½" W. x 6½" H. x 5" D.

- ✦ Sine and square wave output available simultaneously
- ✦ Covers 20 cps to 1 mc in 5 bands
- ✦ Less than .25% sine wave distortion
- ✦ .15 microsecond square wave rise time



AG-10
\$4995

SINE and SQUARE WAVE GENERATOR... all in one!

The wide frequency range and high quality sine and square waves produced by the AG-10 make it ideal for use in audio, TV, high fidelity and general laboratory applications. Both sine and square wave outputs may be used simultaneously without affecting either waveform; separate output terminals and attenuators are provided for each. Other features include a 5-position bandswitch, continuously variable tuning, shielded oscillator circuit, and cathode follower output. A special control is used in the oscillator circuit to compensate for differences in tube characteristics for minimum distortion, and exact frequency-calibrating system assures proper tracking across the dial. 12 lbs.

Kit AG-10...\$5 dn., \$5 mo.....\$49.95

SPECIFICATIONS—Sine wave: Frequency range: 20 cycles to 1 mc. **Output volts (RMS):** 0 to 10 volts, 0 to 1 volt, 0 to .1 volt, or 0 to .01 volt when working into a high impedance load. **Source impedance:** (±10%): 10 volt range, 0 to 3.5 k ohm; 1 V, .1V, and .01V range, 600 ohm. **Distortion:** less than .25%, 20 to 20,000 cycles. **Frequency response:** ±.15 db 20 cycles to 1 megacycle. **Square wave:** Frequency range: 20 cycles to 1 mc. **Output volts:** (P. to P.) ±5%: 0 to 10 volt, 0 to 1 volt, 0 to .1 volt, into a high impedance load. **Source impedance:** (±10%): 10 volt range, 0 to 220 ohm 1 V, and .1 V ranges, 52 ohm. **Rise time:** less than .15 microsecond. **General:** Frequency accuracy: ±5%. **Power requirements:** 105-125 V.A.C., 50/60 cycles 55 watts. **Dimensions:** 13" W. x 8½" H. x 7" D.

Heathkit® Oscilloscopes for every Testing Requirement

"Space Saver" 3" DC OSCILLOSCOPE . . . an outstanding performer in a small package

- ✦ Identical vertical and horizontal DC or AC coupled amplifiers
- ✦ DC to 200 kc bandwidth
- ✦ Less than 5° phase shift between channels
- ✦ External capacity provision for lower sweep rates
- ✦ Small, compact size—measures only 7⁵/₈" H x 4⁵/₈" W x 11" D

This attractive and versatile 3" DC scope requires just a fraction of the space needed for scopes of comparable function and fulfills a multitude of applications in industrial, medical and general service fields. Relative phase shift between channels is *less than 5°* making it ideal as a readout indicator for computers or for voltage, frequency and phase shift measurements. It features *identical* vertical and horizontal amplifiers with a bandwidth of DC to 200 kc (2 db point) and may be either AC or DC coupled. The recurrent sweep generator covers 5 cps to 50 kc in four overlapping ranges and lower sweep rates may be obtained by connecting a capacitor across the external binding posts provided. Selection of internal or external sync is available at the turn of a switch. Trace distortion due to magnetic fields is minimized through the use of a CR tube shield. An astigmatism control is provided to assure a sharp trace. All critical voltages are regulated and the power supply is transformer operated for safety and high efficiency. Kit is complete with 3RP1 CR tube. 14 lbs.

Kit IO-10 . . . \$8 dn., \$8 mo. **\$79.95**

SPECIFICATIONS—(Vertical and horizontal channels identical): Bandwidth: DC to 200 kc (2db point). **Sensitivity:** 0.1 V (peak-to-peak) per 1" (uncalibrated). **Attenuator:** 3-position, compensated type. **Gain control:** Continuously variable. **Input impedance:** 3.6 megohms shunted by 35 mmf. **Coupling:** Either AC or DC, switch-selected. **Relative phase shift between channels:** Less than 5°. **Sweep generator (recurrent type):** Linear saw-tooth produced by multivibrator type generator covering 5 cps to 50 kc in four overlapping ranges. "External capacity" binding post for lower sweep rates. **Sync provision:** Either internal or external, switch-selected. **Power requirements:** 105-125 V 50-60 cycle AC at 100 watts max. **Dimensions:** 7⁵/₈" H x 4⁵/₈" W x 11" D.



IO-10
\$79.95

"Extra Duty" 5" Wide Band OSCILLOSCOPE . . . fulfills practically every lab or service requirement . . . now only \$69.95

- ✦ Full 5 mc bandwidth for color TV servicing
- ✦ Heath patented sweep circuit—10 cps to 500 kc sweep
- ✦ Switch-selection of 2 "pre-set" sweep frequencies
- ✦ 2 circuit boards and wiring harness for easy assembly

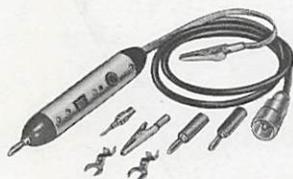
Critical waveform observations are handled easily by the IO-30 with clear, sharp pattern displays in every application. Excellent linearity and lock-in characteristics allow viewing stable presentations even at upper frequency limits. The unique Heath patented sweep circuit employed in this scope functions from 10 cps to over 500 kc giving you *five times* the sweep range found in many other scopes. This feature coupled with wide band amplifiers, essential in color TV work, make it ideal for specialized as well as general circuit investigation. Two extra *preset* sweep positions (30 cps and 7875 cps) are provided for those who use the same frequencies repeatedly. Other features include push-pull output, positive trace position controls, peak-to-peak calibration reference, 3-step frequency compensated vertical input, automatic sync. circuit, Z-axis input, 5UPI CR tube, husky power supply and fresh new styling concept. A superbly-engineered instrument designed for years of fine performance. 23 lbs.

Kit IO-30 . . . \$7 dn., \$7 mo. **\$69.95**

SPECIFICATIONS—(Vertical) sensitivity: 0.025 volt RMS per inch at 1 kc. **Frequency response (referred to 1 kc level):** ± 1 db 8 cps to 2.5 mc; + 1.5 to -5 db, 3 cps to 5 mc; response at 3.58 mc, -2.2 db. **Rise time:** 0.08 microseconds or less. **Input impedance:** (AT 1 KC) 2.7 megohms at X1; 3.3 megohms at X10 and X100. **(Horizontal channel) sensitivity:** 0.3 volts RMS per inch at 1 kc. **Frequency response:** ± 1 db 1 cps to 200 kc; ± 3 db 1 cps to 400 kc. **Input impedance:** 4.9 megohms at 1 kc. **Sweep generator:** Range—10 cps to 500 kc in five steps, variable, plus any 2 switch-selected preset sweep frequencies in this range. **Synchronizing:** automatic lock-in circuit using self-limiting synchronizing cathode follower. **Power requirements:** 105-125 volts 50/60 cycles AC at 80 watts; fused. **Dimensions:** 14¹/₂" H x 8³/₈" W, x 16" D.



IO-30
\$69.95



LOW CAPACITY SCOPE PROBE KIT

Minimizes loss of gain, circuit loading or distortion by providing correct impedance match to scope. Switch on probe allows direct or (X 10) attenuated operation. 1 lb.
Kit PK-1 **\$4.95**



ELECTRONIC SWITCH KIT

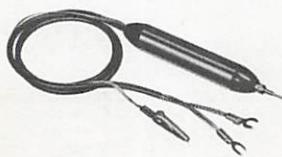
Permits oscilloscope observation of two separate signals simultaneously by providing a dual trace on any scope screen. Has separate gain controls for both channels with sync output to lock scope sweep to signal frequency. A position control separates or superimposes the two waveforms. Frequency response is ± 1 db from 0 to 100 kc. 6 lbs.
Kit S-3 **\$21.95**

SCOPE DEMODULATOR PROBE KIT

Lets you observe AM modulation waveform of RF or IF signals. Functions as an AM detector to pass only modulation of signal. Voltage limits are 30 V RMS and 500 V DC. 1 lb.

Kit 337-C **\$3.50**

38



VOLTAGE CALIBRATOR KIT

Allows scope to function as a precision peak-to-peak voltmeter by comparing unknown signal levels with known amplitude of 1 kc square wave signal produced by the VC-3. Fixed outputs of 0.03, .1, .3, 1, 3, 10, 30 and 100 volts peak-to-peak are switch selected. 3 lbs.

Kit VC-3 **\$12.50**





"General Research" 5" DC OSCILLOSCOPE

- ✦ **Identical DC coupled vertical and horizontal amplifiers**
- ✦ **5ADP2 flat face CR tube—edge lighted graticule**

An excellent scope for all types of DC applications. The quality components and materials throughout the design of this scope bring you fine performance with long, reliable service. *Identical* DC or AC coupled vertical and horizontal amplifiers with *less than 5°* relative phase shift between channels make it an ideal readout indicator for computers and for phase shift measurements. The transformer operated power supply features long-life silicon diode rectifiers in full wave voltage doubler circuits for B+ and bias supplies. All critical voltages are regulated with VR tubes for stable, reliable performance. A precut, cabled wiring harness is provided for easy assembly. 21 lbs.

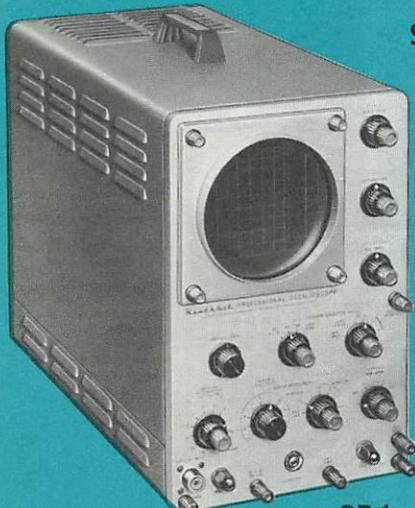
Kit OR-1...\$12 dn., \$11 mo..... **\$119.95**

SPECIFICATIONS—(Vertical and horizontal channels identical) bandwidth: DC to 200 kc (1 db point). **Sensitivity:** 0.1V (peak to peak) per cm (uncalibrated). **Attenuator:** 3-position, compensated type. **Gain control:** continuously variable. **Input impedance:** 3.6 megohms shunted by 28 mmf. **Coupling:** either AC or DC, switch-selected. **Relative phase shift between channels:** less than 5 degrees. **Sweep generator (recurrent type):** linear saw-tooth produced by multivibrator type generator. **Frequency coverage:** 5 cps to 50 kc in four overlapping ranges. "External capacity" binding post for lower rates. **Sync source:** either internal or external, switch selected. **Power requirements:** 105-125 V 50/60 cycle AC at 100 watts max. **Dimensions:** 11" H. x 6 1/2" W. x 20" D.



OR-1
\$119.95

Sophisticated 5" DC SCOPE for light duty applications



OP-1
\$184.95

- ✦ **Calibrated driven sweep—built-in triggering circuits**
- ✦ **Calibrated DC coupled vertical amplifier**
- ✦ **5ADP2 flat face CR tube—edge lighted graticule**

The professional quality and features of this DC oscilloscope make it ideal for any light duty application where DC coupled vertical and horizontal amplifiers, driven sweep, calibrated sweep, and calibrated vertical amplifier are essential. The triggered sweep circuit operates on either internal or external signals and sweep frequencies are provided by switch-selected base rates of 2 and .2 milliseconds-per-cm and 20, 2 and 1 microseconds-per-cm in conjunction with a continuously variable 10 to 1 multiplier. Calibration is within 10% at all control settings. The 12-position vertical attenuator is calibrated in volts-per-cm. Horizontal sweep is calibrated in time-per-cm. A 150 volt DC test voltage is provided for vertical channel calibration. All critical voltages are regulated with VR tubes for high stability. 5 prewired terminal boards and a precut cabled wiring harness simplify assembly. 34 lbs.

Kit OP-1...\$18.50 dn., \$16 mo..... **\$184.95**

SPECIFICATIONS—Vertical channel frequency response: within 1 db DC to 2.2 megacycles; within 3 db-DC to 3.6 megacycles; within 6 db DC to 4.5 megacycles. **Rise time:** less than .1 microsecond. **Input impedance:** 3.6 megohm shunted by 28 mmf. **Sensitivity:** DC coupled; 0.1 V peak-to-peak for 1 cm deflection; AC coupled; .01 V peak-to-peak for 1 cm deflection (using built-in preamp.). **Coupling:** AC or DC, switch selected. **Horizontal channel frequency response:** within 1 db from DC to 450 kc; within 3 db from DC to 600 kc. **Input impedance:** 1 megohm shunted by 37 mmf. **Sensitivity:** 0.2 V peak-to-peak for 1 cm deflection. **Power requirements:** 105-125 VAC, 50/60 cycles, 250 watts max. **Dimensions:** 8 1/2" W x 14 1/2" H x 19" D.

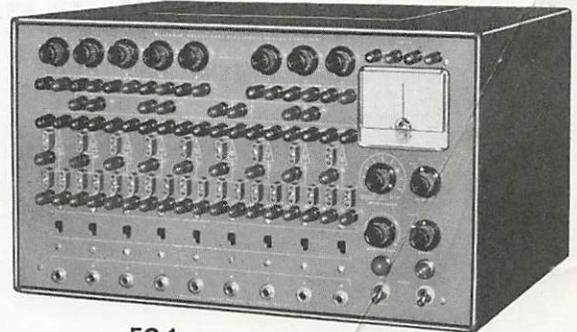
EDUCATIONAL ELECTRONIC ANALOG COMPUTER ...

unmatched in quality and value at only \$199.95

- ✦ **5 coefficient potentiometers**
- ✦ **3 initial condition supplies**
- ✦ **9 DC operational amplifiers**
- ✦ **Ideal for schools, colleges, industry**
- ✦ **Built-in repetitive oscillator**

The Heathkit model EC-1, lowest cost computer of its quality on the market, puts advanced engineering techniques within the reach of everyone! Used widely in industry, the EC-1 is capable of solving a multitude of complex mechanical and mathematical problems with swift electronic accuracy. Many concerns are using the EC-1 to train computer operators and engineers in setting up problems. Schools and colleges find the EC-1 ideal for teaching engineering, physics, and math classes the basic principles of analog computer application and design. Featured are: 9 DC operational amplifiers with provision for balancing without removing problem setup; 3 initial condition power supplies; repetitive oscillator and 5 coefficient potentiometers with terminals on the panel. Comprehensive operational manual gives basic computer theory and operating procedures. Housed in rugged steel case with convenient access hatch. Measures 19 3/4" W x 11 1/2" H x 15" D. 43 lbs.

Kit EC-1...\$20 dn., \$17 mo..... **\$199.95**



EC-1
\$199.95

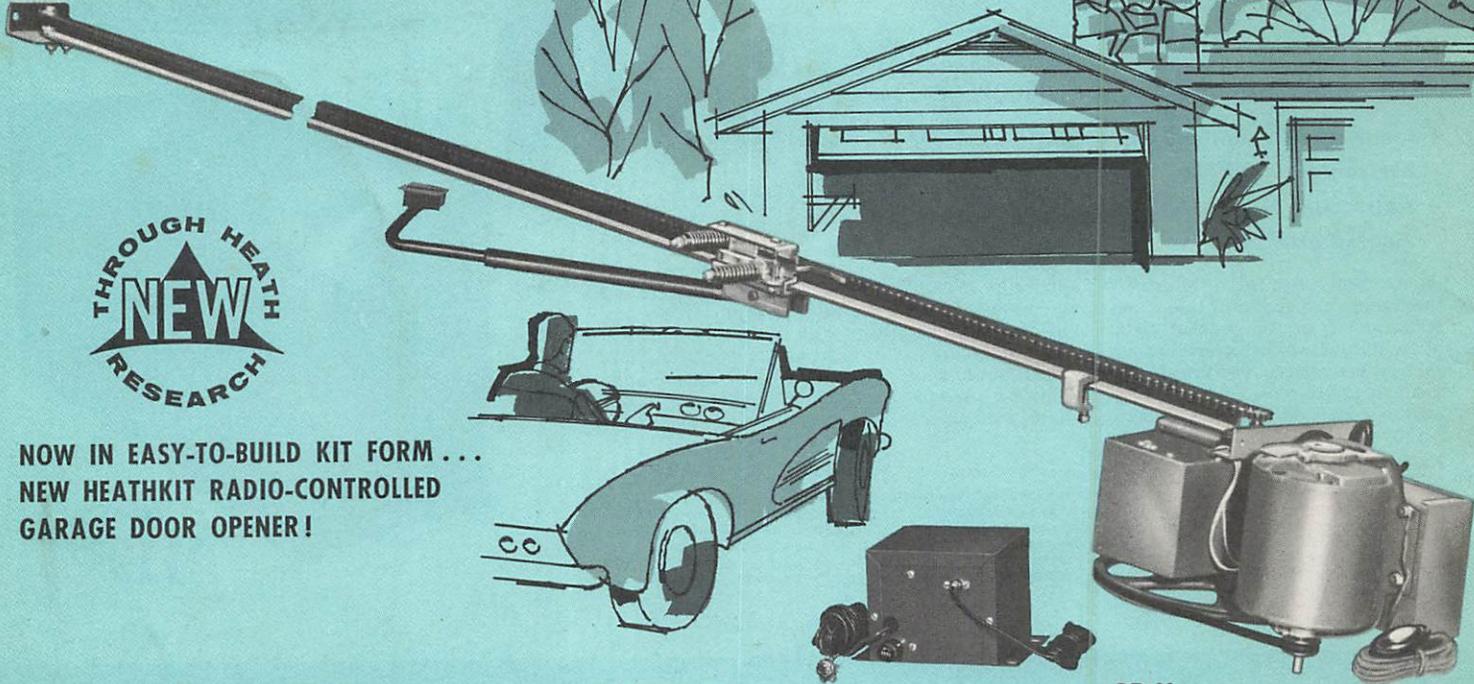
SPECIFICATIONS—Amplifiers: Open loop gain approximately 1000. Output —60 + 60 volts at 7 ma. **Power supplies:** ±300 volts at 25 ma electronically regulated; variable from +250 to +350 by control with meter reference for setting +300 volts. Negative 150 volts at 40 ma regulated by VR tube. **Repetitive operation:** Multivibrator cycles a relay at adjustable rates (.1 to 15 cps), to repeat the solution any number of times; permits observation of effect on solution of changing parameters. **Meter:** 50-0-50 ua movement. **Power requirements:** 105-125 volts, 50/60 cycles, 100 watts.



**NOW IN EASY-TO-BUILD KIT FORM . . .
NEW HEATHKIT RADIO-CONTROLLED
GARAGE DOOR OPENER!**

The new Heathkit Garage Door Opener is the last word in driving ease. Its many convenience features let you open, close and light the garage automatically with just the touch of a button! With this handy household servant at your command, you no longer need to expose yourself to the elements in bad weather . . . no need to get out of the car and manually lift the garage door . . . no need to hunt for the garage light switch at night. In addition to convenience, the Heathkit Garage Door Opener offers safety and protection as well . . . the automatic light feature can be extended to turn on outdoor lights (patio, breezeway, etc.) at the same time. This easy-to-assemble kit comes complete with instructions for assembly and installation in garage. High-quality parts are used throughout for years of dependable, trouble-free performance. Receiver mounts on mechanism in garage and transmitter is easily installed in auto. Transmitter is crystal-controlled for high accuracy and special receiver design prevents operation from all but strongest of signals. See page 12 for full specifications.

Kit GD-20: Mechanism, Transmitter & Receiver . . . 65 lbs. . . . **\$109.95**
no money down, \$11 mo.
Kit GDA-20-1, extra transmitter . . . 4 lbs. . . . no down payment, \$5 mo. . . . **\$24.95**



**GD-20
\$109⁹⁵**

- ◆ **Kit includes transmitter, receiver and mechanism**
- ◆ **Operates all overhead track-type doors up to 8' high**
- ◆ **Special safety release disengages door from mechanism upon meeting any obstruction**
- ◆ **Door can be stopped in any position for ventilation, etc.**
- ◆ **Push button provided for indoor operation**

NO DOWN PAYMENTS REQUIRED!
Now you can buy any Heathkit of \$25 or more with no down payment! Disregard down payment requirements shown in order blank chart—to figure your monthly payments, check the order blank chart. These relaxed credit terms, coupled with our money-back guarantee that you can build any Heathkit, mean you can buy Heathkit with complete confidence and assurance of satisfaction.

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All prices and specifications subject to change without notice.
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