

SAVE THIS COVER—VALUABLE CERTIFICATE ON BACK

SPECIAL CHRISTMAS OFFER
FOR NEW HEATHKIT CUSTOMERS

FREE

**\$5 CHRISTMAS
BONUS
CERTIFICATE**

**SAVE \$5 ON ANY HEATHKIT
ORDER OF \$50 OR MORE**

Order Now & Receive All Future Heathkit Literature FREE

SEE BACK COVER



SAVE THIS COVER—VALUABLE CERTIFICATE ON BACK

BONUS CERTIFICATE BELOW

ON ANY HEATHKIT
OF \$50 OR MORE

VALID UNTIL DEC. 31, 1963

WITH YOUR ORDER

NO. 883A

OFFERS EXPIRES
December 31, 1963

This certificate worth \$5.00 when applied to order for \$50.00 or more in Heathkit equipment listed in our current catalog and supplement. Certificate redeemable only for direct mail purchases or at factory sale room in St. Joseph, Michigan. This certificate is not retroactive to previous orders and is not redeemable in cash.

FIVE DOLLARS



Postmaster: Do not return
if undeliverable.

THIRD CLASS

DAYSTROM, INCORPORATED
a subsidiary of

HEATH COMPANY
Benton Harbor, Michigan



GD-232R
\$349⁹⁵
 (less bench)

The New 1964 Heathkit—Thomas 2-Keyboard Transistor Organ has Added Features at No Extra Cost . . . Can be Built and Played by Beginners . . . And Offers Big Savings!

- * Ten true organ voices
- * New! Variable Repeat Percussion; produces banjo, marimba, mandolin, balalaika effects
- * 13-note heel & toe bass pedals
- * Expression pedal
- * Keyboard balance control
- * Two correctly positioned over-hanging 37-note keyboards
- * 20-watt peak power amplifier & speaker
- * Transistorized plug-in generators
- * Hand-crafted walnut cabinet

A whole new wonderful world of live music awaits your family with this feature-packed, professional-performing Heathkit version of the famous Thomas organ! Everyone will experience a new kind of fun, relaxation, and sense of achievement while gaining a valuable knowledge and appreciation of music. And now with an exciting new 1964 playing feature called "Variable Repeat Percussion", you can create the rhythmical strumming of a banjo, mandolin, or balalaika; the staccato of a marimba . . . another Heathkit extra for 1964 at no extra cost!

You'll save 50% or more over comparable units by building it yourself . . . takes around 50 to 60 hours with Heathkit's famous simple-to-follow instructions, and no experience is needed! A pre-aligned tone generator is included so you can easily tune the organ yourself . . . no special skills or musical "ear" required!

Designed for the beginner as well as the advanced player, this superb musical instrument has 10 faithful organ voices, 13-note heel & toe bass pedals, an adjustable expression pedal which varies the volume from soft to full, transistorized plug-in tone generators which assure clear undistorted tone and virtually eliminate service

and tuning problems, a 20-Watt peak power amplifier, plus a free copy of the Thomas "Musical Fun" book that shows you how to play and read music. The factory-assembled, hand-crafted, hand-rubbed walnut cabinet is ready for installation of the sub-assemblies as you complete them. Compact in size too, (34½" H x 39¾" W x 21½" D) . . . fits just about anywhere in your home!

Plan on giving your family a new dimension of exciting live entertainment this Christmas with the Heathkit electronic organ! Truly a gift that never stops giving!

Kit GD-232R, Organ, 160 lbs., no money dn., \$23 mo. \$349.95

GDA-232-1, matching walnut bench, 19 lbs., no money dn., \$5 mo. \$24.95

Export model available for 115-230 VAC, 50-60 cps; write for details.

ATTENTION HEATHKIT ORGAN OWNERS! Add Variable Repeat Percussion to your Heathkit organ with the easy-to-install kit **GDA-232-4, 5 lbs. . . Only \$9.95**



5-YEAR WARRANTY

The transistorized plug-in tone generator boards, the heart of the organ, are warranted for five years. You buy with confidence when you buy a Heathkit version of the Thomas Organ. Replacement upon prepaid return of undamaged board to the Heath Company.

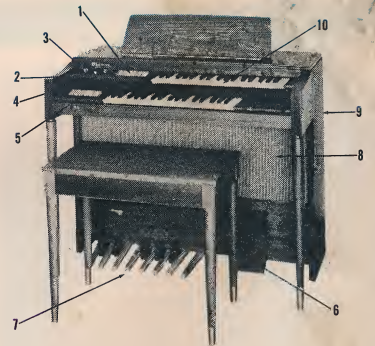
*A New,
 Exciting Gift
 For The Whole Family*

by



What a delightful surprise on Christmas morning! And there are endless hours of fun, relaxation, education, and achievement satisfaction in store for everyone from Mom to Junior! Building and playing this beautiful organ is a truly rewarding project that provides a healthy common interest for your family. Compare Heathkit's organ features with others, and see why you'll save with a Heathkit!

New! Variable Repeat Percussion at No Extra Cost!



1. 10 True organ voices; trombone, reed, flute, oboe, cornet, violin, saxophone, horn, viola, diapason 2. New! Variable Repeat Percussion; produces banjo, marimba, mandolin, and balalaika effects 3. Variable Bass Pedal Volume Control 4. Manual Balance Control; adjusts volume of keyboards in any degree for solo work 5. Variable Vibrato 6. Standard Expression Pedal; adjusts volume from soft to full 7. 13-Note Heel & Toe Bass Pedals 8. Over-hanging Keyboards; each with 37 notes, range C thru C 9. Beautiful Walnut Cabinet; modern styling, hand-rubbed, hand-crafted 10. 20-Watt Amplifier and Speaker • Transistorized; for longer life, better tone, trouble-free operation

Complete Self-Teacher Recorded Lessons . . . Only \$19.95

Can't play a note? You'll learn quickly and easily at your own leisure with this complete 48 lesson course on four 12" LP records. Includes music book with many old-time favorites. Provides firm basis of musical knowledge. Manufacturer's list price . . . \$50, you save \$30.05!

GDA-232-2, recorded lessons, 5 lbs. \$19.95

Hear It For Yourself!

Like to hear it perform? You can with this 7"—33⅓ rpm record. Simply send 50c to cover postage and handling, and ask for record No. GDA-232-5. Once you hear its beautiful voices, rich mellow tone, and remarkable range of expression, you'll be convinced that the Heathkit Organ is for you!

Christmas Gifts Any Service

Heathkit General Purpose 3" OSCILLOSCOPE

- * Push-pull vertical & horizontal amplifiers
- * Wide range sweep—20 to 100,000 cps
- * Automatic sync—retrace blanking
- * Easy to assemble

The IO-21 is compact, lightweight, and surprisingly versatile in performance . . . fills hundreds of daily requirements. The exceptionally clean, open circuit layout makes assembly easy, trouble-free. Circuit design features identical vertical and horizontal amplifiers with a frequency response of ± 2 db from 2 cps to 200 kc. Sensitivity is .25 volts RMS/inch peak-to-peak deflection at 1 kc. Provision is made for direct connection to the vertical deflection plates of the cathode ray tube . . . ideal for high level R.F. monitoring. The Heath twin-triode sweep generator employed functions reliably from 20 to 100,000 cps in four switch-selected ranges. Automatic sync and retrace blanking. Provision for line sweep and internal or external sweep. Other features include a 3RP1 CR tube with special alloy neck shield to minimize trace distortion; focus and astigmatism controls and a husky power transformer. Power supply is fused for protection. An unbeatable scope value!

Kit IO-21, 11 lbs. . . . no money dn., \$5 mo. . . . \$49.95
See pg. 19 for comb. offer with EF-2 Applications Kit.

SPECIFICATIONS—(Vertical and horizontal amplifiers identical): Frequency response: ± 2 db, 2 cps to 200 kc. Sensitivity: 25 volts RMS/inch P-P deflection at 1 kc. Input impedance: 10 megohms shunted by 20 uuf. Sweep generator: Range: 200-100,000 cps. Automatic sync, retrace blanking. Power requirements: 105-125 volts AC, 50-60 cycle, 40 watts. Dimensions: 9 $\frac{1}{2}$ " H x 6 $\frac{1}{2}$ " W x 10" D.



IO-21
\$49⁹⁵



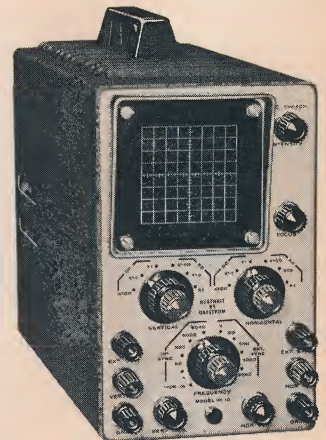
"Space-Saver" 3" DC OSCILLOSCOPE

- * Identical DC or AC coupled vertical & horizontal amplifiers
- * DC to 200 kc bandwidth
- * External capacity binding posts for lower sweep rates

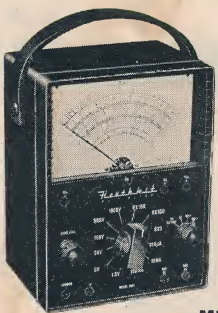
An ideal scope for use where extremely low sweep rates are desired! Small, compact and easy to carry, the IO-10 features identical vertical and horizontal amplifiers that may be either AC or DC coupled. The recurrent sweep generator covers 5 cps to 50 kc in four overlapping ranges and lower sweep rates may be obtained by connecting additional capacity across the external binding posts provided. Other features include: switch-selection of internal or external sync; 3RP1 CR tube; special alloy CR tube shield to minimize trace distortion; astigmatism control for sharp trace and regulated power supply.

Kit IO-10, 16 lbs. . . . no money dn., \$8 mo. . . . \$79.95

SPECIFICATIONS—(Vertical and horizontal channels identical): Bandwidth: DC to 200 kc (2 db point). Sensitivity: 0.1 V (peak-to-peak) per $\frac{1}{2}$ " (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-toothed 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: 7 $\frac{1}{2}$ " H x 4 $\frac{1}{2}$ " W x 11" D.



IO-10
\$79⁹⁵



MM-1
\$29⁹⁵

HEATHKIT 20,000 OHMS/VOLT VOM

- * Sensitive 50 microampere meter
- * 1% precision resistors for high accuracy
- * Battery powered for complete portability
- * Provides 35 meter ranges on 2-color scale

Beautifully styled in its sleek modern case, the MM-1 provides wide voltage, current, resistance and db ranges to cover hundreds of service applications.

Use it anywhere . . . battery powered for complete portability! Sensitivity is 20,000 ohms-per-volt DC, 5,000 ohms-per-volt AC. Maximum accuracy is assured by precision 1% resistors and sensitive 50 microampere meter movement. A single volt on the lowest range provides a deflection of 2 $\frac{1}{2}$ " for accurate low-level measurements. A polarity switch eliminates transferring test leads when alternately measuring positive and negative voltages. All test jacks are recessed to eliminate shock hazard. Complete with test leads (less batteries).

Kit MM-1, 5 lbs. . . . no money dn., \$5 mo. . . . \$29.95

SPECIFICATIONS—Sensitivity: 20,000 ohms/volt DC, 5,000 ohms/volt AC. Range AC & DC volts: Full scale, 1.5, 5, 50, 150, 500, 5000. Direct current: 150 microamperes, 15, 150, 500 milliamperes, 15 amperes. Ohmmeter: 0.2 ohms to 20 megohms in three ranges. Decibels: -10 to +65 db. Resistors: 1% precision type. Controls: Range switch, Output—AC-DC Reverse DC switch. Ohms adjust control. Batteries: 1 type "C" cell, 4 penlight cells. Dimensions: 7 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 4".

World famous for its high accuracy and value! . . . Heathkit IM-11 VTVM

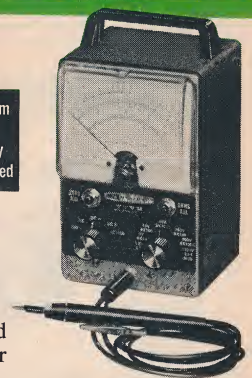
- * Single AC/Ohms/DC probe with switch
- * 7 AC, 7 DC, 7 Ohms ranges
- * 4 $\frac{1}{2}$ " 200 ua meter
- * 1% precision resistors

This famous Heathkit VTVM has contributed more to the field of electronics than any other basic service instrument. Its quality and performance at low cost has made it a favorite for years and now with big volume savings passed on to you . . . represents a value unmatched in the industry! New styling, new features bring a new high in convenience! Measures AC volts (RMS), AC volts (peak-to-peak), DC volts, resistance and DB. A component circuit board assures stable, uniform circuitry and easy assembly. Test leads included. Less battery.

Kit IM-11, 5 lbs. . . . no money dn., \$5 mo. . . . \$24.95
Assembled IMW-11 . . . no money down, \$5 mo. . . . \$46.75
See p. 19 for comb. offer with EF-1 Applications kit.

SPECIFICATIONS—Meter scales: DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 1500 volts full scale. AC peak-to-peak: 0.4, 1.4, 4.0, 14.0, 40.0, 140.0, 400.0. Resistance: 10 ohm center scale x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures .1 ohm to 1000 megohms with internal battery. Meter: 4 $\frac{1}{2}$ " 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 $\pm 3\%$, AC $\pm 5\%$ of full scale. Frequency response: ± 1 db, 25 cps to 1 mc (600 ohm source). Tubes: 12AU7, 6AL5. Battery requirement: 1.5 volt, size "C" flashlight cell. Power requirements: 105-125 volt 50/60 cycle AC 10 watts. Dimensions: 7 $\frac{1}{2}$ " H x 4-11/16" W x 4 $\frac{1}{2}$ " D.

Kit Form
or
Factory
Assembled



IM-11
\$24⁹⁵

Big Savings on

Join the thousands around the world who enjoy Shortwave Radio Listening with this bargain-buy kit

- * 4 tubes plus rectifier
- * Covers 550 kc to 30 mc in four bands
- * Built-in speaker & "S" meter
- * Safe transformer operation

You are there when it happens when you listen with the Heathkit GR-91 Shortwave Radio! International overseas broadcasts of world events . . . amateur radio broadcasts from 160 to 10 meters . . . standard AM broadcasts of music, news, and sports . . . you take your pick when you tune the four bands of the GR-91, ranging the world of radio listening from 550 kc to 30 mc.

This sensitive receiver has these outstanding features at low cost! . . . lighted 7" slide-rule dial with four scales plus "logging" scale . . . lighted "S" meter for relative signal strength indication . . . electrical bandspread for station separation . . . BFO for code listening and SSB transmissions . . . built-in speaker . . . headphone jack . . . noise limiter . . . "velvet touch" 16 revolution tuning knob . . . antenna inputs for 300 ohm balanced or 75 ohm unbalanced antennas . . . 4-tube superhet circuit with transformer operated silicon rectifier power supply . . . all steel beige and aqua cabinet . . . easy circuit board assembly. Approximate alignment possible without RF signal generator. Makes an ideal gift for all ages!

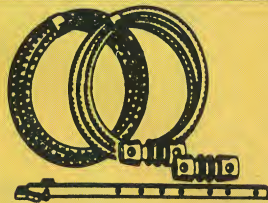
Kit GR-91, 14 lbs., no money dn., \$5 mo. **\$39.95**

SPECIFICATIONS—Frequency coverage: 550 kc to 30 mc in four bands. Short wave, broadcast bands clearly marked on dial. **Controls:** General coverage tuning, Bandspread tuning, Antenna trimmer, Bandswitch, Noise Limiter—ON/OFF, Phone-Standby-CW switch, BFO control, Audio Gain, AC-ON/OFF, Headphone jack, Q-multiplier input jack. **Power requirements:** 105-125 V 50/60 cycles AC, 30 watts. **Dimensions:** 12 1/4" W x 5 1/2" H x 8 1/4" D.



\$39.95

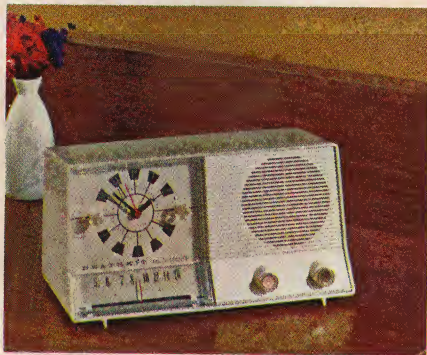
GR-91



FREE SWL ANTENNA

Everyone who purchases a GR-91, GR-81, or GC-1A by Jan. 15 receives this Shortwave Listener's antenna absolutely FREE! Consists of 75' long-wire antenna, 30' lead-in, porcelain insulators and grounding hardware. Also sold separately.

Kit GRA-72, 2 lbs. **\$1.45**



A gift for her . . . versatile AC CLOCK RADIO

Only **\$29.95**

\$5 mo.

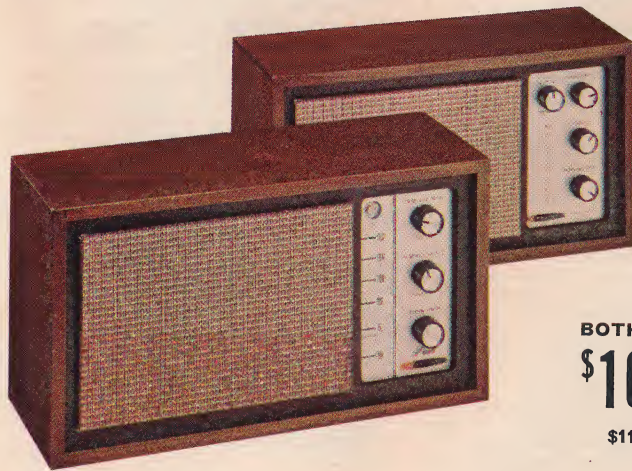
- * Transformer operated power supply
- * Timer outlet for household appliances
- * Sleep switch—radio alarm—output jack for pillow speaker

A faithful servant in every sense of the word. Wakes her to music, starts the coffee automatically, entertains her during the day and lulls her to sleep again at night. Safe, transformer operated 5-tube circuit has built-in antenna and quality clock/timer with sweep-second hand. "Sleep" switch adjustable up to one hour. Output jack for pillow speaker. Ivory and beige cabinet. Easy to build in time for Christmas. 8 lbs.

Kit GR-121 . . . no money down, \$5 mo. . . **\$29.95**

SPECIFICATIONS—Circuit: 5-tube superheterodyne. Frequency coverage: 535-1620 kc. IF frequency: 455 kc. Power supply: Transformer operated. Speaker: 3" PM. Controls: on/off volume, tuning, "Sleep Switch", "Radio Alarm". Dimensions: 5" H x 10" W x 5" D.

Low Cost FM STEREO TWINS—Just \$109.90!



BOTH ONLY

\$109.90

\$11 mo.

- * Beautiful walnut FM table radio & matching FM stereo converter
- * 88 to 108 mc coverage
- * Automatic frequency control
- * Preamsembled, pre-aligned tuning unit
- * Extended-range 6" x 9" speakers

A sensational value combination, designed to bring you thrilling FM Stereo at half the usual cost. The FM table radio also may be used separately—includes lighted dial, magic "eye" tuning, built-in antenna, and safe transformer operation. Both units have big 6" x 9" dual-cone speakers for true high fidelity reproduction. Simple controls permit selection of monophonic FM or Stereo FM plus control of volume and tone. Both walnut cabinets measure 15" L x 8" H x 6" D. Order this economical FM Stereo system today—it's an ideal gift.

Kit GR-21 FM table radio, 18 lbs., . . . no money dn., \$6 mo. . . . **\$59.95**
Kit GRA-21-1 stereo converter, 17 lbs., . . . no money dn., \$5 mo. . . . **\$49.95**

Gifts For The Scientist



* Completely assembled, tested, ready to operate * Compares with recorders costing five times this price * True potentiometric input on all ranges (10, 25, 50, 100 & 250 mv) * Plug-in 5-pin connectors for special ranges * Rapid chart advance, pen lift, paper tear-off guide

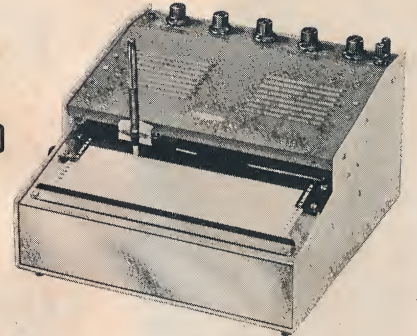
Chemists, physicists, medical researchers, engineers, etc., all have many uses for this precision lab-type self-balancing potentiometric recorder. It can be used to record pressure, speed, temperature, strain, Ph, light radiation, and many other phenomena when connected to suitable transducers, and is easily modified for multi-purpose applications as a servo system.

Three 5-pin connectors enable rapid modification for use in new research and development problems, and blank adapter chassis are available for the construction of special circuits for specific laboratory functions. Optional chart motors are also available at low cost for specific time scales required. Features include a special standby circuit to prolong limited life components such as the mercury reference cell and chopper, and a practical clip-on cartridge-type pen that makes it easy to obtain multi-color charts.

EUW-20A . . . 20 lbs. . . no money down, \$19 mo. \$195.00

Servo Chart Recorder

EUW-20A
\$195⁰⁰



SPECIFICATIONS—Chart grid width: 10". Chart speed: 2"/minute. Chart length: 120 ft. roll. Full scale balancing time: 1 sec. Chart span: 100 mv. nominal, adjustable from 100 to 200 mv; 10 mv nominal, adjustable from 10 to 20 mv. Error: Less than 1% of full scale for 100 mv; less than 2% of full scale for 10 mv. Max. source resistance: 50K ohm. Power requirements: 105-125 V AC, 60 cycle, 50 watts. Fuse: 1 ampere slow-blow. Dimensions: 13 3/4" W x 7 1/2" H x 13 3/4" D.



EUW-19A
\$135⁰⁰

Operational Amplifier System

* Completely self-contained with built-in power & bias supplies * Four operational amplifiers plus booster amplifier * Amplifier terminals (5-pin) accessible on front panel * Regulated DC+ & DC- power supplies * Fully assembled & tested

An outstanding value in an operational amplifier system . . . provides high gain, low drift, rapid response, and wide flexibility for countless laboratory applications. It can be connected as a constant current source, a controlled potential source, a linear sweep generator, or as a servo-system simulator. Addition, subtraction, integration, and differentiation problems can also be programmed for measurement, computation and control work.

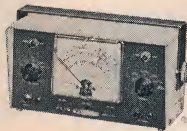
The system incorporates four high-gain operational amplifiers, a high-current booster amplifier, and regulated +300 volt and -300 volt power supplies. One of the operational amplifiers may be front panel switched to operate as an inverting amplifier, or as a follower amplifier. The booster amplifier is designed for power applications such as driving relays, transistors, etc. All amplifier connections terminate at 5-pin posts which permit rapid fastening of spring-clip connectors or standard 5-pin socket.

EUW-19A . . . 18 lbs. . . no money down, \$13 mo. \$135.00

SPECIFICATIONS—Operational amplifiers: DC gain, open loop: 21,000 (87 ± 1 db). Frequency response: to 450 kc. Voltage range: -50 V DC to +50 V DC at input and output with a 50 K ohm load. Output current: -1 ma to +1 ma with 50 K ohm load. Output impedance: Less than 1.5 ohms. Phase shift: Less than 1 degree at 100 kc. Rise time: 12 microseconds. Drift: Less than ± 8 mv/day under normal conditions after 48 hours, or more, aging period. Amplifier 1 only: May be switched for Follower or Inverter operation, also to provide + or - inputs. Booster amplifier: maximum output: ± 20 ma at ± 50 V DC. Gain: Approx. 0.8. Output impedance: Less than 0.2 ohms. Power requirements: AC input: 105-125 volts, 50/60 cps. Filament power only: 44 watts. Total power required: 94 watts at quiescent operating conditions. Fuses: Two 1/4 ampere slow-blow fuses; one for the filament circuits, and one for the DC+ and DC- supplies. Auxiliary power connector: Location: Octal socket on rear of unit. Power available: +300 volts at 20 ma and -300 volts at 20 ma with unit in operation; +300 volts at 60 ma and -300 volts at 60 ma when all amplifier tubes are removed. Balance resistors: Available at auxiliary connector to balance power supplies and adjust output voltages. General: Dimensions: 11 1/2" W x 6 3/4" H x 12 3/4" D.

Laboratory Vacuum Tube Voltmeter

EUW-24
\$62⁰⁰



- * Front panel servo recorder connections
- * 7 AC, 7 DC, & 7 Ohms ranges
- * Single AC-Ohms/DC probe with switch
- * Factory assembled & tested

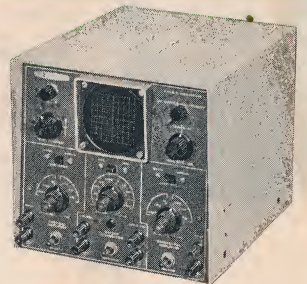
An excellent meter for a multitude of laboratory applications. Features low-profile styling and gimbal mount for space-saving under-shelf installation. Front panel terminals are provided for direct connection of a recorder such as the EUW-20A for permanent records of necessary measurements. Functions include AC volts (RMS), AC volts (peak-to-peak), DC volts, resistance and DB measurements. Ten-turn Zero and Ohms adjust controls and single all-purpose test probe also featured. Test leads included.

EUW-24 . . . 6 lbs. . . no money down, \$7 mo. \$62.00
Also available under Title III National Defense Education Act Purchase Guide No. 4615.

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: 4 1/2" 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, 25 cps to 1 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: 7 3/4" H x 4-11/16" W x 4 3/4" D.

3" DC Laboratory Oscilloscope

\$163⁰⁰
EUW-25



- * Identical vertical & horizontal AC or DC coupled amplifiers
- * DC to 400 kc bandwidth
- * 5 cps to 50 kc sweep in four ranges
- * Ext. capacity binding posts for slower sweep rates
- * Factory assembled & tested

A wide array of features plus identical amplifiers make this scope a versatile x-y plotter, important for many scientific measurements. Wide open physical layout is ideal for lab and teaching applications. Rear panel terminals provide easy access to vert. & horiz. deflection plates and Z-axis modulation. Input shorting switches simplify amplifier calibration & zeroing. Trace distortion is minimized by a special alloy CR tube shield.

EUW-25 . . . 17 lbs. . . no money down, \$16 mo. \$163.00

SPECIFICATIONS—(Vertical and horizontal channels identical): Bandwidth: DC to 400 kc (3 db point). Sensitivity: 0.1 V (peak-to-peak) per 1/2" (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-toothed 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: 7 3/4" H x 4 3/4" W x 11" D.

Household "Servants"



**SUPER-VALUE, SUPER
SHORT-WAVE PORTABLE**
—more features
than any...and at
50% less!

**NEW
SPECIAL VALUE
PRICE**
\$95.00

- * 10-transistor, 6-diode circuit
- * 550 kc to 32 mc in five bands
- * Self-contained battery power supply

Advanced design SWL receiver! Features ceramic IF "transfilters", BFO, lighted dial, tuning meter, 50" whip antenna, noise limiter, RF amplifier and more. It's the gift everyone wants—order yours. Less batteries. 18 lbs.

Kit GC-1A . . . no money down, \$10 mo. **\$95.00**
Assembled GCW-1A . . . no money down, \$16 mo. **\$165.00**
Kit XP-2 . . . 117 V AC 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 bandsread scales (oscillator tuning) for 80, 40, 20, 15 and 10 meter amateur bands and 11 meter citizens band. Selectivity: 3 kc wide at 5 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 3/4" H. x 12" W. x 10" D.



**Gift-Priced Beginner's
SHORTWAVE
LISTENER'S RADIO**



**ONLY
\$24.95**

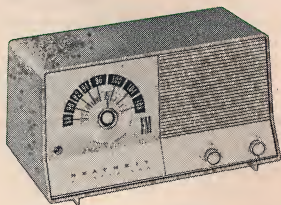
\$5 mo.

- * Built-in Speaker plus
headphone jack
- * Sensitive regenerative circuit

Perfect gift for the beginning short wave listener! Wide frequency coverage tunes marine and low-frequency aircraft signals, weather stations, distress frequencies, regular broadcast band, government and international shortwave broadcasts plus 160, 80, 40 and 20 meter amateur stations. Transformer operated for safety. Easily assembled in about six hours. 11 lbs.

Kit GR-81 . . . no money down, \$5 mo. **\$24.95**

SPECIFICATIONS—Frequency coverage: 140 kc to 18 mc on four bands. Tube complement: 12AT7 Detector/1st Audio, 50C5 Audio Output, 35W4 Rectifier. Power requirements: 105-125 V 50/60 cycle AC only, 30 watts, Fused. Controls: Main tuning (calibrated), Bandsread, Bandswitch, Regeneration, On/off volume, Phone jack. Dimensions: 10" W x 7" H x 7" D.



**Heathkit FM TABLE RADIO . . . Wonderful Gift . . .
Wonderful Sound . . . Low in Cost**

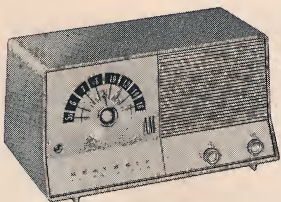
- * Transformer operated * Preassembled, prealigned tuning
unit for easy assembly

**GR-11
\$24.95**

Beautifully designed throughout for easy assembly and superb FM listening entertainment! Takes only four hours to build. No alignment equipment required since components are pretuned! Five tubes function as seven in this safe, transformer operated circuit. Built-in antenna.

Kit GR-11, 7 lbs., \$ 5 mo. **WAS \$27.50 NOW \$24.95**

SPECIFICATIONS—Frequency coverage: 88–108 mc. IF frequency: 10.7 mc. Power requirements: 105-125 volts AC 50/60 cps. Speaker: 3" PM. Antenna: built-in line, provision for external antenna. Dimensions: 5" H x 10" W x 5" D.



**For that "Extra" Radio . . . This handsome
Heathkit AM TABLE RADIO**

- * Transformer operated * Superheterodyne circuit
* Vernier tuning

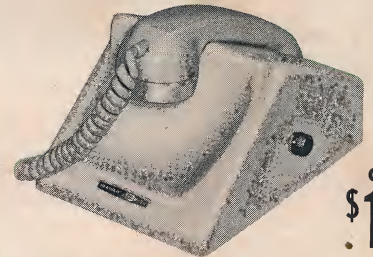
**GR-10
\$17.95**

Highly styled in ivory and beige plastic cabinet . . . and a top performer too! Superhet circuit with automatic volume control is transformer operated for safety and features vernier tuning for smooth, easy station selection. Includes built-in antenna plus terminals for external antenna.

Kit GR-10, 7 lbs. . . . Was \$19.95 **NOW \$17.95**

SPECIFICATIONS—Frequency coverage: 535-1620 kc. IF frequency: 455 kc. Power requirements: 105-125 volts AC 50/60 cps. Speaker: 3" PM. Antenna: built-in ferrite rod. Dimensions: 5" H x 10" W x 5" D.

**Here's the easy way
to use your telephone**



**GD-71
\$19.95**

- * Permits hands-free telephone talks * All-transistor circuit—instant operation * Up to 2,000 3-minute calls on built-in battery

Convenient, saves time! Continue with housework, take dictation, or look for notes while carrying on a 2-way telephone conversation! Features an all-transistor circuit, inductive pickup coil, built-in speaker and volume control. A single 9-volt battery lasts up to 100 operating hours. Takes just a few hours to assemble. Ivory colored plastic cabinet measures 5 7/8" W x 9 1/4" D x 6" H. 3 lbs.

Kit GD-71 **\$19.95**

SPECIFICATIONS—Available power output: 150 milliwatts at 10% maximum distortion, from 300 cps to 3,000 cps. Controls and switch: Gain control, On-off switch actuated by telephone handset. Circuit: Transistorized; low-current, class B audio amplifier. Input: Inductive pickup coil. Power supply: 9-volt battery, type NEDA 1602. Provides up to 100 hours of operating time. Current drain: 10 to 30 ma, depending upon volume level. Speaker: 3" permanent magnet, 3.2 ohm voice coil. Transistors: (1) 2N1274 Driver, (2) 2N1274 Output (matched). Cabinet: Molded ivory plastic, 9 1/2" L x 6" W x 5" H.

Recommended Ham Accessories

Low Cost 6 & 2 Meter Transceivers

- * Ideal for Local Net or Emergency Operations

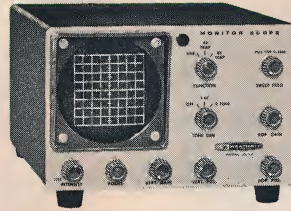
Thousands of these Heathkit transceivers now in use across the nation attest to their popularity and proven performance on the VHF amateur bands. Compact design, low cost and high versatility make them ideal for use in either mobile or fixed station installations. Both 6 and 2 meter models feature crystal-controlled transmitters and tuneable superregenerative receivers with RF stage. The highly sensitive receivers pull in signal levels as low as 1 microvolt and the transmitters with 5-watt input are more than adequate for "local" net operations. Operates "fixed" with built-in power supply or "mobile" using Heathkit GP-11 vibrator power supply. Kit is complete with ceramic element microphone, AC & DC power cables, and easy assembly instructions. Less crystal. Handsomely styled in two-tone mocha and beige.

Kit HW-29A (6 meter), 9 lbs., no money dn., \$5 mo. **\$44.95**
 Kit HW-30 (2 meter), 9 lbs., no money dn., \$5 mo. **\$44.95**



HW-29A
\$44.95

Heathkit Monitor Scope . . . allows visual observations of signal quality



HO-10
\$59.95

- * Specially designed for amateur radio use
- * Displays envelope, AF & RF trapezoid patterns on 3RPI cathode ray tube
- * 6-tube, 4-diode circuit includes two-tone test oscillator

Here's the perfect answer for modulation monitoring of transmitted and received signals. Standard coaxial connectors are provided for simple connection to antenna system feed line. Features automatic switching between received and transmitted envelope pattern. Handles power outputs from 5 watts to 1 KW.

Kit HO-10, 11 lbs., no money dn., \$6 mo. **\$59.95**

SPECIFICATIONS—Vertical response: ± 3 db from 10 cps to 500 kc. Sensitivity: 500 mv per inch deflection. Input resistance: 50 kohm. Horizontal response: ± 3 db from 3 cps to 30 kc. Sensitivity: 800 mv per inch deflection. Input resistance: 1 megohm. Sweep generator: Recurrent type: 15 to 200 cps (variable). Tone oscillators: Approximately 1000 cps and 1700 cps. Output voltage: 15 mv (nominal). GENERAL: Frequency coverage: 160 through 6 meters (50-75 ohm coaxial input). Power limits: 5 watts to 1 kilowatt output. Front panel controls: Function Selector, Sweep Frequency, Tone Generator, Horizontal Gain, Horizontal Position, Vertical Position, Vertical Gain, Focus, Intensity/Off. Rear control: Xmtr. Atten. Attenuates 0 to 24 db at approximately 6 db per step. Power supply: Transformer operated, fused $\frac{1}{2}$ amp. Power requirements: 105-125 VAC, 50/60 cps, 35 watts. Dimensions: $5\frac{1}{2}$ " H x $7\frac{3}{4}$ " W x $10\frac{1}{2}$ " D.

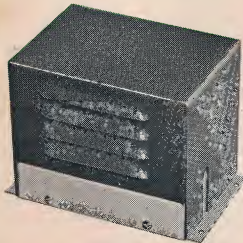
Mobile Vibrator Power Supply

- * Operates from 6 or 12 volt DC source
- * Dependable silicon diode rectifiers

Ideal for converting equipment such as the Heathkit models HW-29A and HW-30 for operation on 6 or 12 volt DC battery power. Heavy-duty rated with dependable silicon diode rectifiers. Alternate wiring instructions for use on either 6 or 12 volt systems. Provision is made for remote on/off switching for easy installation wherever convenient. Complete instructions provided for easy assembly and operation.

Kit GP-11, 6 lbs. **\$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, ICAS. Power rectifier: Two silicon diodes in voltage doubler circuit. Vibrator: Mallory type 1610 or equivalent. Vibrator frequency: Approximately 115 cps. Overall dimensions: $4\frac{1}{2}$ " H x $6\frac{1}{2}$ " W x $4\frac{1}{4}$ " D.



GP-11
\$16.88

"Cantenna" Transmitter Dummy Load . . .

ideal for servicing, testing!

With the Heathkit "Cantenna" you can forget about TVI, FCC violations, QRM, etc., while servicing or testing Amateur or Commercial transmitting equipment. Handles powers up to 1 kilowatt I.C.A.S. with less than 1.5 V.S.W.R. up to 300 megacycles. A coax input connector is provided for transmitter and phono jack for DC output to VOM or VTVM for relative power measurement. Features a special oil-cooled temperature-stable resistive element. Impedance is 50 ohms. Oil capacity is one gallon (not included).

Kit HN-31, 3 lbs. **\$9.95**



HN-31
\$9.95

New Improved "Tunnel Dipper" . . . now better than ever!

- * Covers 3 to 260 mc
- * Improved Temp. range 0-120° F.
- * Improved Meter sensitivity
- * Tunnel diode oscillator—no tubes
- * 6 color-matched coils & dial

The gift every amateur op. wants! Operates as a signal generator or a very sensitive tuned RF detector. Ideal for checking resonant frequencies of tuned circuits, identifying parasitics, tuning traps or filters and checking for harmonics! Advanced circuitry uses transistors and a tunnel diode . . . no tubes, no power cord . . . it is completely self-contained and battery-powered for portability. Tuning dial and plug-in coils are color matched for identification. Modification kits available for original HM-10 buyers.

Kit HM-10A, 3 lbs., no money dn., \$5 mo. **\$34.95**



HM-10A
\$34.95

Reflected Power Meter Shows Antenna/Transmitter Match

- * Indicates forward or reflected power and SWR
- * Covers 160 through 6 meters
- * Handles peak power up to 1 kilowatt
- * Matches 50 or 75 ohm lines

An extremely useful amateur accessory! Checks match of antenna's transmission system by measuring the forward and reflected power or SWR (standing wave ratio) from 1:1 to 3:1. Percentage readings are made on the built-in meter. A sensitivity control adjust for full scale reading without reducing transmitter output.

Kit HM-11, 3 lbs. **\$15.95**



HM-11
\$15.95

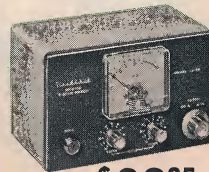
Variable Frequency Oscillator

Rugged and reliable with special features for top performance! Provides complete coverage of amateur bands, 80 through 2 meters, at tremendous savings over the cost of crystals for similar coverage. Designed for grid-block keying with the Heathkit DX-60 transmitter or other units requiring drive of 5 volts RMS or less. Cathode-follower output for isolation and regulated plate voltage for stability. Rigid steel chassis for mechanical strength and top quality components throughout for years of top-notch performance.

Kit HG-10, 12 lbs., no money dn., \$5 mo. **\$34.95**



HG-10
\$34.95



HD-19
\$29.95

Hybrid Phone Patch Kit

- * Convenient one-switch operation
- * Allows VOX or manual operation

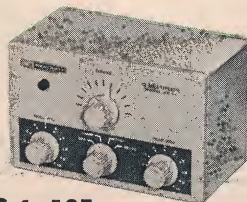
Transfer of audio signals between telephone lines and two-way radio communications equipment is easily and efficiently accomplished with this easy-to-install hybrid phone patch. Operates with nearly all transmitters and receivers, including transmitters employing automatic voice control (VOX). A standard VU meter accurately monitors output to any 600 ohm telephone line to prevent crosstalk. Controls include a single on/off function switch and separate transmit/receive gain controls. Special hybrid transformer provides a minimum of 30 db isolation. Use with 3-16 ohm speakers, Hi-Z mike.

Kit HD-19, 3 lbs., no money dn., \$5 mo. **\$29.95**

"Q" Multiplier Increases Receiver Selectivity

May be used with AC-DC or transformer operated receivers having an I.F. frequency between 450 and 460 kc. Provides an effective "Q" of 4,000 for peaking or rejecting a signal on AM, CW or SSB. Produces a sharply peaked I.F. curve for CW reception, broad peaked I.F. for phone operation or a deep rejection notch to eliminate a closely interfering heterodyne. Both peak or notch positions are tuneable to any point in the receivers I.F. bandpass.

Kit HD-11, 3 lbs. **\$14.95**



HD-11
\$14.95

Know Your Frequency With This 100 kc Crystal Calibrator

- * 100 kc to over 54 mc at 100 kc intervals
- * Transistorized circuit
- * Battery powered

Ideal for checking dial calibration of communications receivers and transmitter VFO's! Produces highly accurate signals from 100 kc to at least 54 mc in 100 kc intervals. Operation requires only connection to the antenna terminals of the receiver and switching the unit "on". The circuit is transistorized for long life and dependable performance. A single 9-volt battery furnishes all power required. The 100 kc crystal included has 0.005% tolerance.

Kit HD-20, 1 lb. **\$14.95**



HD-20
\$14.95



Best-Value Portables

Always a Welcome Gift . . .
**Best-Buy Heathkit Full-Size
 Deluxe All-Transistor
 AM PORTABLE**

- * Powerful 6-transistor, 2-diode circuit
- * Big 4" x 6" pm speaker for rich, full sound
- * Vernier tuning—built-in rod antenna
- * Sun-tan simulated leather case, plastic grille

**NEW
 SPECIAL VALUE
 PRICE**

**XR-2L
 \$28⁹⁵**



**A Gift to Treasure for Years to Come!
 All-Transistor
 FM PORTABLE**

- * 10-transistor, 2-diode circuit
- * Automatic frequency control
- * Three IF limiters
- * Push-pull output stage
- * Big 4" x 6" speaker
- * Vernier tuning
- * Tone control
- * Telescoping whip antenna



**ONLY
 \$47⁹⁵**

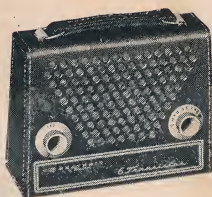
\$6 mo.



A styling award-winner and outstanding performer! Superb all-transistor circuitry operates up to 1000 hours on six economical standard size "D" flashlight batteries to bring you music, news, and sports anywhere, anytime. Features vernier tuning for smooth, easy station selection, built-in rod antenna for increased signal pickup, push-pull output and large speaker for "big-set" tone. Easy assembly takes just a few fun-filled hours. Order your XR-2 portable now! (Less batteries).

Kit XR-2L, simulated leather, 5 lbs. . . . no money dn., \$5 mo. . . . \$28.95

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.



Ideal Gift for Beginner Kit Builders

- * Superb performing all-transistor
- * Free Tool Kit * Free Battery



Here's an ideal way to introduce the fun of Heathkit building to beginners. This easy to assemble Transistor Portable Radio includes a free tool kit, everything needed to build it, plus a free battery! Complete instructions show how to build this 6-transistor, 2-diode portable. All parts mount on a circuit board. Big 4" x 6" speaker assures fine tone. Attractive simulated leather case. Compare it with portables costing \$40 or more!

GR-151, radio & tool kit, 5 lbs. ONLY \$21.95

This superbly designed Heathkit FM portable is one of the most thrilling and fun-filled gifts you can give! Its portable convenience allows use indoors, outdoors, anywhere! . . . and the sound! . . . clear, rich, and static-free as only FM can provide. The powerful 10-transistor, 2-diode circuit with three IF limiter stages, delivers full fidelity and complete quieting. Automatic frequency control (AFC) gives drift-free reception. High sensitivity and a telescoping 34" whip antenna insures maximum signal pickup. Operates 300 to 500 hours on a self-contained battery. A dream to assemble with prealigned IF transformers, factory assembled and aligned tuning unit and fast, circuit board construction. Make this a "must" on your Christmas list!

Kit GR-61 . . . 6 lbs. no money dn., \$5 mo. \$47.95
GRA-131-1 . . . Battery for above, 2 lbs. \$1.10

SPECIFICATIONS—Tuning range: 88 MC to 108 MC. **IF frequency:** 10.7 MC. **Audio output:** 250 milliwatts. **Loudspeaker:** 4" x 6" permanent magnet. **Tone control:** Treble-cut. **Recommended battery:** 9 volt. Long-life, leakproof, NEDA #1612, Eveready #2356. **Battery life:** 300 to 500 hours. **Dimensions:** 7 3/4" H x 10" L x 4" D (overall). **Styling:** Sun-tan simulated leather case, curved beige plastic grille.

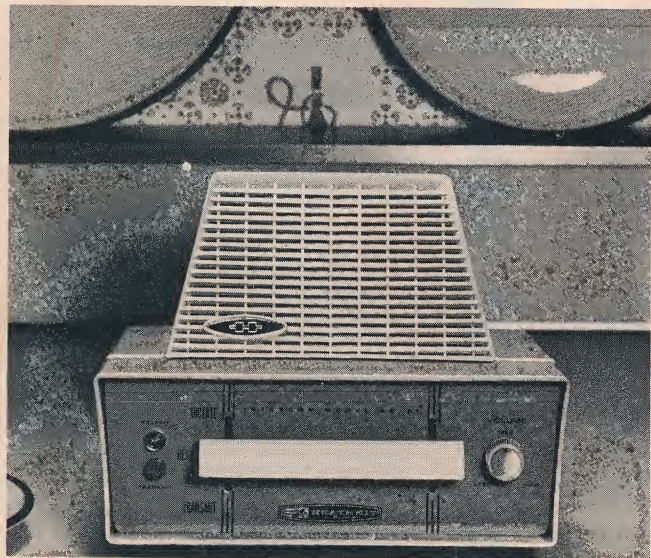
**Perfect Gift for Home or Office . . . "WIRELESS INTERCOM,"
 Only \$45.90 a Pair!**

- * All-transistor circuit—built-in AC power supply
- * No connecting wires between units, just plug into nearest AC outlet—costs less than 3c a month to operate
- * Add additional units at any time to expand system
- * Handsome two-tone beige plastic cabinets

High operating economy, easy installation, and handsome modern styling is featured in this "All-Master" wireless intercom system. Perfect for home, office or factory! Each unit features an all-transistor circuit for high operating economy and dependability and a self-contained 117 v. AC power supply. The power line fed by any one pole line transformer is used as the transmission medium for the low frequency AM RF signal . . . no connecting wires between units necessary . . . just plug the line cords into the nearest AC outlets and units are ready to operate! You can add additional units at any time to expand the system without changing or adding wiring. Other features include: a squelch circuit for full quieting on standby, overload diode to prevent distortion on high-level signals, and transmit & standby indicating lights. Press-to-talk bar switch has spring-return to listen position and a transmit "hold" position for dictating.

Kit GD-51-2 (pair) 10 lbs. . . . no money down, \$5 mo. \$45.90
Kit GD-51 (one station) 5 lbs. \$22.95

SPECIFICATIONS—Power requirements: 105-125 V 50/60 cycle AC or DC. **Standby power:** 2.5 watts. **Transmit frequency:** 220 kc & 180 kc (switch selected). **Size:** 6 1/4" H x 8" W x 7 1/4" D.



Selection of "Mobile" Heathgifts



Heathkit HR-20 SSB Mobile Receiver ...

Fine Performance
at Low Cost



HR-20
\$134⁵⁰



- * Tunes SSB, AM & CW signals—80 through 10 meters
- * Better than 1 uv sensitivity on all bands
- * Crystal bandpass filter for sharp selectivity
- * Crystal-controlled BFO for selectable sideband reception

Everything you could ask for in a mobile receiver and more! A tuned RF stage, crystal bandpass filter, extensive temperature compensation and voltage regulation of all oscillators are featured to assure the high sensitivity, selectivity and stability so vital in achieving "top" mobile communications! Amateur bands 80 through 10 meters are separately calibrated in five bands to assure proper tracking and precise frequency settings. Also featured is a product detector for SSB & CW reception, and a diode detector for AM. Sturdily constructed for rugged mobile use. Rear panel provision for 8 ohm speaker and anti-trip circuit in transmitter. Operates with Heathkit power supplies shown on opposite page.

Kit HR-20, 19 lbs. . . . no money down, \$13 mo. \$134.50

SPECIFICATIONS—Frequency range: 80 thru 10 meters in 5 bands, 3.5 to 4.0; 7.0 to 7.3; 14.0 to 14.35; 21.0 to 21.5; 28.0 to 29.7 MC. **Intermediate frequency filter:** Center frequency 3.0 MC; Bandwidth at -6 db, 10.0 KC Max.; Hermetically sealed. **Panel controls:** Sideband Select; R.F. gain; A.F. gain—Off-On; Noise Limiter; AVC select; main tuning; band switch; antenna trimmer; SSB, CW-AM switch. **Signal-to-noise ratio:** 10 db at 1 microvolt or less. **Tube complement:** 6BZ6—R.F. amp.; 6EA8—Mixer-Oscillator; 6BZ6—1st I.F. amp.; 6EA8—2nd I.F. amp. (½); 6EA8—S meter amp (½); 6BE6—Product detector—BFO; 6BJ7—AM detector-noise limiter—AVC; 6BE8—1st Audio-Audio output; OA2—Voltage Regulator. **Output impedance:** 500 ohms and 8 ohms. **Power requirements:** 6.3 or 12.6 volts 4 amps AC or DC, 300 volts DC at 120 MA. **Cabinet Size:** 6¼" H x 12¼" W x 9¾" D.

Heathkit HX-20 SSB Mobile Transmitter ...

100-Watts Mobile!



HX-20
\$199⁹⁵



- * Complete bandswitching of 80 through 10 meter bands
- * Hermetically sealed crystal bandpass filter
- * Crystal controlled dual conversion heterodyne circuitry
- * Automatic level control for greater talk power

For a big "plus" in mobile performance equip with the Heathkit HX-20, style and performance mate to the HR-20 Mobile Receiver. This complete SSB suppressed-carrier transmitter has automatic voice-operated transmit/receive switching (VOX) for full operating convenience, a full 100-watts input to the final for SSB communications with plenty of "punch" and balanced modulator circuitry for long-term suppression stability that stays put! A built-in temperature-stable VFO for rock-steady frequency settings and many more high performance features offered in the HX-20 make it the best buy in mobile gear anywhere! Operates with Heathkit power supplies on opposite page.

Kit HX-20, 22 lbs. . . . no money down, \$19 mo. \$199.95

GH-12, 2 lbs. . . . Push-to-talk microphone. \$6.95

SPECIFICATIONS—Types of emission: SSB (Upper or lower) and CW. **Power input:** 100 watts PEP, SSB and CW. **Output impedance:** 50 to 75 ohms with not more than approx. 2:1 SWR. **Frequency range:** (MC): 3.5 to 4; 7.0 to 7.5; 14.0 to 14.5; 21.0 to 21.5; 28.0 to 29.5. **Frequency stability:** Overall frequency within 100 cps after warmup. **Carrier suppression:** 50 DB below peak output. **Unwanted sideband suppression:** 55 DB below peak output. **Keying characteristics:** Grid block keying throughout. **Audio input:** High impedance microphone. **Power requirements:** 6.3 or 12.6 volts 4 amps.; -125 volts 20 milliamps; 300 volts 100 milliamps; 600 volts 130 milliamps (uses Heath HP-23 or HP-13 power supplies). **Cabinet size:** 12¼" W x 6¼" H x 9¾" D.

Feature-Packed 6 & 2 Meter Transceivers For VHF Operation!



\$199⁹⁵

HW-10

- * Everything you need . . . transmitter, receiver & power supply . . . all in a single, compact unit
- * Built-in 3-way power supply for 117 VAC, 6 or 12 V DC
- * 10-watt RF output to antenna—6360 final amplifier
- * Tracked VFO and exciter stages for single knob tuning
- * Built-in low pass filter—push-to-talk microphone

Transmit & receive VHF facilities at low, low cost! Extremely versatile, the Heathkit 6-meter "Shawnee" or 2-meter "Pawnee" feature a built-in 3-way power supply to permit use on either 117 volts AC household current or 6 or 12 volt DC battery in mobile installations. Quick-disconnect plugs & cables furnished, allow change from "mobile" to "fixed" station operation in just seconds! . . . permitting use anywhere! Transmitters feature a built-in temperature stabilized VFO and switch selection of four crystal positions for net, novice, CAP and MARS operation. A large, illuminated slide-rule dial for both receiver and VFO, a "spotting" switch, push-to-talk microphone, panel "S" meter and versatile controls featured provide the utmost in operating convenience. Sturdy construction with wrap-around steel case, extensive shielding of transmitter, receiver and power supply assure top-notch performance. Mounting bracket included.

Kit HW-10 (6 meter transceiver), 34 lbs., no money dn., \$19 mo. \$199.95

Kit HW-20 (2 meter transceiver), 35 lbs., no money dn., \$19 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 ¼" 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, 10 watts nominal CW, 50 ohm non-reactive 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 ¼" 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 ar. ps, 7.5 amps, 120 watts. Receive—8.5 amps, 4.5 amps, 60 watts. **Cabinet dimensions:** 6" H x 10" D x 12" W.

No Money Down. Up to 18 Months To Pay. Here's an ideal way to lighten that Christmas budget! Order your Heathgifts now, and any purchase of \$25 to \$600 can be paid for later on Heath's liberal time-pay plan. Complete details on enclosed order form.

Heathgifts for Your Car



GR-41
\$64⁹⁵

GD-20
\$109⁹⁵

The gift you'll appreciate each mile you drive . . . The Heathkit FM High-Fidelity CAR RADIO at 50% Savings

- * 10 transistor circuit * 10 watt push-pull output * Preamsembled FM tuning unit *
- Automatic frequency control * Separate tuner & amplifier * Easy circuit board assembly *
- 12 V negative ground systems only

Here's superb FM entertainment wherever you drive! And at the lowest cost in the history of FM! Featuring separate tuner & amplifier for easy installation plus broad-band circuitry for true high fidelity performance, this cool-running 10-transistor circuit covers the entire FM band (88-108 mc) with better than 1.25 micro-volt sensitivity for a 20 db signal-to-noise ratio. It has all the features you want: an RF amplifier, separate oscillator and mixer, 3 IF stages, 2 audio driver stages, and push-pull output. Controls include Tuning, On/Off Volume, AFC defeat switch, and Tone control. An antenna coupling cable and speaker control switch are included to use existing AM auto antenna and speaker (use accessories below if no AM radio is installed). Built-in circuit breaker protection eliminates the need for fuses. All transformers and tuning unit are factory aligned; circuit board construction and complete instructions make assembly fast and easy. Styled in black with chrome bezel and knobs; lighted dial scale. 7 lbs.

- Kit GR-41, no money down, \$7 mo. \$64.95
 - Assembled GRW-41, no money down, \$10 mo. \$94.95
 - Model GRA-41-1, antenna, solid stainless steel, cut for FM band, complete with swivel mt., for rear mounting away from engine noise. 15' coax cable. 2 lbs. \$3.95
 - Model GRA-41-2, 6" x 9" oval speaker. Grille for rear deck mt. 2 lbs. \$4.95
 - Model GDP-192 RF noise suppressor kit, for any engine, 5 heavy duty capacitors, mount on existing terminals, no brackets reqd. 1 lb. \$16.95
- SPECIFICATIONS—Tuning range:** 88 to 108 mc. **Quieting sensitivity:** 1.25 uv for 20 db signal to noise quieting. **I. F. frequency:** 10.7 mc. **I. F. rejection:** 70 db. **Image rejection:** 30 db. **Total bandwidth:** 340 kc (6 db down). **Audio power response:** ±1 db (60-12,000 cps). **Harmonic distortion:** Less than 1% @ 1 kc; Less than 3% 60-12 kc. **Power output:** 10 watts RMS, 20 watts peak. **Circuit:** 10 transistors. RF amplifier, oscillator, mixer 3 IF stages, 2 audio driver stages, push-pull output. **Controls:** Tuning; on/off, Volume; AFC defeat; Tone control. **Dimensions:** (RF unit) 2 1/2" H x 7 1/2" W x 4 3/4" D, (power amplifier) 2 1/2" H x 6 3/4" W x 4 3/4" D. **Power requirements:** 2 amperes @ 12 v. DC at full power output.

The Luxury Gift any car owner can afford . . . The Heathkit Radio-Controlled GARAGE DOOR OPENER

- * Opens, closes & lights your garage automatically
- * Operates overhead track, jamb & pivot doors up to 8' high
- * Fool-proof safety device disengages door when obstructed
- * Easy to build & install with complete instructions supplied

The Heathkit radio-controlled garage door opener is more than just a labor-saving device, it offers convenience, safety, and protection of your property! Best of all, it's economical to buy . . . you save by buying direct and doing the easy assembly and installation yourself!

You'll especially appreciate its many advantages during bad weather or at night . . . just a touch of a button on your car's dashboard as you pull into the driveway is all it takes to open the door and turn on the light . . . another touch of the button once you're safely inside and the door closes automatically, securely. A time delay on the mechanism operated light gives you ample time to enter the house or to switch on the main lights, then turns itself off automatically . . . what could be more simple!

The mechanism can be purchased separately for operation from the house or garage or complete with transmitter and receiver for "radio-controlled" operation. A unique safety device on the mechanism releases the door automatically should it meet any obstruction. Release pressure is adjustable in both "up" and "down" directions to meet the requirements of any door. Mechanism requires just 2 1/2" clearance above highest point of door travel. Transmitter & Receiver feature selectable tone-coding to eliminate interference from other units operating nearby. Order your Heathkit radio-controlled garage door opener today . . . and enjoy its many advantages for years to come.

- Kit GD-20: Mechanism, Transmitter & Receiver. 67 lbs. . . . no money down, \$11 mo. \$109.95
- Kit GDA-20-1: Transmitter only. 4 lbs. . . . no money down, \$5 mo. \$24.95
- Kit GDA-20-2: Receiver only. 3 lbs. \$16.95
- Kit GDA-20-3: Mechanism only. 59 lbs. . . . no money down, \$7 mo. \$69.95

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

RECEIVER SPECIFICATIONS—117 V.A.C. 4 3/4" wide x 6" long x 4" high. 6BH6 & 6AU6, 10 watts idle, 12 watts with signal. 27.255 MC, 3 audio filter frequencies approx. 2KC, 2.9KC & 3.7KC adjustable to match Xmitter. Fused.

MECHANISM SPECIFICATIONS—126" length x 8 3/4" high x 13" wide, 100 lbs. max. operating force. Operate doors up to 8' high, 117 V.A.C. 1/2 H.P. motor. Fused.

Lowest Cost INTERCOM with All-Installation Flexibility—Perfect Gift for the Home!

- * Beautifully styled beige plastic cabinets
- * Weatherproofed outdoor remote
- * Master takes up to 5 remote stations
- * Efficient 1 watt output, 3.5 watt power drain

Indoors, outdoors, this versatile intercom saves you time, steps, and money! Master unit has one-watt output and specially designed frequency response for crisp, clear communications; separate level controls for listen and talk functions; accepts up to five remote stations with "selective-call" of any one remote or "all-call" of all remotes for paging or announcements; built-in AC power supply. The indoor remotes have "listen-talk-monitor" switch. Outdoor remotes have doorbell button, weatherproof speaker, aluminum grille, and weather seal. Each remote has a 50' connecting cable. Easy to build.

- Kit GD-121 Master Station . . . 6 lbs., no money down, \$5 mo. \$29.95
- Kit GD-131 Indoor Remote . . . 4 lbs. \$8.95
- Kit GD-141 Outdoor Remote . . . 2 lbs. \$5.95

SPECIFICATIONS: Power requirements: 117 v ac 50/60 cycles 2.5 watts (idling), 3.5 watts (full output). **Transistors:** four 2N1274. **Dimensions:** 6 1/4" H x 8" W x 7 1/2" D (master), 5" H x 8" W x 6" D (indoor remote), 5 1/2" x 4 1/2" panel size (outdoor remote).



Complete Set
\$44⁸⁵

For Amateurs on the Go...There's a Wide

New from Heathkit! One-Band SSB Transceivers for 80, 40, or 20 Meter "Fixed or Mobile" Operation! Pick the band you want at a price you can afford!

- * True transceivers for 80, 40, or 20 meter SSB operation
- * Operate LSB on 80 & 40 meters, USB on 20 meters
- * 200 watts P.E.P. input—2 6GE5 RF amplifiers
- * Crystal filter type SSB generation
- * ALC, AVC, and S-Meter
- * Built-in VOX & push-to-talk circuitry
- * Stable low frequency VFO
- * 2 kc dial calibration—6" bandspread—vernier tuning



\$119⁹⁵ HW-12



There's nothing like receiving something new as a gift. And for the Ham operator, this is especially true when it's Amateur equipment. He'll be particularly delighted to receive one of these better performing SSB Transceivers from Heathkit . . . the by-word in Amateur radio equipment today! And you can choose the band he wants in a compact, lightweight, sturdy unit that's ready to go anywhere! He can use it for "fixed" as well as mobile operation with the proper Heathkit power supplies below. A PTT microphone (GH-12 below) is the only other piece of gear he needs for immediate on-the-air operation.

Designed to offer the top in value and performance, these transceivers feature a deluxe 14-tube heterodyne circuit, 200 watts peak-envelope-power input to the final amplifier, a highly stable 1.5-1.7 mc VFO, crystal-lattice filter for SSB generation, automatic level control to assure higher average output, built-in PTT and VOX circuits and provision for use with a linear amplifier. Receiver features high sensitivity, 2.7 kc selectivity and slow AVC action for excellent SSB reception. Provision is also made for plug-in 100 kc crystal calibrator for accurate band-edge marking.

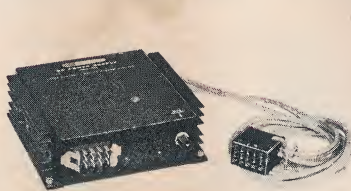
Assembly of these units is quick and simple since over 90% of the components mount on a heavy-duty circuit board. A precut, cabled wiring harness and simple-to-follow instructions further facilitate ease of building. Alignment also is simple with all critical stages pretuned. The rugged one-piece steel chassis is welded and braced for rigidity and stability as-

sureing life-long faithful service. A "Gimbal" mounting bracket is included. Surprise him with the latest in SSB transceivers on Christmas morning by choosing one of the fine-performing units now! Or order all three for extra capability . . . extra savings!

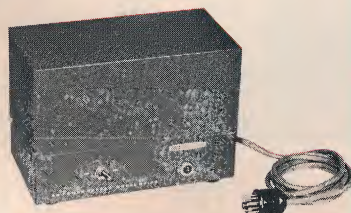
- Kit HW-12, 80-Meter . . . 15 lbs. . . . no money dn., \$11 mo. . . . \$119.95**
- Kit HW-22, 40-Meter . . . 15 lbs. . . . no money dn., \$11 mo. . . . \$119.95**
- Kit HW-32, 20-Meter . . . 15 lbs. . . . no money dn., \$11 mo. . . . \$119.95**
- GH-12, Push-to-talk microphone . . . 2 lbs. . . . \$6.95**
- Kit HRA-10-1, Plug-in 100 kc crystal calibrator . . . 1 lb. . . . \$8.95**
- SPECIAL VALUE PRICE! All three transceivers . . .**
- Model HW-42 . . . no money down, \$21 mo. . . . Only \$320.00**

SPECIFICATIONS—RF input: 200 watts PEP. **Sideband generation:** Crystal lattice bandpass filter method. **Stability:** 200 cps per hour after warm-up. **Carrier & unwanted sideband suppression:** 45 db. **Frequency coverage:** HW-12, 3.8-4.0 mc; HW-22, 7.2-7.3 mc; HW-32, 14.2-24.35 mc. **Receiver sensitivity:** 1 uv for 15 db S+ N/N ratio. **Receiver selectivity:** 2.7 kc @ 6 db, 6.0 kc @ 50 db. **Output:** 50 ohm fixed (unbalanced). **Operation:** HW-12 & HW-22, LSB; HW-32, USB. **Audio output:** 1 watt @ 8 ohms. **Mike input:** Hi-Z. **Panel controls:** Frequency, final tune, function (OFF-PTT-VOX-TUNE), RF gain, AF gain, (pull for crystal calibrator), VOX gain, meter. Front panel screwdriver adjust for S-meter and VOX delay. **Rear panel controls:** Mike gain, tune level, final bias. **Tube complement:** Fourteen tube heterodyne circuit; (3) 6EA8's mic. amp., VOX relay amp., IF amp., RF amp., Rcvr. mixer; (5) 6AU6's, VFO, VOX amp., IF amp., Xmt. mixer; (1) 6BE6, VFO isolator (HW-12), Het. Osc. and mixer (HW-22 & HW-32); (1) 12BY7, Driver; (1) 12AU7, Xtal osc. product det.; (1) 6EB8, Audio amp. and output; (2) 6GE5 RF output. **Power requirements:** 800 VDC @ 250 MA peak, 250 VDC @ 100 MA, -125 VDC @ 5 MA, 12 VAC or VDC @ 3.75 amperes. **Cabinet dimensions:** 6 1/4" H x 12" W x 9 3/4" D.

NEW Heathkit SSB Power Supplies



Kit HP-13



Kit HP-23

Specially designed for SSB operation with emphasis on maximum dynamic regulation. May be used with most other popular SSB transceivers, having similar power requirements. Dependable solid-state circuitry is used throughout with long-life silicon rectifiers in both units.

Kit HP-13 . . . 7 lbs. . . . no money down, \$6 mo. . . . \$59.95

SPECIFICATIONS—Input voltage: 12 to 14 volts DC. **Input current:** 25 amperes maximum with full load. **High voltage output:** 800 volts DC, no load; 750 volts DC @ 250 ma. **AC ripple:** Less than 1% @ 250 ma. **Duty cycle:** 150 ma continuous; 150 to 300 ma @ 50%. **Low voltage output:** (high tap) 310 volts DC, no load; 300 volts DC @ 150 ma, (low tap) 265 volts DC, no load; 250 volts DC @ 150 ma. **AC Ripple:** less than .05% @ 150 ma. Continuous duty cycle to 175 ma. **Adjustable bias voltage:** -40 to -130 volts DC @ 20 ma max. **Duty cycle:** continuous. **Dimensions:** 7 3/4" W x 7 1/2" L x 2 3/4" D. All voltages referenced at 13 VDC Input.

Kit HP-23 . . . 18 lbs. . . . no money down, \$5 mo. . . . \$39.95

Export model available for 115/230 VAC, 50-60 cps, write for details.

SPECIFICATIONS—Power requirements: 120 volts AC, 50-60 cycles, 350 watts maximum. **High voltage output:** 820 volts DC no load; 700 volts DC @ 250 ma. **AC ripple:** Less than 1% @ 250 ma. **Duty cycle:** 150 ma continuous, 150 ma to 300 ma @ 50%. **Low voltage output:** (high tap) 350 volts DC, no load; 300 volts DC @ 150 ma, (low tap) 275 volts DC, no load; 250 volts DC @ 100 ma. Less than .05% AC ripple @ 150 ma, continuous duty to 175 ma. **Fixed bias:** -130 volts DC, no load; -100 volts DC @ 30 ma. **Adjustable bias:** -40 to -80 volts DC @ 1 ma maximum. Less than .5% AC ripple. Continuous duty to 20 ma. **Filament voltage:** 6.3 V, AC @ 11 amps; 12.6 V, AC @ 5.5 amps. **Dimensions:** 9" L x 4 3/4" W x 8 3/4" H.

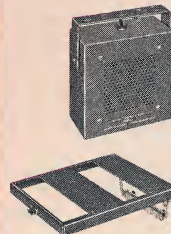
RF POWER METER . . . Monitors Signal

- * Operates with any transmitter
- * Requires no external power
- * Range, 100 kc to 250 mc



Shows relative power output of transmitter by sampling RF radiation near antenna. Small, compact size allows use anywhere. A strong magnet in the base of the PM-2 holds it fast to any steel surface, car dashboard, transmitter case, etc. 2 lbs.

Kit PM-2 . . . \$12.95



Mobile Speaker Kit
Matches Heathkit HR-20 receiver. Housed in rugged steel case with mounting bracket, 5" PM speaker, 8 ohm impedance.

Kit AK-7 . . . 3 lbs. . . . \$5.95

Mobile Base Mount Kit
A handy base for the HR-20 & HX-20. Holds transmitter and receiver conveniently at driver's side. Fully adjustable.

Kit AK-6, 4 lbs. . . . \$4.95

Heathkit Auto & Marine RF Noise Suppression Component Set

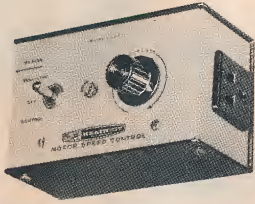


Hams, fleet owners, CB ops, and boat owners! This kit reduces voltage regulator hash, generator whine, and ignition coil interference. 5 special thru-pass capacitors rated at 60 amps., 275° F. Easy to install; no special brackets required. 1 lb.

Model GDP-192 . . . \$16.95

Auto & Workshop Accessories

New! A Motor Speed Control That Lets You Reduce Power Tool Speed Without Loss Of Operating Efficiency!



\$17.50
GD-973

* Ideal for use with drills, saws, mixers . . . any power tool with a universal AC-DC motor * Has Silicon Controlled Rectifier with feedback circuit that slows motor, yet maintains high torque power * Adjustable speed control lets you dial desired motor speed * Prolongs life of drill bits, blades and other attachments

Ever wished that you could cut down the motor speed of a power drill or saw to save those precious bits or blades? Now you can with Heathkit's New GD-973 Motor Speed Control! Even with the motor speed slowed down to almost a "stop", your power tools will still operate at "full speed" efficiency. Specially designed to slow down any universal motor with a rating of 10 amperes or less, the GD-973 can be used with an endless number of devices such as power drills, sabre saws, food mixers, sewing machines, food blenders, sanders, movie projectors, fans, lathes, vibrators, etc. You can bore thru the toughest steel or cut through the hardest wood with ease and without ruining a good blade or bit. This phenomenal performer is attractively housed in a black and beige, sturdy steel box, and is simple to build. Makes a perfect gift for the man who likes to putter.

Kit GD-973, 3 lbs., \$17.50
SPECIFICATIONS—Current capacity: Any universal motor powered device with a nameplate rating of 10 amperes or less. **Idle power consumption:** 3 watts. **Front panel controls:** Power switch, speed control. **Power source:** 117 VAC. **Dimensions:** 6" L x 3 1/2" W x 3 1/2" H.

Perfect Gift for Car Hobbyists & Experimenters New Heathkit Transistor Ignition System Kit

* Voltage protected transistors * Adjustable for optimum current

Those interested in the all-American hobby of tinkering with a car will find this new transistor ignition kit a fascinating experiment. Designed for 12 volt negative-ground ignition systems, this kit replaces your present coil with a new special Mallory coil and a transistor circuit to produce a much "hotter" spark. Leading automotive magazine editors claim the results are astonishing . . . better mileage, smoother idling and acceleration, easier starting, and longer life for the engine and ignition system parts. Kit is complete with all necessary parts; easy to build, simple to adjust (meter and adjustable ballast resistor included for optimum current setting), easy to install. For the complete story see the August '61 issue of Science & Mechanics magazine.

Kit GD-212, 5 lbs., no money dn., \$5 mo. \$34.95

Specifications: Two 2N1546 transistors; two 56v., 1w. Zener diodes; adjustable 1 ohm, 100 watt ballast resistor; Mallory F-12T coil; current meter. **Power requirements:** 12 volt negative ground system only. **Finish:** bright zinc. **Dimensions:** chassis 1 1/4" H x 3 3/4" W x 5-13/16" L.

Gilbert-Davis 4-Unit Basic Tester Kit Only \$11.95

These famous brand testers are top quality instruments which provide the necessary first steps in engine tune-up and repair. Kit includes a Model 34 Remote Starter Switch with heavy duty push button and extra long, neoprene insulated lead wires . . . a Model 35 Compression Tester that reads 0-300 lbs. on easy-to-read 2 1/2" dial (features short stem with 15° offset for hard-to-reach back cylinders) . . . a Model 36 Vacuum/Fuel Pump Tester with 2 1/2" three-color dial calibrated from 0-30 inches for vacuum and 0-7 lbs. pressure . . . a Model 37 Engine Timing Light with strong molded plastic case, long leads, and rubber covered connectors. Ideal for do-it-yourselfers and professionals alike!

GFP-83, 4 lbs. \$11.95

Save Hundreds With This Heathkit IGNITION ANALYZER

\$14.95
ID-11

Kit Form or
Factory Assembled



\$89.95
IO-20

* Spots ignition troubles * Selects 4 patterns without lead changing
* Steady, lock-in patterns * "Expanded" views for detail

Ideal gift for sports car enthusiasts or professionals! Shows shorted plugs, bad points, defective wiring, worn distributor parts, incorrect dwell time, etc. Complete manuals show what to look for on the big screen, how to isolate trouble.

Kit IO-20, 17 lbs., no money dn., \$9 mo. \$89.95

SPECIFICATIONS—RPM range: 400-5000 rpm. **Displays:** Secondary, Primary, Parade, Superimposed. **Screen size:** 4 1/2" 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. **Power requirements:** 105-125 V, 50/60 cycles AC, 30 watts.

Low Cost Heathkit Timing Light

* Ignition analyzer accessory * Works with any 4-cycle engine * Produces bright white light

Plug this timing light into the IO-20 analyzer and an intense white light shows timing marks even in brightly lighted areas. Speed range: 0-1250 flashes per min. (0-2500 rpm for 4 cycle auto engines). Hard rubber pistol-grip case (6" H x 7 1/2" L x 2" W) with 10' cable.

Kit ID-11, 3 lbs. \$14.95

Assembled IDW-11 . . . 2 lbs. \$19.95

Drive For Better Mileage

With This New Electronic Miles-Per-Gallon Meter

* Instantly shows how many mpg. your car is delivering * Computes mpg 1000 times each mile * Learn how smooth acceleration helps * Find most economical speed * Check motor efficiency



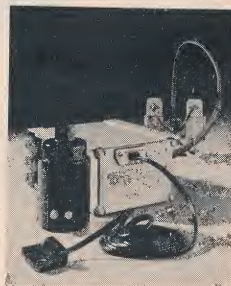
A first in motoring history . . . you can "see" how many miles you are getting per gallon . . . drive to suit the condition of your car, terrain, temperature, weather, etc. You'll find the Fuel Computer pays for itself as you learn the economies of smooth acceleration, best cruising speed, best brand of gas & oil, etc. Lighted indicator mounts on dash or steering column, reads like a speedometer in miles per gallon. Fuel transmitter installs in miles per gallon. Fuel transmitter installs between carburetor and fuel pump; miles transmitter inserts between speedometer & cable; coordinator mounts under dash. Every car owner wants this for Xmas. Please advise make and model of car.

Model GDP-222, 3 lbs., no money dn., \$6 mo. \$59.50

Capacitive Discharge

Electronic Ignition System . . . Now Only \$95.00

* Maintains peak engine efficiency * Fast, sure starting in all weather
* Uninterrupted power flow * Increased acceleration—fuel economies



This new Motion, Inc. EI-4 Capacitive Discharge Ignition System retains all the advantages of ordinary transistor ignition systems and adds new advances for greater performance . . . faster voltage rise time to eliminate leakage and assure on-time firing . . . greater open circuit voltage and lower time constant to maintain smooth firing at very high speeds . . . makes even fouled plugs fire for peak engine performance . . . provides full firing voltage even if battery is low. Thoroughly lab and field tested; compatible with all 12-volt gasoline engines and easy to install. Includes coil, electronics package, cables, all parts—not a kit.

GDP-763-N (neg. grnd.) 8 lbs., no money dn., \$10 mo. \$95.00

GDP-763-P (pos. grnd.) 8 lbs., no money dn., \$10 mo. \$95.00

Gifts To Thrill Any Amateur!



"Marauder" SSB TRANSMITTER... with features found only on rigs costing twice as much!

- * 180 watts P.E.P. SSB & CW—80 through 10 meters
- * Operates SSB (upper or lower sideband), CW, AM & FSK
- * Multi-section, hermetically sealed crystal bandpass filter
- * Dual conversion, crystal controlled heterodyne oscillator
- * Preheated, temperature compensated VFO for high stability



HX-10
\$334⁹⁵

Complete! . . . nothing else to buy . . . all power supplies are built-in . . . all crystals furnished for 80 through 10 meter coverage! Straight-forward circuit layout and precut, cabled wiring harnesses assure easy assembly. Top quality parts and heavy-duty, partitioned 16 gauge steel chassis and cabinet assure a lifetime of rugged dependability. All controls are located "out-front" where you want them for maximum ease of operation . . . no doors or hatches to open! Special 165-to-1 worm-gear tuning assembly provides smooth anti-backlash tuning with approx. 10 kc per turn. Compare it with any! Its outstanding array of features and lowest-of-all price make it the best in SSB! Put it in your shack this Xmas.

Kit HX-10, 95 lbs., no money down, as low as \$22 mo. \$334.95

SPECIFICATIONS—Emission: SSB (upper or lower sideband), CW, AM and FSK. **Power input:** 180 watts PEP—SSB and CW, 75 watts AM. **Output impedance:** 50 to 75 ohms with not more than approximately 2:1 SWR. **Frequency range (MC):** 3.5 to 4.1; 6.9 to 7.5; 13.9 to 14.5; 20.9 to 21.5; 27.9 to 28.5; 28.5 to 29.1; 29.1 to 29.7. **Frequency stability:** within 100 cps, after warm-up. **Carrier suppression:** 50 db below peak output. **Unwanted sideband suppression:** 55 db below peak output. **Keying characteristics:** Break-in CW provided by operating VOX from a keyed tone using grid-block keying. **Audio input:** High impedance microphone or phone patch. **Audio frequency response:** 400 to 3000 cps at ± 3 db. **Power requirements:** OFF—4 watts; STANDBY—200 watts; KEY DOWN—400 watts at 117 volts, 50/60 cycles AC. **Cabinet size:** 19" W x 11 $\frac{1}{2}$ " H x 16" D.

Heathkit "Warrior" KILOWATT LINEAR

- * Completely self-contained desk-top KW linear
- * Operates SSB, AM & CW on 80 through 10 meters
- * Exclusive internal RF shielding—811A & 866A tubes
- * Ideal companion for the Heathkit "Marauder"



HA-10
\$229⁹⁵

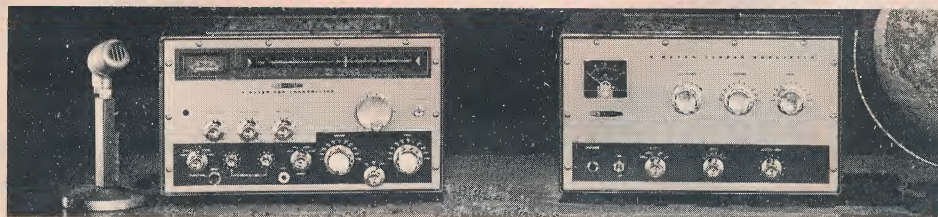
You'll find the Heathkit "Warrior" big in every way! . . . big in performance . . . big in features . . . big in value! . . . yet priced at only half that of comparable units. Amplifier and power supplies for HV, filament and bias are built-in. May be driven by any 50 to 100 watt output transmitter (no matching or swamping networks required). Stable grounded-grid circuitry provides up to 70% efficiency. Popular tube complement consists of 4-paralleled 811A's and 2-866A's forced-air cooled by a built-in fan. Exclusive internal RF shielding, monitor scope output, neutralized final, interlocked switching of HV, rugged construction and many more features put top quality and power-packed performance within easy reach of any amateur. Get on the air this Xmas with your own "Warrior".

Kit HA-10, 100 lbs., no money down, \$22 mo. \$229.95

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.

HX-30 6-Meter SSB TRANSMITTER

- * Operates SSB upper/lower sideband, AM & CW
- * Employs heterodyne system to output frequency
- * 10 watts P.E.P.
- * 50-54 mc in four 1 mc segments
- * Built-in VFO or crystal control, VOX and anti-trip circuitry
- * Specially designed for fast, easy assembly



\$189⁹⁵ HX-30

\$99⁹⁵ HA-20

- * 125 watts P.E.P. input SSB, 75 watts DC input AM
- * Neutralized push-pull 6146 final amplifiers
- * Forced-air cooling of final amplifiers
- * Completely shielded RF circuitry
- * Metered grid current, plate current, plate voltage, relative power

A sensational value for the 6-meter amateur! Completely self-contained . . . provides every desired feature for immediate "on-the-air" operation! Also an excellent exciter for the Heathkit HA-20 linear amplifier for higher power capabilities. Features include a "heat-sink" stabilized built-in VFO, special anti-backlash helical gear drive for velvet smooth tuning, audio band-pass filter, balanced modulator, VOX, and anti-trip circuitry and many more! The large illuminated slide-rule dial provides 9 inches of bandspread per 1 megacycle of coverage for fast, easy frequency selection. Two switch-selected crystal positions are provided for net or MARS operation. The phasing method of SSB generation permits operation as smooth as any low band unit!

Kit HX-30, 46 lbs., no money down, \$18 mo. \$189.95

SPECIFICATIONS—Frequency coverage: 50 to 54 mc in four 1 mc segments. (heterodyne crystal for 50 to 51 mc supplied) (coverage can be extended to 49.8 mc by changing second heterodyne crystal). **Emission:** SSB upper/lower, AM & CW. **DC Power input:** 20 watts peak. **RF Power output:** 10 watts P.E.P. SSB, 10 watts CW, 2.5 watts AM. **Carrier suppression:** 50 db or better. **Sideband suppression (unwanted):** 40 db or more. **Circuitry:** Phasing method used to generate SSB signal, heterodyned to desired output frequency. **Output impedance:** 50 to 75 ohm, unbalanced. **Audio frequency response:** 300-3,000 cps. **Keying:** Grid block keying with key click filter. **Tuning knob rate:** Approx. 45 kc per turn. **Power requirements:** 117 volts AC, 50/60 cps, 77 watts standby, 95 watts SSB & CW, 90 watts AM. **Dimensions:** 16 $\frac{1}{2}$ " W x 10 $\frac{1}{2}$ " H x 10" D.

Perfect matching companion for the HX-30 SSB Transmitter! Requires only 2.5 to 10 watts P.E.P. driving power for a full 70 watts P.E.P. output to antenna. Tuned grid input accommodates various levels of driving power and link-coupled RF output permits easy match to 50-75 ohm coaxial line. Also featured is metered grid current, plate current, plate voltage and relative power output; neutralized push-pull 6146 final amplifiers, forced-air cooled for long life and dependable performance; completely shielded RF circuitry; solid state rectifiers for cool efficient operation; regulated screen voltage for high stability, and open circuit layout for easy assembly. Ruggedly built with heavy steel copper-clad cabinet for strength, beauty and superior shielding. The HX-30 transmitter and HA-20 linear together form a superb SSB combination designed for maximum efficiency and operating convenience . . . order now and go SSB on Six!

Kit HA-20, 38 lbs., no money down, \$10 mo. \$99.95

SPECIFICATIONS—Driving power required: 2.5 to 10 watts P.E.P. **Power input:** 125 watts P.E.P. SSB, 75 watts DC, AM. **Power output:** 70 watts P.E.P. SSB. **Output impedance:** 50 to 75 ohm (unbalanced). **Output coupling:** Link. **Input impedance:** Approx. 50 ohm. **Input coupling:** Link (tuned grid). **Panel metering:** Grid current, plate current, plate voltage & relative power output. **Frequency coverage:** 49.8 to 54 mc. **Tube complement:** (2) 6146, (1) OA2. **Cooling:** Forced-air (self-contained fan). **Power requirements:** 90 watts standby, 200 watts max. @ 117 volts AC 50/60 cycles. **Dimensions:** 10 $\frac{1}{2}$ " H x 16 $\frac{1}{2}$ " W x 10" D.

Powerful 2-Way "Walkie Talkies"



Kit Form or
Factory Assembled

Deluxe 9-Transistor "WALKIE-TALKIE" . . . A Deluxe Gift Every CB Fan Wants!

- * Crystal controlled transmitter & superheterodyne receiver
- * Built-in squelch & automatic noise limiter
- * Portable—battery powered
- * 1 to 3 mile operating range
- * Easy circuit board assembly

Superb CB gift! Provides more features, better performance than units selling for twice the price! Sensitive superhet receiver with RF amplifier for long-range reception, squelch and automatic noise limiter functions for crisp, clear communications, high efficiency transmitter for power-packed signals. An exceptional value in CB equipment it operates up to 75 hours on a single 9-volt battery with a range of 1 to 3 miles between similar units, up to 10 miles when used with Class "D" CB units. Features three simple controls, on/off-volume, squelch control and push-to-talk switch. Has accessory antenna jack. Two-tone green aluminum case. Order a pair and save! Less battery. Crystals supplied for one channel (specify).

Kit GW-21, 3 lbs., no money dn., \$5 mo. . . . **\$44.95**
Kit GW-21-2 (pair) 6 lbs. . . . no money
 down, \$9 mo. . . . **\$84.95**
Assembled GWW-21 . . . \$8 mo. . . . **\$71.95**
Assembled GWW-21-2 (pair), \$13 mo. . . . **\$136.50**
GWA-30: Battery Set (2) . . . 1 lb. . . . **\$2.95**

SPECIFICATIONS—Receiver: Crystal-controlled superheterodyne. **Sensitivity:** 1 uv for 10 db s/n ratio. **Transmitter:** Crystal-controlled, any channel 2 to 23 in 11 meter citizens band, (unlicensed). **RF input power:** 100 milliwatt. **Battery:** 9 volt. **Antenna:** 35" whip. **Circuit:** 9 transistor, 2 diode. **Dimensions:** 7 $\frac{1}{2}$ " H x 3 $\frac{3}{4}$ " W x 1 $\frac{1}{2}$ " D.

Low Cost 4-Transistor "WALKIE-TALKIE" . . . Only \$35.00 A Pair!

- * No license, forms, tests or age limit
- * Crystal controlled transmitter—super-regenerative receiver
- * Operates up to 75 hours on built-in battery
- * Small, compact, neatly styled



Kit Form or
Factory Assembled

Here's a "pocket-size" Walkie-Talkie 2-way radio that has an operating range up to a mile between units. Its compact size makes it easy to carry . . . perfect for hunters, fishermen, farmers, etc. A single, 9-volt battery lasts up to 75 hours. Specially designed frequency response offers the maximum in clear, intelligible communications. Simple to build! Kit includes instructions and crystal for one channel (specify). Less battery.

Kit GW-31 . . . 2 lbs. . . . **\$19.95**
Kit GW-31-2 (pair) . . . 4 lbs. no money
 down, \$5 mo. . . . **\$35.00**
Assembled GWW-31 . . . 2 lbs. no
 money down, \$5 mo. . . . **\$29.95**
Assembled GWW-31-2 (pair) . . . 4 lbs.
 no money down, \$6 mo. . . . **\$55.00**
GWA-30: Battery Set (2) . . . 1 lb. . . . **\$2.95**

SPECIFICATIONS—Receiver: Super-regenerative detector. **Sensitivity:** Usable with signals as low as 4 uv at antenna. **Transmitter:** Crystal-controlled, any channel 2 to 23 (unlicensed) in 11 meter citizens band. **RF input power:** 90 milliwatt. **Battery:** 9-volt. **Antenna:** 36" whip. **Circuit:** 4 transistor. **Dimensions:** 5 $\frac{1}{2}$ " H x 3 $\frac{3}{4}$ " W x 1 $\frac{1}{2}$ " D.

For "Man-Size" Performance, Choose This Powerful Heathkit 1-Watt "WALKIE-TALKIE"

GW-52
\$74⁹⁵

- * Includes rechargeable \$20 battery
- * Efficient 10-transistor, 2-diode circuit
- * Up to 3-mile inter-unit communications
- * Crystal-controlled on both transmit & receive
- * Adjustable squelch—automatic noise limiter
- * Built-in 117 VAC battery charger

Slim, trim, rugged and ready to do that big "in-the-field" communications job! That's the powerful 1-Watt Heathkit "Walkie-Talkie". Whether business or pleasure takes you outdoors, the GW-52 provides that "extra-distance" communications link for added fun and function. You'll enjoy solid "loud and clear" communications at ranges up to three miles between units and at even greater distances with an external antenna or class "D" 5-watt CB units.

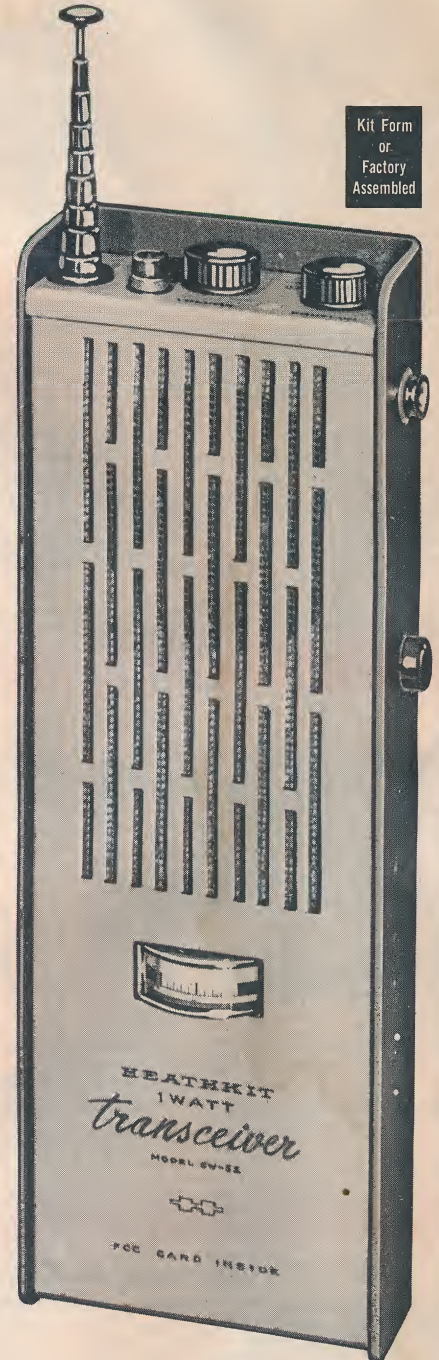
You'll like the way the superheterodyne receiver with RF amplifier pulls in those weak signals with ease. And there's no annoying atmospheric noise during standby thanks to the adjustable squelch control. The automatic noise limiter minimizes ignition and electrical interference to assure you of maximum intelligibility.

There's a heavy-duty, 10-cell rechargeable nickel-cadmium battery to match the "big job" performance of this powerful GW-52. It will outlast conventional batteries many times over providing you with a minimum life of 1500 hours (10% transmit, 90% receive duty) and up to 5000 hours of operation . . . over two years of normal workday use! Truly a tremendous savings in operating costs! A transformer-type charger is built-in for recharging from 117 VAC, and a 6-foot cord with cigarette-lighter plug permits recharging from a 12 volt car battery.

Lightweight and compact, the GW-52 is easy to handle . . . includes a leather shoulder strap and a convenient elastic hand-strap on the back for a firm grip while in use. Handsomely housed in a heavy-gauge, two-tone green aluminum case. Kit is complete with rechargeable battery, power cords, earphone, FCC license pack and crystals for one channel (specify preference).

Kit GW-52 . . . 4 lbs. . . . no money dn., \$8 mo. . . . **\$74.95**
Kit GW-52-2 (pair) . . . 8 lbs. . . . no money dn., \$13 mo. . . . **\$139.95**
Assembled GWW-52 . . . 4 lbs. . . . no money dn., \$12 mo. . . . **\$124.95**
Assembled GWW-52-2 (pair) . . . 8 lbs. . . . no money dn., \$22 mo. . . . **\$234.95**

SPECIFICATIONS—Receiver: Single channel crystal controlled superheterodyne. **Sensitivity:** $\frac{1}{2}$ microvolt for 10 db signal-to-noise ratio. **Selectivity:** 7 kc at 6 db. **Audio power output:** 250 milliwatts. **Transmitter:** Input power to final stage: 1 watt nominal. **Transmitter frequency:** Crystal controlled (any one channel, 1 through 23). **Modulation:** High level AM limited to less than 100%. **Controls:** Off-On-Volume and Squelch. Push-to-talk switch on side of cabinet. **Battery:** 12.5 V. (500 mah rechargeable nickel cadmium; 12 hrs. use per charge). **Battery life:** 1500 hrs. min. 5000 hrs. likely in normal usage. **Charging source:** 117 VAC or 12 VDC. **Total receiver current drain, standby:** Approx. 12 milliamperes. **Total transmitter current drain:** Approx. 135 milliamperes. **Antenna:** 35" whip type, completely collapsible into cabinet, or external. **Crystals:** Subminiature, plug-in type, tolerance .005%. **Speaker-microphone:** 2 $\frac{1}{2}$ " round, permanent magnet type. **Earphone jack:** Miniature-type (earphone supplied). **Transistors and diodes:** 1-2N1726 RF amplifier; 1-2N1727 Converter; 2-T1364 IF amplifier; 3-2N1274 Audio amplifier; 1-R425 Transmitter Oscillator; 1-R424 RF driver; 1-2N2217 RF output; 1-Germanium Diode-Detector; 1-Silicon Diode—Squelch and noise limiter. **Meter:** Indicates battery condition. **Cabinet dimensions:** 10-15/16" H x 3 $\frac{3}{4}$ " W x 1-11/16" D.



Kit Form
or
Factory
Assembled

New SSB Amateur Receiver



SB-300
\$264⁹⁵



Expected Shipping
Date: Nov. 22

First in a Brand New Series . . .

Heathkit SSB RECEIVER!

- * Complete coverage of 80 through 10 meter amateur bands with all crystals furnished, plus provision for VHF converters
- * Crystal-controlled front-end for same tuning rate on all bands
- * 1 kc dial calibrations—100 kc per dial revolution provides band-spread equal to 10 feet per megacycle—tuning knob to dial ratio approximately 4 to 1
- * Provision for transceive operation with matching SB-400 Transmitter (available soon)
- * Prebuilt linear master oscillator (LMO), wiring harness and two heavy-duty circuit boards for fast, easy assembly
- * Professional styling and features at 60% savings

The new SB-300 SSB Receiver is the first in an exciting new series of Heathkit Single-Sideband Amateur Gear! Professional in appearance and in design, the SB-300 now brings you a new dimension in quality features, smooth operation and performance, you never before thought possible in kit form! . . . and you'll save 60% over comparable factory-built receivers by doing the easy assembly yourself!

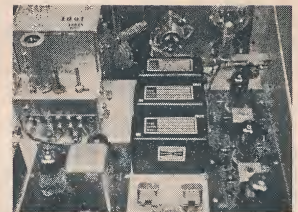
Experienced amateurs especially, will appreciate the careful attention to detail that went into the design of the SB-300. Its many superb features include a crystal-controlled front-end for same rate tuning on all bands, a prebuilt Linear Master Oscillator (LMO) for linear tuning with 1 kc dial calibrations, built-in crystal calibrator, hermetically-sealed 2.1 kc crystal bandpass filter, smooth non-backlash vernier dial mechanism and a beautifully styled cabinet and panel.

Circuitry features include a high frequency I.F. for maximum I.F. and image rejection, audio inverse feedback, fast-slow-off AGC control, stability of 100 cps after warmup, and many more for finest amateur communications results! Perfect for VHF SSB operation with provision made for permanent connection of VHF converters (power, antenna, & AGC leads) which can be switched-in by means of a top-chassis switch (cabinet top opens completely for easy access to all components). Provision is also made for transceive operation using its matching counterpart, the SB-400 SSB Transmitter, which will be available soon! A common BFO crystal will prevent even the most minute frequency shifts between transmitter and receiver when transceiving. Order your SB-300 now for unmatched savings in professional station facilities! Watch for the new SB-200 1 KW Linear Amplifier and SB-100 All-Band SSB Transceiver scheduled in this new series!

Kit SB-300 . . . less speaker, 17 lbs. . . no money dn., \$25 mo. . . \$264.95
 SBA-300-1 Optional CW Crystal Filter . . . 1 lb. . . \$19.95
 SBA-300-2 Optional AM Crystal Filter . . . 1 lb. . . \$19.95



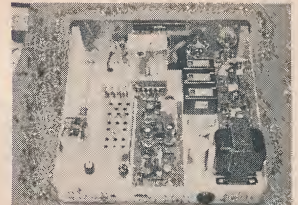
LMO & Dial
Precision-built Linear Master Oscillator (LMO) is completely assembled and calibrated, ready to install; specially designed dial assures accurate readout and smooth control.



Xtal Filter
Prebuilt, hermetically-sealed 2.1 kc crystal bandpass filter for SSB provides the excellent nominal shape-factor of 2:1 (60/6 db). Optional AM & CW filters shown installed.

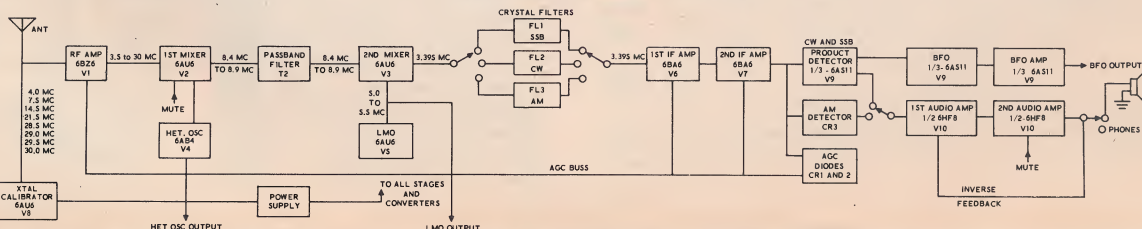


Bottom Chassis
Two heavy-duty 3/32" circuit boards and precut, cabled wiring harness maintain a clean, uncluttered layout for fast, easy assembly, years of faithful performance.



Top Chassis
All adjustments are conveniently made from top of chassis; Chassis screening clearly identifies coil and tube locations, etc. Entire top of ventilated cabinet opens for easy access to all parts.

SPECIFICATIONS—Frequency range (megacycles): 3.5 to 4.0, 7.0 to 7.5, 14.0 to 14.5, 21.0 to 21.5, 28.0 to 28.5, 28.5 to 29.0, 29.0 to 29.5, 29.5 to 30. **Intermediate frequency:** 3.395 megacycles. **Frequency stability:** 100 cps after warmup. **Visual dial accuracy:** Within 200 cps on all bands. **Electrical dial accuracy:** Within 400 cps on all bands. **Backlash:** No more than 50 cps. **Sensitivity:** Less than 1 microvolt for 15 db signal plus noise-to-noise ratio for SSB operation. **Modes of operation:** Switch selected: LSB, USB, CW, AM. **Selectivity:** SSB: 2.1 kc at 6 db down, 5.0 kc at 60 db down (crystal filter supplied). AM: 3.75 kc at 6 db down, 10 kc at 60 db down (crystal filter available as accessory). CW: 400 cps at 6 db down, 2.5 kc at 60 db down (crystal filter available as accessory). **Spurious response:** Image and IF rejection better than 50 db. Internal spurious signals below equivalent antenna input of 1 microvolt. **Audio response:** SSB: 350 to 2450 cps nominal at 6 db, AM: 200 to 3500 cps nominal at 6 db. CW: 800 to 1200 cps nominal at 6 db. **Antenna input impedance:** 50 ohms nominal. **Muting:** Open external ground at Mute socket. **Crystal calibrator:** 100 kc crystal. **Front panel controls:** Main tuning dial; function switch; mode switch; AGC switch; band switch; AF gain control; RF gain control; preselector; phone jack. **Rear apron connections:** Accessory power plug; HF antenna; VHF #1 antenna; VHF #2 antenna; mute; spare; anti-trip; 500 ohm; 8 ohm speaker; line cord socket; heterodyne oscillator output; LMO output; BFO output; VHF converter switch. **Tube complement:** (1) 6BZ6 RF amplifier; (1) 6AU6 Heterodyne mixer; (1) 6AB4 Heterodyne oscillator; (1) 6AU6 LM osc.; (1) 6AU6 LMO mixer; (2) 6BA6 IF amplifier; (1) 6AU6 Crystal calibrator; (1) 6HF8 1st audio, audio output; (1) 6AS11 Product Detector, BFO, BFO Amplifier. **Power supply:** Transformer operated with silicon diode rectifiers. **Power requirements:** 120 volts AC, 50/60 cps, 50 watts. **Dimensions:** 14 1/2" W x 6 1/2" H x 13 3/4" D.



World's Biggest

For a Deluxe CB Gift . . . Choose the Heathkit
"Master Station" TRANSCIVER . . . Most Complete
. . . Most Versatile . . . Greatest Value!



GW-42
\$119⁹⁵

- * 5 Crystal-controlled transmit & receive channels
- * Built-in 3-way power supply
- * Built-in 4-tone selective call circuitry
- * All-channel receiver tuning
- * Tuning meter
- * Adjustable squelch
- * Switchable automatic noise limiter
- * 3 circuit boards

Deluxe throughout, the Heathkit GW-42 brings you the very finest in citizen's band communication facilities and operating convenience! Operates "mobile" or "fixed" with built-in 3-way power supply. Crystal-controlled accuracy, 1/2 microvolt receiver sensitivity, powerful transmitter and many more features are included for crisp, clear communications. Built-in 4-tone selective call circuitry permits individual call of up to four different units operating on each frequency (92 possible combinations) . . . also eliminates unwanted conversations by disconnecting speaker until activated by proper tone signal. Beautifully styled in two-tone brown, mocha raised panel escutcheon, lighted channel selector, tuning meter and lighted slide-rule dial. Easy to assemble too, with 3 circuit boards and precut, cabled wiring harness. Kit is complete with AC & DC power cables, push-to-talk microphone and crystals for one channel (specify frequency). Order now for Christmas CB fun!

Kit GW-42, 23 lbs., no money down, \$11 mo. **\$119.95**
 Assembled GWW-42, 22 lbs., no money down, \$18 mo. **\$189.95**

GENERAL DESCRIPTION—RECEIVER SECTION: 6 tube superheterodyne circuit with RF amplifier, squelch, noise limiter, variable or crystal receiver tuning, tuning meter and built-in tone squelch with four front panel selected tones. **Tuning range:** (Crystal) Up to 5 switch selected channels; (Variable) Tunes all 23 channels. **Intermediate frequency:** 455 kilocycles. **Sensitivity:** 1/2 microvolt or less for a 10 db signal to noise ratio. **Selectivity:** 40 db attenuation with adjacent channel 10 kc away. **TRANSMITTER SECTION:** **Nominal power input to final RF amplifier:** 5 watts. **Frequency control:** 3rd overtone quartz crystal as selected by the 5 position channel selector switch. **Frequency control effectiveness:** Operating frequency will be within .005% of nominal crystal frequency over an ambient temperature range of -20 to +130 degrees F. **Modulation:** AM plate modulation, automatically limited to less than 100%. **Output impedance:** 50-70 ohm. **TONE SQUELCH SECTION:** **Frequency control:** Resonant reed relay; with reeds used for generation of calling tone and frequency selection during monitoring. **Controls:** Volume on/off; Receiver tuning; Channel Selector; Tone Selector, Call switch, Squelch on/off; Noise limiter on/off; Reset time control; Power selector. **Tube complement:** 6CB6, Receiver RF amplifier, 6U8, Triode receiver crystal oscillator, pentode mixer; 6C4, Variable oscillator; 6BJ6, 1st IF amplifier; 6BJ6 2nd IF amplifier; 6BJ7, Detector diode, squelch diode, noise limiter diode; 6AN8, pentode first audio amplifier, triode microphone preamplifier; 6AQ5, Combination audio output/modulator; 6AU8, Triode transmitter oscillator, pentode driver, 6AQ5, RF-final amplifier, 6AN8, Voltage amplifier, cathode follower (tone squelch section); 6C4, Relay control tube (tone squelch section). **Power requirements:** AC at 105-125 volts, 60 cycles, 70 watts; 6VDC at 9 amps; 12VDC at 5 amps. **Dimensions:** 9 1/4" H x 17 1/2" W x 10 1/2" D.



Your Best Buy in CB Transceivers . . .
Deluxe Features at an Economy Price

GW-22A
\$59⁹⁵

- * 5 crystal-controlled transmit & receive channels
- * Superhet receiver with RF stage
- * Built-in squelch & automatic noise limiter
- * Optional tone squelch selective-call circuitry



An outstanding value for the serious CB user! Employs latest design features for long range communications. Improved push-to-talk circuitry eliminates need for relay. Optional selective-call circuitry in the GW-32 models give added versatility and enjoyment in CB operations. This feature permits individual calling of up to four different units operating on the same channel frequency, eliminates unwanted CB conversations, stops speaker hiss and noise during standby. Attractively styled in two-tone brown with anodized trim. Crystals supplied for one channel (Specify). Order now for Christmas!

Kit GW-22A (120 v. ac) Without Selective-Call. 14 lbs., \$7 mo. . . . **\$59.95**
 Assembled GWW-22A (120 v. ac). 13 lbs., \$9 mo. **\$89.95**
 Kit GW-22D (6 or 12 v. dc) Without Selective-Call. 14 lbs., \$7 mo. . . . **\$64.95**
 Assembled GWW-22D (6 or 12 v. dc) 14 lbs., \$10 mo. **\$94.95**
 Kit GW-32A (120 v. ac) With built-in Selective-Call. 15 lbs., \$9 mo. . . . **\$84.95**
 Assembled GWW-32A (120 v. ac), 14 lbs., \$11 mo. **\$119.95**
 Kit GW-32D (6 or 12 v. dc) With built-in Selective-Call. 15 lbs., no money down, \$9 mo. **\$89.95**
 Assembled GWW-32D (6 or 12 v. dc). 14 lbs., \$12 mo. **\$124.95**

GENERAL DESCRIPTION—Receiver: 5-tube superheterodyne with RF stage, crystal-controlled, on up to 5 of the 23 channels as determined by the particular crystal(s) installed. **Sensitivity:** 1/2 microvolt for a 10 db signal-to-noise ratio. **Transmitter:** Power input to final RF amplifier, nominal 5 watts. **Power Requirements:** GW-32A—120 volts, 50/60 cps AC, 50 watts; GW-32D—6 1/2 volts DC, 8.0 amps, 13 volts DC, 4.5 amps. **Dimensions:** 9 1/4" D x 6 1/4" H x 9 1/2" W.

LOWEST COST! Mobile & Fixed Station System with Accessories . . .
Save \$11.85 . . . Only \$99.95

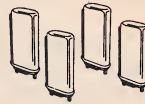
Mobile Station Kit GW-12D
 Reg. \$44.95

Fixed Station Kit GW-12A
 Reg. \$39.95

COMPLETE PACKAGE

\$99⁹⁵

Save \$11.85
 Order # CBS-1, 36 lbs.



Four crystals included, two for each transceiver

New Fiberglass Mobile Antenna included (Model GY-12)
 Reg. \$8.95

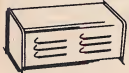


15' Coax cable for Mobile Antenna
 50' Coax cable for Fixed Antenna

Two Push-To-Talk Microphones Included



Ground-Plane Fixed Station Antenna Included (Model CBF-1) Reg. \$17.95



DC Power Supply for Mobile Operation Included with GW-12D

BIGGEST VALUE! 5 Channel Mobile & Fixed Station System with Selective-Call . . . Save \$17.85 . . . Just \$149.95

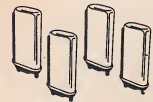
Mobile Station Kit GW-32D
 Reg. \$89.95

Fixed Station Kit GW-32A
 Reg. \$84.95

COMPLETE CB PACKAGE

\$194⁹⁵

Save \$17.85
 from reg. price
 Order #CBS-2, 43 lbs.



Four Crystals Included, two for each transceiver

Two Push-To-Talk Microphones Included



15' Coax cable for Mobile Antenna
 50' Coax cable for Fixed Antenna

"Fixed" Coaxial Antenna included (Model GY-11, Reg. \$21.95)

Gifts For The "Budding" Amateur

Novice Ham Band RECEIVER . . .

An Excellent Gift!



HR-10
\$79⁹⁵

* Features amateur band coverage only for maximum accuracy and stability * Tunes SSB, AM & CW signals 80 through 10 meters * Pre-built, prealigned coil/bandswitch assembly * 7-tube superheterodyne circuit * Style-mate to DX-60 Transmitter

A gift any radio amateur would be proud to own! The Heathkit HR-10 is an ideal first receiver and an excellent standby rig for the advanced amateur. Offering amateur band coverage only, for maximum performance where it counts, the HR-10 features a seven-tube superheterodyne circuit with an RF stage for high sensitivity and a half-lattice crystal filter for excellent selectivity. Carefully designed diode detector and beat-frequency-oscillator circuitry assure the fine AM, CW, or SSB reception that adds greatly to the fascinating hobby of amateur radio.

Tuning is easy with the large, easy-to-read slide-rule dial and built-in "S" meter. The dial calibration control assures accurate settings at all times with the optional plug-in 100 kc crystal calibrator. Versatile panel controls include antenna trimmer, bandswitch, tuning, BFO tuning, RF gain, AF gain, BFO on/off, AVC on/off and ANL on/off. 8-ohm speaker jack and accessory socket on rear apron.

Kit HR-10 . . . 20 lbs. . . . no money dn., \$8 mo. \$79.95
Kit HRA-10-1, Plug-in 100 kc crystal calibrator. 1 lb. \$8.95

SPECIFICATIONS—Frequency coverage: 80 through 10 meters. IF frequency: 1681 kc. Sensitivity: 1 uv for 10 db signal-to-noise ratio. Image rejection: 40 db or better. Selectivity: 3 kc at 6 db, 9 kc at 40 db. Input impedance: 50 to 75 ohm coaxial. Audio output impedance: 8 or 500 ohm. Tube complement: 6BZ6, (2) 6EA8, 6BA6, 6BJ7, 6EB8, 6X4. Power requirements: 117 volts AC, 50/60 cycles, 50 watts. Dimensions: 13 1/2" W x 11 1/2" D x 6 1/2" H.

DX-60 Phone & CW TRANSMITTER . . .

A Gift He Will Treasure for Years to Come!



DX-60
\$79⁹⁵

* 90-watts Phone or CW—80 through 10 meters * Neutralized 6146 final amplifier * Built-in low pass filter * Grid block keying * Easy access to crystal sockets * Beautifully designed throughout for easy assembly

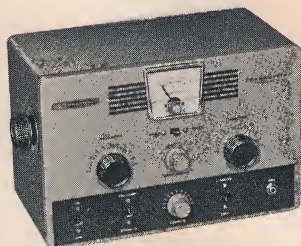
The many features incorporated in this superbly designed unit offer performance and dependability unmatched at this price anywhere! Its versatility will keep it an active operating station facility for years to come. Top quality components, clean, rugged construction and thoughtful circuit layout make it an ideal first transmitter for the novice. All parts are easily identified and a precut, cabled wiring harness eliminates long, tedious wiring. Easy to operate too, with neat, functional panel layout of controls. Features include a low-pass filter for harmonic suppression, neutralized final for high stability, and grid block keying for excellent keying characteristics. A front panel switch selects any of four crystal positions or an external VFO. Single knob band-switching and pi-network output coupling provide complete operating convenience. Panel meter indicates final grid or plate current aid in tuning. May be run at reduced power for novice operation. Less crystals.

Kit DX-60 . . . 24 lbs. . . . no money dn., \$8 mo. \$79.95

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: 105-125 V 50/60. Dimensions: 13 1/2" W x 11 1/2" D x 6 1/2" H.

A Special Gift for the CW Amateur . . .

Heathkit HX-11 CW TRANSMITTER



HX-11
\$43⁵⁰

- * 50-watt plate power input
- * Built-in low pass filter
- * Neutralized final amplifier
- * Single-knob bandswitching

An outstanding transmitter for CW work! Efficient circuitry covers 80 through 10 meters. Husky power supply, switched antenna relay power, pi-network output coupling and panel meter for easy tuning also featured. Easy access to crystal socket.

Kit HX-11, 18 lbs., no money down, \$5 mo. \$43.50

SPECIFICATIONS—RF power input: 50 watts CW. Output impedance: 50-600 ohm (non-reactive). Output coupling: Pi network. Operation: Crystal—external VFO. Low pass filter cutoff frequency: 34 MC. Band coverage: 80, 40, 20, 15, 10 meters. Tube complement: 6U4GB rectifier, 6CL6 oscillator, 6DQ6A final amplifier. Power requirements: 117 volts AC, 60 cycles, 150 watts. Dimensions: 13" W x 8 1/2" H x 7" D.

Learn Amateur Radio This Easy, Low-cost Way

* 4 ARRL Handbooks, "Gateway To Amateur Radio"

* Set of three special code records

* Code practice oscillator with key

HDP-22
\$15⁹⁵

Anyone wishing to become an FCC licensed radio amateur will find the materials and components of this specially selected group an outstanding introduction to amateur radio. The course consists of four American Radio Relay League (ARRL) handbooks: How to Become a Radio Amateur; Learning the Radio-Telegraph Code; Radio Amateur's License Manual; and Operating an Amateur Radio Station. Also included is a set of three special records using the revolutionary new "word method" of teaching code, and a Heathkit CO-1 Code Practice Oscillator with authentic telegraph key to enhance the learning process.

HDP-22, Amateur Radio Starter Group . . . 7 lbs. . . . Save \$3.00. . . \$15.95
HDP-32, Code Records . . . 2 lbs. \$9.50
HDP-42, ARRL Books (4) . . . 1 lb. \$1.50
CO-1, Oscillator plus Key . . . 2 lbs. \$7.95



Value CB Line



Give Your Boat the Convenient Gift of 2-Way CITIZEN'S BAND RADIO . . . It's Especially Designed

- * RF stage for long-distance reception
- * Efficient transmitter circuitry for extra range
- * 5 crystal-controlled transmit/receive channels
- * Variable receiver tuning of all channels
- * Switched crystal filter for greater selectivity
- * 3-way power supply—6 or 12 VDC or 117 VAC

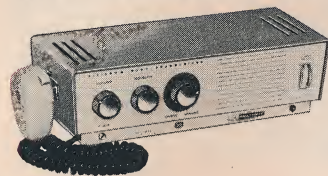
Put this handsome new Citizen's Band Transceiver aboard. The MW-33 features a 3-way power supply which permits operation from 6 or 12 volt batteries or from standard 117 volt AC household current to enable you to use it anywhere!

Compare these extra-performance features: 5 crystal-controlled transmitting and receiving channels plus variable receiver tuning; maximum allowable input of 5 watts for extra communications range; the receiver circuit employs an RF amplifier stage for greater sensitivity; adjustable receiver squelch and automatic noise limiter circuitry assure quiet, clear communications; the half-lattice crystal filter with on-off switch provides greater adjacent channel selectivity; a built-in low pass filter reduces the possibility of television interference; the built-in tuning meter automatically switches from transmitter to receiver; improved push-to-talk all-electronic circuitry eliminates the need of a relay; external speaker jack provided. Includes a push-to-talk microphone, AC & DC power cables, and crystals for one channel (specify).

Add this new Heathkit for better 2-way radio this winter.

Kit MW-33, 19 lbs., no money down, \$9 mo. **\$89.95**

The Gift Thousands are Enjoying . . . Why Not You?



\$69.95

GW-11A

Choose the Famous GW-11 Now!

- * 3 crystal-controlled transmit & receive channels
- * Crystal-controlled or variable receiver tuning
- * Automatic noise limiter
- * Adjustable squelch
- * Tuning Meter
- * PTT Microphone

CB favorite! Sensitive superhet. receiver; extra transmitter stage for increased output; improved PTT circuitry which eliminates costly, troublesome relays; low profile styling in beige & mocha; complete with microphone and crystals for one channel (specify).

Kit GW-11A (120 v. ac), 13 lbs., no money down, \$7 mo. **\$69.95**

Assembled GWW-11A (120 v. ac), 12 lbs., \$10 mo. **\$99.95**

Kit GW-11D (6 or 12 v. dc) . . . no money down, \$7 mo. **\$69.95**

Assembled GWW-11D (6 or 12 v. dc) 13 lbs. \$11 mo. **\$104.95**

GENERAL DESCRIPTION—Receiver sensitivity: 1 uv signal at antenna input produces 10 db signal to noise ratio. **Transmitter section:** Power input to final RF amplifier; nominal 5 watts. **Power requirements:** 120 v. AC version, 55 watts; 6.5 v. DC version, 10 amps; 13 v. DC version, 6 amps. **Dimensions:** 4½" H x 15" W x 5¼" D.

Big Value CB Transceiver . . . Low Cost Gift Idea!

- * One channel crystal controlled transmitter & receiver
- * Sensitive superhet. circuit
- * Built-in squelch & noise limiter
- * Convenient PTT microphone

\$39.95

GW-12A



No frills, no gimmicks . . . just solid one-channel CB communications facilities in one low cost package. Ideal for mobile fleets where just one channel is desired (no missed calls or unnecessary usage). AC power supply is built-in and provision is made for plug-in accessory DC power supply. Color-styled in handsome two-tone brown. Easy to build kit includes push-to-talk microphone and crystals (specify channel number desired). Order these best-buy CB units now!

Kit GW-12A (AC only) 10 lbs. . . . no money down, \$5 mo. **\$39.95**

Assembled GWW-12A (AC only) 10 lbs., no money down, \$7 mo. **\$69.95**

Kit GW-12D (AC & DC) 13 lbs. . . . no money down, \$5 mo. **\$44.95**

Assembled GWW-12D (AC & DC) 12 lbs., no money down, \$8 mo. **\$74.95**

Assembled GWW-12D (AC & DC) 12 lbs., no money down, \$8 mo. **\$74.95**

GENERAL DESCRIPTION—Receiver sensitivity: 1 uv signal at antenna input produces 10 db signal to noise ratio. **Transmitter section:** power input to final RF amplifier; does not exceed 5 watts. **Power requirements:** 120 v. AC operation, 50 watts; 6½v. DC, 8 amps; 13 v. DC, 4 amps. **Dimensions:** 5¾" H x 8¾" W x 8" D. with GWA-12-1.

Give your CB Rig this Convenient Selective-Calling Gift

One GD-162 with each of your CB transceivers provides complete selective calling capability on both transmit and receive. Four different tone signals permit individual call of up to four units operating on each frequency . . . 92 possible combinations. Once installed, the CB units in your system will remain silent until actuated by the proper tone signal to which they are tuned. 6 lbs.

Kit GD-162A (AC) . . . no money down, \$5 mo. **\$33.95**

Kit GD-162D (DC) . . . no money down, \$5 mo. **\$33.95**

Assembled GDW-162A (AC) . . . \$6 mo. **\$55.95**

Assembled GDW-162D (DC) . . . \$6 mo. **\$55.95**



SPECIFICATIONS—Power requirements: AC version; 15 watts. DC version; 6V—2 amps; 12V—1.25 amps. **Controls:** input and output level controls permit use with a wide variety of transceiver designs. A "Reset Time" control permits variations in "Speaker on" time after a tone is received. **Dimensions:** 6¼" W x 4¼" H x 6¼" D.

to Match Heathkit Marine Gear



MW-33 **\$89.95**

SPECIFICATIONS—RECEIVER SECTION: Sensitivity: ½ microvolt for 12 db S/N ratio. **Selectivity:** 3 db down @ 4 kc; 40 db down @ 6 kc. **Intermediate frequency:** 455 kc. **Tuning range:** Crystal, 5 channels; Variable, all 23 channels. **TRANSMITTER SECTION: Nominal power input:** 5 watts. **Transmit channels:** 5, crystal controlled. **Modulation:** High level AM limited to less than 100%. **Output impedance:** 50-70 ohm. **Tube complement:** 6BZ6, RF amplifier; 6U8, Triode crystal oscillator pentode mixer; 6U8, IF amplifier; 6AL5, Squelch, ANL; 6AN8, Pentode audio driver, triode mike amplifier; 6AQ5, Audio output & modulator; 6AU8, Transmitter oscillator & buffer; 5763, RF final; 6AT6, Receiver variable oscillator. **Power requirements:** 110 VAC @ 70 watts; 12 VDC @ 5 amps; 6 VDC @ 10 amps.



Big-Value CB Accessories

A Model GY-12 Cowl Mount Mobile Antenna, 2 lbs. \$8.95
48" fiberglass whip. Patented rocker support for 8-point ground. Complete with 15' RG-58U cable and connector.

B Model GDP-673 Antenna Specialists M-81 Base Station CB Antenna . . . \$24.87
11 lbs. Net \$24.87
5-section, end-fed, ½ wave CB antenna. Heavy walled, aluminum tubing. Four radials provide RF decoupling. Gives 6 db gain over other single element types. High "Q" phasing transformer, 50' RG-58U cable and mounting bracket included.

C Model GY-21 Ball Mount Mobile Antenna, 6 lbs. \$15.95
Two section 102" stainless steel whip with cadmium plated spring base and swivel ball mount. 20' RG-58AU cable.

D Model CBF-1 Ground Plane Antenna . . . 7 lbs. \$17.95
Non-directional ½ wave antenna measuring 9'4" from bracket bottom to radiator top. Includes 50' RG-58AU cable and clamp.

E Model GY-11 Vertical Coaxial Antenna . . . 7 lbs. \$21.95
Omni-directional 18' half-wave antenna (2-section 9' aluminum rod top, 2-section 9' aluminum skirt, 2" diam.). Mounts on a 12' length of ¾" IPS pipe (not supplied). Includes 50' RG-58AU cable and connectors. Has low radiation angle and low swr.

F Model GH-12 Microphone . . . 2 lbs. \$6.95
Push-to-talk type with tailored response for crisp communications. Complete with coiled cable, less connector.

Extra Transmitter & Receiver Crystals . . . 1 lb. ea. \$2.95
Specify Heathkit model used, channel No. desired (1-23 plus new CAP freq.), and whether for receiver or transmitter use. Specify 1st and 2nd choice of channel. When ordering for several units, specify each.

ATTENTION CAP MEMBERS
All Heathkit CB transceivers may be realigned for crystal controlled operation on the new CAP frequency of 26.820 mc, using standard manual procedure. We stock these crystals at regular prices; just specify crystals for "CAP CB frequency" when ordering. Check the GW-12 opposite, it makes an ideal second transceiver for CAP.

EASY TIME PAYMENTS

Pay for your CB rig while you are on the air. Order the units you want now . . . no money down . . . up to 18 months to pay . . . see details on the order blank.

The Heathkit "Profile" 3-Way Speaker System . . . Slim in Size and Price

- * Installs on wall, shelf, or floor
- * 3-speaker system—tube-tuned bass reflex
- * Compact . . . only 5" deep
- * "Big Sound" Hi-Fi performance



Expected Shipping Date Dec. 15.



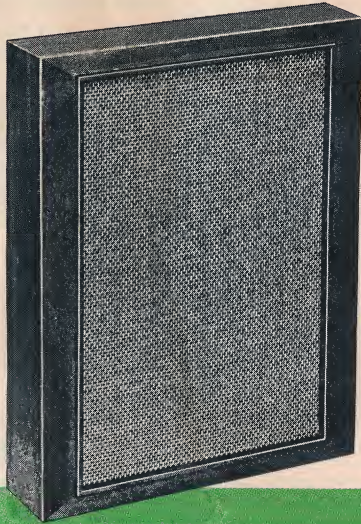
New! Heathkit 3-Speaker, 2-Way Speaker System

- * 3-speakers . . . 5 3/4" woofer and 2-3" tweeters
- * Compact . . . ideal for wall, shelf, table installation
- * 65-14,000 cps frequency response
- * Factory assembled cabinets

A "Tried & True" Performer enjoyed by thousands . . . Heathkit 2-Way Hi-Fi Speaker System



- * 8" woofer
- * Compression-type horn tweeter
- * Built-in crossover network
- * Factory assembled cabinets



AS-22W
\$54⁹⁵

Enjoy a truly "big speaker" sound that will please the most discriminating ear from a miniature speaker that takes only a minimum of space on table, wall, or shelf. Has a specially designed 5 3/4" woofer and two 3" tweeters to give you a smooth wide range (65-14,000 cps) sound. Factory assembled cabinets are available in either walnut or unfinished hardwood. Solves a host of hi-fi installation problems easily.

Kit AS-193U, unfinished, 12 lbs. **\$22.50**
Kit AS-193W, walnut, 12 lbs. no money dn., \$5 mo. **\$24.95**

SPECIFICATIONS—Impedance: May be used with amplifiers having 4, 8, or 16 ohm output. **Frequency range:** 65-14,000 cps. **Crossover frequency:** 4,000 cps. **Speaker power rating:** 6 watts. Higher rated amplifiers, adjusted for reasonable listening levels, may be used. Adequate room sound with 1 watt to speaker, **Nom. woofer size:** 5 3/4" Dia. **Dimensions:** 12 3/4" H x 15 3/4" W x 2 3/4" D.

Thousands have purchased this fine speaker system . . . check its specifications and price and you'll see why! Rotable tweeter mounting board provides proper wide dispersion angle. Speaker impedance is 16 ohms, and power rating is 25 watts . . . can be used with hi-fi amplifiers having as little as 3 watts output! Can be installed either vertically or horizontally.

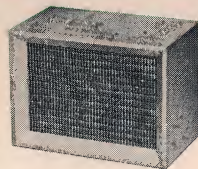
Kit AS-51U, unfinished, 28 lbs., no money dn., \$5 mo. **\$39.95**
Kit AS-51W, walnut, 28 lbs., no money dn., \$5 mo. **\$46.95**

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. **Dimensions:** 11 1/2" H x 23" W x 1 1/2" D.

Here's what every superior high-fidelity amplifier hopes it gets for Christmas . . . "Profile" . . . the slim, trim new Heathkit 3-way speaker system. Just 5 inches deep, it fits anywhere! Stand it on the floor, set it vertically or horizontally on table or bookshelf, or even hang it like a picture on the wall! Versatile in performance too! Uses 10" woofer of special inverted design, plus 6" mid-range and 3 1/2" tweeter with closed backs for perfectly balanced, natural sound. Factory assembled cabinets in finished walnut or unfinished whitewood. 35 lbs.

Kit AS-22U, unfinished, \$5 mo. **\$49.95**
Kit AS-22W, walnut, \$6 mo. **\$54.95**

Specifications—Frequency response: ±5 db, 55 to 12,500 cps. **Crossover frequency:** 2250 cps. **Recommended amplifier power:** 10 to 25 watts. **Nominal impedance:** 8 ohms. **Woofer:** 10" special inverted design, 1.1 lb. Alnico V magnet. **Mid-range:** 6" closed back, 2.16 oz. Alnico V magnet. **Tweeter:** 3 1/2" closed back, 2.15 oz. Alnico 5 magnet. **Cabinet:** bass reflex, tube-tuned, factory assembled of 3/4" furniture grade plywood. **Dimensions:** 19 1/2" W x 25" H x 5" D.



Lowest Cost Wide Range Speaker System

- * 6" x 9" extended range dual-cone speaker
- * Factory assembled walnut or unfinished cabinets
- * 70-16,000 cps response

Use this low-cost speaker system in a variety of ways . . . as an economy speaker for an extra music system . . . as an extension speaker . . . or as a center fill-in speaker for a stereo system. It has surprising response and good power handling capability. Easy to build, just install the speaker in the assembled cabinet and connect the two leads. 8 lbs.

Kit AS-41U, unfinished **\$10.95**
Kit AS-41W, walnut finish **\$12.95**

SPECIFICATIONS—Frequency response: 70 to 16,000 cps. **Impedance:** 8 ohms. **Capacity:** 12 watts. **Enclosure:** Rear vented box. **Speaker:** 6" x 9" extended range dual cone, 6.8 oz. Alnico 5 magnet. **Cabinet:** Factory assembled, furniture-grade 1/2" plywood. **Dimensions:** 8" H x 11" W x 6 1/2" D.



World's Smallest Two-Speaker System

- * Special woofer
- * 3" tweeter
- * Factory assembled cabinet in walnut, or unfinished

Engineered for wide-range response from a very small enclosure, this miniature system uses a high-compliance woofer with mass-loaded cone carefully matched to the cabinet for unusual bass response, plus a 3" closed-back tweeter. Easy to build with assembled cabinet. 8 lbs.

Kit AS-81U, unfinished **\$17.50**
Kit AS-81W, walnut **\$19.95**

SPECIFICATIONS—Frequency response: ±5 db, 70 to 14,000 cps. **Impedance:** 8 ohms. **Capacity:** 6 watts. **Enclosure:** Infinite baffle. **Speakers:** Woofer, 5 1/2" mass-loaded cone, 10 oz. Syntox 6 magnet; Tweeter, 3" cone-type, .53 oz. Alnico 5 magnet. **Crossover:** Capacitive, 4000 cps. **Cabinet:** Factory assembled, furniture-grade 1/2" plywood. **Dimensions:** 6 1/2" H x 10 3/4" W x 6-3/16" D.

For Relaxed, Private Listening, Choose One Of These "Professional" Headsets!



A Jensen HS-1L Stereo Headset

Professional! Special design, matched moving coil units with fluid damping. Lightweight nylon cases. Contoured cushions. Stainless steel yokes. 2 lbs.

Model ADP-82 **\$22.50**

SPECIFICATIONS—Drivers: High-compliance, curvilinear, moisture resistant diaphragm. Aluminum voice coil, sintered magnetic circuit with efficient Alnico magnet. **Frequency range:** 20-15,000 cycles. **Power requirements:** Comfortable listening with 1/10 milliwatt. **Impedance:** 8-ohms each channel (may be connected to 4, 8, or 16 ohm amplifier outputs). **Sensitivity:** 95 db sound pressure level for 1 milliwatt input. **Connectors:** Spade terminals. **Cord:** 4-wire cable, 8 ft. long.

B Telex ST-11 Stereo Headset

Special design for wide-range reproduction and improved bass. Lightweight. Comfortable foam rubber muff with deep cavity design. Stainless steel headband and yokes. 2 lbs.

Model ADP-92 **\$23.92**

SPECIFICATIONS—Driver element: Dynamic. **Sensitivity:** better than 95 db. **Frequency response:** 16 to 15,000 cps. **Impedance:** 8 ohms for use with 3 to 16 ohm sources. **Power input:** 15 milliwatts, 1 watt maximum. **Cord:** 4-wire 12 ft. long with spade terminals. **Color:** Tan and brown.

C New! Roanwell Stereo Hi-Fi Headset

New and improved for better bass response. Thicker cushions and 4 more feet of cord. Identical driver units used in manned space flights. 4-wire design eliminates phasing problems.

Model ADP-102A, 2 lbs. no money dn., \$5 mo. **\$37.50**

SPECIFICATIONS—Drivers: Moving coil, dynamic. **Sensitivity:** 110 db, ref. .0002 dynes/cm², for 100 mw. **Frequency response:** 10-18,000 cycles. **Distortion:** Less than 1% with 100 milliwatt input. **Impedance:** 20 ohms. **Connectors:** Spade terminals. **Cord:** 4-wire cable, 20 ft. long.

D New! Stereo Headphone Control Box

Switch from speakers to headphones without leaving your chair. Connects to any amplifier and accommodates "any impedance" headset. Allows separate control of two headphone sets, plus individual volume adjustment for each ear. Has 15' of cable and is simple to build. Compact . . . measures 3" W x 6" D x 3 1/4" H.

Kit AC-13, 2 lbs. **\$9.95**

Expected Shipping Date Dec. 15.

For Extra Boating Fun, Choose "Best-Buy"

Deluxe 70-Watt RADIOTELEPHONE . . . Extra Power . . . Extra Range . . . Extra Savings



\$269⁹⁵ MWW-23

* **Factory assembled and tuned, ready to install** * **5 crystal-controlled transmit and receive channels** * **8-transistor receiver tunes 2-3 mc band plus standard broadcast** * **Powerful 70-watt long-range transmitter** * **FCC type accepted and approved for "party" boat use**

Mariners everywhere will find the new Heathkit MWW-23 a faithful servant in every sense of the word! . . . providing shipboard broadcast radio entertainment, latest weather reports, emergency distress communications or just general communications to "keep-in-touch"! Its many advanced design features with powerful 70-watt transmitter and sensitive 8-transistor receiver bring you crisp, clear communications over an extended range for extra safety on long cruises. Fresh, modern styling in white, gray & black with blue accents, complement marine decor for a very smart appearance. Simple controls with push-to-talk microphone afford the utmost in operating convenience. It can even be used as an 8-watt deck-hailer or PA amplifier on large craft. 2182 and 2638 kc crystals (ship-to-ship & distress channels) are furnished. Built-in heavy-duty power supply operates from 12v. DC source. FCC type accepted. Approved for "party boat" use.

- Assembled MWW-23, 28 lbs.** no money down, \$25 mo. **\$269.95**
- Extra transmitter & receiver crystals,** specify frequency **each \$2.95**
- MDP-13, 18' Fiberglass Antenna for above,** 15 lbs. no money down, \$6 mo. **\$59.95**



SPECIFICATIONS—Frequency range: 2-3 mc. **Broadcast:** 550-1600 kc. **Receiver sensitivity:** (providing 10 DB S/N ratio or better). Marine channels; 2 microvolts. Broadcast; 20 microvolts. **Audio output:** 3 watts to internal speaker, 8 watts to PA "deckcall". **Transistor complement:** (1) T1363 Mixer; (1) T1364 Oscillator; (2) T1364, I.F.'s; (1) 2N1274 1st Audio; (1) 2N301 Driver; (2) 2N1147 Audio Output and Modulator; (5) Diodes, noise limiter, squelch, detector and AVC overload. **TRANSMITTER: RF Input:** 70 watts. **RF output:** 35 W, min. **Transmitter tube complement:** (1) 6BA8 Oscillator and Buffer (1) 12DQ6A Final Amplifier. **Power requirements:** 12 volts DC, Receiver only; 0.9 amp.; Standby; 2.1 amp.; Transmit; 13 amps. **Dimensions:** 7" H x 10" W 13" D.

25-Watt RADIOTELEPHONE . . . Specially Designed for Outboard-Powered Craft!



MWW-13
\$164⁹⁵



* **Choose complete system for owner installation or separate unit** * **Covers 2-3 mc Marine and Standard Broadcast bands** * **Four marine channels** * **10-transistor, 5-diode, 3-tube circuit** * **Built-in heavy duty transistor power supply** * **FCC type accepted** * **Ideal for outboard cruisers & runabouts** * **Factory assembled, ready to install**

The new Heathkit MWW-13 Radiotelephone is ideal for the communications requirements of outboard motor powered cruisers and runabouts. It features a 25-watt transmitter, dependable 8-transistor receiver, 4 crystal-controlled transmit & receive channels, built-in heavy-duty transistor power supply, circuit breaker protection, low battery drain . . . all factory assembled and tested! And to make it even easier, the complete system, MWW-13S, includes the radiotelephone, antenna, and connecting cables. All pretuned for installation using an outboard motor as the ground system . . . just connect a battery and use; no technician checkout required! 2182 & 2638 kc crystals and push-to-talk microphone supplied. Styled in white & black. For reliable communications plus broadcast entertainment, put the low cost MWW-13 aboard now!

Assembled MWW-13-S; Complete pre-tuned system for do-it-yourself outboard installation only; includes radio-telephone, mounting bracket, 13' antenna, all cables, 2182 & 2638 kc crystals, push-to-talk microphone, FCC license pack, and full instructions; 19 lbs., no money down, \$18 mo. **\$189.95**

Assembled MWW-13; for licensed technician installation; includes radiotelephone, microphone, bracket, ground wire, 2182 & 2638 kc transmit and receive crystals, license pack, and instructions; 16 lbs., no money down, \$16 mo. **\$164.95**

Extra transmitter or receiver crystals; (specify two additional frequencies when ordering pre-tuned set) each crystal **\$2.95**

MDP-93, matching antenna for MWW-13, 5 lbs., no money down, \$5 mo. **\$34.95**

MDP-103, swivel lay-down bracket for MDP-93, 1 lb. **\$9.95**



SPECIFICATIONS—Frequency range: 2-3 mc. **Broadcast:** 550-1600 kc. **Receiver sensitivity for 10 DB S/N ratio:** Marine—3 microvolts. Broadcast—20 microvolts. **Audio output:** 3 watts to internal speaker. **Transistor complement:** (1) T1363 Mixer; (1) T1364 Oscillator; (2) T1364 I.F.'s; (1) 2N1274 First Audio; (3) R-265 Audio Driver and Power Converters; (2) 2N301 Audio Output and Modulator; (5) diodes, AVC overload, Squelch, Noise Limiter, and Detector. **Transmitter RF Input:** 25 watts. **RF output:** 13 watts. **Transmitter tube complement:** (1) 6AK6 Oscillator; (2) 6AQ5 RF amp. **Power requirements:** 12 V DC, receiver only, .350 amps.; Standby 1.2 amps.; Transmit 5 amps. **Dimensions:** 8 1/4" W x 10 1/2" L x 4 1/2" H.

Bernz-O-Matic Portable Refrigerators



Enjoy the luxury of cold beverages and safely stored foods no matter where you are. Completely silent, this maintenance-free unit has no moving parts; it uses a self-contained absorption type cooling system, hermetically sealed; maintains a temperature 50° below the outside ambient temp. The high impact molded plastic case has modern foam insulation; weighs just 18 lbs.; measures just

14 3/4" L x 12 1/4" W x 13 1/4" H. Holds 15 lbs. of your favorite food or beverage. Power requirements: 12 v. battery @ 3.7 amps (equivalent to auto parking lights) or 110 v. AC. Comes complete with 2 cords, one 12' to plug into auto cigarette lighter, and one 6' for 110 v. AC outlet. U.L. approved. Warranted for 3 years!

- MDP-23, 21 lbs., \$64.95 mfrs. list,** no money down, \$5 mo. **Net \$49.95**
- MDP-143, 45 lb. capacity refrigerator, 55 lbs.,** no money down, \$10 mo. **\$94.70**

Hail-R-Horn Megaphone



MDP-133
\$23⁹⁵

Ideal for skippers, coaches, foremen. Specially designed frequency response gives clear voice projection over wide distances. Push-pull 2-transistor power amp. 8-watts peak. Handy trigger switch. Housed in hi-impact plastic case. Operates on 6 standard "C" flashlight batteries (not included). Not a kit . . . ready to use. 6 lbs.

MDP-133 \$23.95

Electro-Voice Deck Speaker



MDP-113
\$15⁸⁸

Weatherproof, unbreakable beige plastic horn projector with "any angle" swivel mount. Ideal for use with Radiotelephone for monitoring of receiver or hailing purposes. 8 ohm PM speaker. Response is 400-13,000 cps for clear signals. 7 1/2 watt power rating.

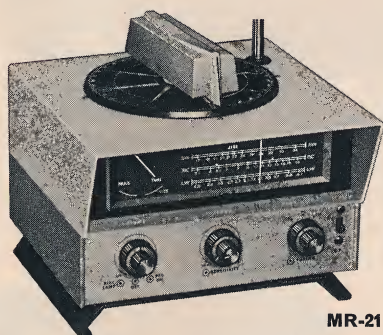
MDP-113, 3 lbs., mfrs. list \$27. \$15.88

Heathkit Marine Gear This Xmas!



Your Personal "Navigator" . . . Always Ready . . . 3-Band All-Transistor RADIO DIRECTION FINDER

- * Covers beacon/consolan, broadcast, and marine telephone bands
- * 10-transistor, 1-diode circuit
- * Built-in battery power supply
- * Factory built, aligned, and tested tuning unit for easy assembly



MR-21
\$109⁹⁵

Kit Form or
Factory Assembled

Here's the unit that can tell you where you are . . . provide latest weather reports . . . and entertain the crew! The 3-band Heathkit RDF is always ready with its dependable flashlight battery power supply, big 6½" compass rose, special "sense" antenna system to eliminate double nulls, built-in BFO for Consolan and CW signals, null and tuning meter, and lighted dial. Build it now, put it aboard, and cruise with peace of mind this season. Less batteries.

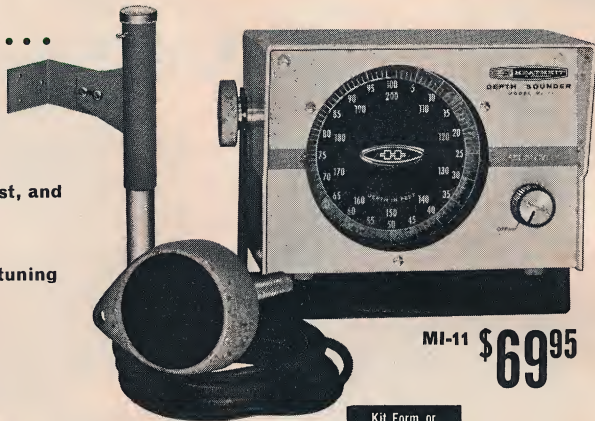
Kit MR-21, 14 lbs., no money down,
\$11 mo. **\$109.95**
Assembled MRW-21, \$14 mo. **\$149.95**

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, 40 uv/meter; Beacon band, 120 uv/meter; Marine band, 25 uv/meter. Normal bearing accuracy: ± 3°. BFO: 455 kc, switch-selected. Speaker: 4" x 6" weather, proofed. 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) T1363, (2) 2N1108, (1) 2N1109, (1) 2N1110, (1) 2N1111, (1) R251, (2) R250, (1) 2N236, (1) diode. Dimensions: 9" x 9½" x 6½".

Protect Your Boat with this Transistor DEPTH SOUNDER . . .

Shows depth to 200 ft.

- * 5-transistor circuit
- * Operates on flashlight battery power
- * Provision for external power supply
- * Easy circuit board assembly



MI-11 **\$69⁹⁵**

Kit Form or
Factory Assembled

SPECIFICATIONS—Dial: 0-200 feet in one foot divisions. Range: 0-200 feet on hard bottoms, 0-100 feet on soft bottoms. Frequency: 200 kc. Sounding rate: 1440 soundings per minute, or 24 per second. Accuracy: Within 5% of actual depth. Depth indication: Neon lamp flashing at 0 feet and again at indicated depth. Transducer: Barium titanate ceramic element encased in a waterproof housing with solid brass fittings; attached 15 foot length of 2 conductor shielded cable. May be mounted permanently to the hull or temporarily with a transom mount. Controls: Combined ON/OFF-Sensitivity. Power supply: 13.5 volts from nine self-contained size C flashlight cells, or external 12 volt battery. Flashlight cells are contained in three leakproof plastic housings. Battery drain: 50 milliamperes. Average battery life: 50 hours intermittent operation, 25 hours continuous operation. Dimensions: 7¼" W x 5¼" H x 7½" D.

Here's the answer to that ever present question, "How deep is it?" Whether you are worried about boat protection or wondering about the fishing possibilities, the Heathkit MI-11 Depth Sounder gives you the answer accurately and economically! Its advanced circuit design with 5 transistors, tuned amplifiers, and extra shielding gives you an extended range. Depth readings to more than 200 feet are possible on hard, sandy bottoms. The large, easy-to-read, hooded dial is calibrated in one-foot divisions to 200 feet (100' per dial revolution). Unit can be powered by your boat's 12 v. battery if you wish to maintain the internal battery supply for emergency use. Styled in gray, white, and black with blue trim. Put this handsome performer to work on your craft this season.

Kit MI-11, 8 lbs., no money down,
\$7 mo. **\$69.95**
Assembled MIW-11, \$9 mo. **\$89.95**
Accessory transducer mount;
Model MIA-11, 2 lbs. **\$8.95**

All-Transistor Tachometer For Boat Or Car

MI-31A **\$24⁹⁵**

MI-31A

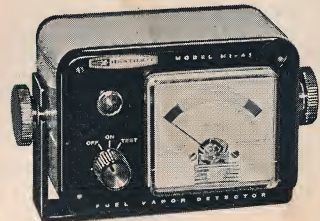
- Improved circuitry for high accuracy
- Two ranges, switch selected
- Lighted dial



Ideal for use with all inboard or outboard marine and automobile engines (1-6 cylinder, 2 cycle or 1-16 cylinder, 4 cycle) that use standard coil and distributor ignition systems (also works with magneto systems when used with an external battery). Features switch selection of 0-4000 and 0-8000 rpm ranges, plus wiring option for modifying to 0-2000 & 0-4000 rpm. Uses 2 transistors plus Zener diode. Unaffected by normal voltage or temperature variations. Works on pos. or neg. gnd. Circuit board construction. Ball & socket mount. 3 lbs.

Kit MI-31A, no money down, \$5 mo. **\$24.95**

Low Cost Heathkit Fuel Vapor Detector . . . A Safety "Must" For Any Powered Boat!



MI-41
\$39⁹⁵

- Detects combustible gas fumes
- "Safe-Dangerous-Explosive" meter scale
- Provision for external alarm
- Self-testing—transistor circuit
- Easy to assemble & install

A safety device no power boat owner should be without! The Heathkit fuel vapor detector warns against dangerous buildup of flammable fumes in enclosed engine compartments before that starter button is pressed! The built-in meter gives visual indications and a buzzer or bell can be connected for audible alarm. This feature can also be used to operate a ventilation blower to clear fumes automatically. Completely reliable the MI-41 features an all-transistor circuit that is not affected by drafts, temperature or voltage variations and is self-testing. Operates from 12 volt DC source, pos. or neg. ground.

Kit MI-41, 4 lbs., no money down,
\$5 mo. **\$39.95**

SPECIFICATIONS—Voltage: 12 V DC. Current: 1.0 Amp. Panel size: 5" x 3-7/16". Depth: 3¾". Detector head size: 1½" round x 2½" long. Length of interconnecting cable supplied: 15'. Audible alarm capability: Yes. Meter indicator: Yes. Color: Marine White & Black. Material: Aluminum. Temp. range: -20 C to ±80 C.

Marine Power Inverter

- Converts 6 or 12 v. battery power to 117 V AC
- 175 watts cont., 240 watts max.
- All-transistor circuit

Plug-in power aboard your boat for lights and low-power appliances at lowest cost! Rugged power transistors cooled by efficient "heat sinks". Fuse protected. Two AC outlets and on-off switch. Build it in about two hours for years of power convenience.

Kit MP-10, 8 lbs., no money down,
\$5 mo. **\$29.95**
Assembled MPW-10, \$5 mo. **\$39.95**

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.

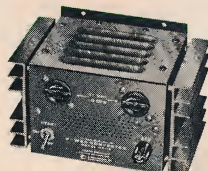
Marine Charger/Converter

- Heavy duty
- Filtered 6 or 12 v. output
- 3 charging rates
- Portable

Simultaneously charge 6 or 12 v. batteries and operate DC gear (even transistorized radio equipment without hum)! Filtered, metered output; High, Medium, and Low rates. Fused. Insulated terminals. Silicon rectifiers. Mounting bracket included. White & black colors.

Kit MP-11, 24 lbs., no money down, \$5 mo. **\$44.95**

SPECIFICATIONS—Input: 117 V AC, 60 cycles. Max. power requirements: 440 watts. Nominal charging rates: (6 volt) Low, 2 amps; Medium, 5 amps; High, 10 amps; (12 volt) Low, 5 amps; Medium, 10 amps; High, 15 amps; Surge, 20 amps. AC ripple: Less than 1% when connected to battery. Size: 8¾" W x 6¼" H x 8½" D.



MP-10
\$29⁹⁵



MP-11
\$44⁹⁵

There's Fun for Everyone

**SPECIAL XMAS
SAVE 50% On All-New**

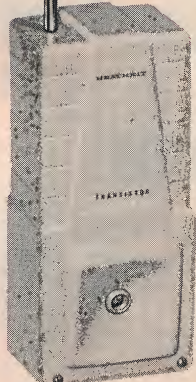


- * Perfect "starter" kits for children of all ages
- * No soldering—all units clip, snap, or screw together
- * Simple, cartoon-illustrated instructions make construction easy, educational, & fun
- * Ideal "early-buy" Christmas gifts at these reduced prices
- * Limited Supply—all-new, gift packaged
- * Battery powered for safety (batteries not included)

2-Way "Walkie-Talkie"

A genuine "walkie-talkie" that sends and receives messages up to one-quarter mile away . . . no wires or light beams. Operates just like those carried by the G. I.'s. All transistor circuit. Easy to assemble. Simple to use—just switch on, push button to talk, release to listen. Battery powered.

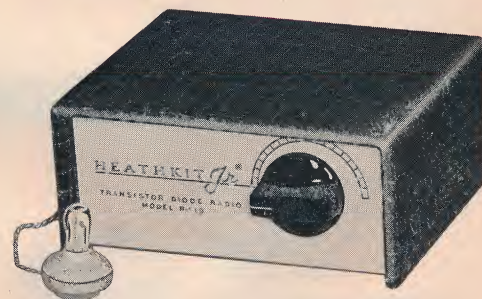
Kit R-220, 2 lbs. . . . Reg. \$29.95 **Only \$14.97**



Treasure Finder

Youngsters will spend hours on end in fascinating treasure hunting games with this treasure finder. Locates hidden or buried metal objects. The 3-transistor circuit works just like mine-detectors used by the army. Easy to build . . . no experience required! Manual explains operation and theory of finder.

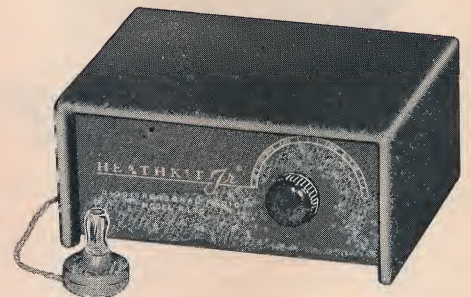
Kit R-340, 3 lbs., Reg. \$17.95. **Only \$8.97**



Transistor Diode Radio

Extra transistor amplifier in this transistor/diode radio pulls in local and long distance stations with ease! Teaches basic radio theory. Solderless connections and circuit board permit fast assembly. Battery operated. All parts, tools, earphone included.

Kit R-110, 2 lbs., Reg. \$9.95. **Only \$4.97**



Diode Personal Radio

Kids can have their own private radio receiver for loads of fun! Easy to build . . . no soldering or experience required. No batteries or external source necessary. Teaches radio theory. Includes genuine fixed-diode detector, cabinet, 50' of antenna wire, and earphone.

Kit R-190, 1 lb. . . . Reg. \$5.95. **Only \$2.97**

A Two-Part Course In Basic Radio

- * Simplified basic radio theory
- * Two-part textbook/kit project
- * Combines fun of assembly with learning
- * Final product is a handsome 2-band superheterodyne receiver

Easy to understand instructions teach basic radio while you build! All functions and concepts are described in everyday language, without difficult mathematics. The student starts by building a simple crystal receiver and chapter by chapter improves upon it until a regenerative tube-type receiver is made. Basic Radio Part II extends knowledge to more advanced circuits and terminology, resulting in a 2-band superheterodyne receiver that picks up broadcast, amateur radio, marine and international stations. Both parts of the course are designed to combine theory with actual construction and experimentation that greatly enhances the learning process.

Basic Radio Part I (Kit EK-2A) 7 lbs. . . \$19.95
Basic Radio Part II (Kit EK-2B) 5 lbs. . . \$19.95
Accessory Cabinet AK-8: For completed receiver. 3 lbs. \$3.95



**EK-2A
\$19.95**



**EK-1
\$19.95**

**A Priceless Introduction To
Electronics . . . Basic
Electricity Course**

- * Learn principles of voltage, current and resistance
- * Designed by a science educator

A logical starting point for adult or student who wants to learn about electricity and electronics. This kit and textbook combines theory with interesting experiments to demonstrate principles . . . at the same time you build a handy volt-ohm-milliammeter of many uses! This course can open up a whole new world of interest to a youngster and start him off to a profitable career in this greatly expanding age of electronics.

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

a Heathkit Speaker



A 12" 2-Way High Compliance High Fidelity Speaker

Our finest, most powerful speaker . . . connoisseur quality throughout! Finest materials available . . . smooth response (20 to 15,000 cps) . . . high compliance edge-damped woofer cone . . . low crossover-frequency . . . reflexed-horn high frequency unit . . . all have been incorporated for astounding realism. Features include 1½" & 1" voice coils, high frequency level control, and die-cast metal frames.

Model AS-183, 14 lbs. . . . no money dn., \$5 mo. . . . **\$49.95**

SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 30 watts. Frequency response: 20-15,000 cps. Cone resonance: 25 cps. Magnet weights: 1¾ lbs., 4.65 oz.

B 12" Deluxe 3-Way High Compliance Speaker

Enjoy features and performance a'plenty . . . frequency range of 35 to 15,000 cps . . . high compliance edge-damped woofer cone for rich, deep bass . . . high frequency cone for mid-range realism . . . Heath special-design horn tweeter for crystal-clear highs. Handles up to 25 watts and has hi-frequency level control. Features built-in crossover networks, 1½" & 1" voice coils, die-cast metal frames.

Model AS-173 . . . 12 lbs. . . . no money dn., \$5 mo. . . . **\$39.95**

SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 25 watts. Frequency response: 35-15,000 cps. Cone resonance: 40 cps. Magnet weight: 1¾ lbs., 2½ oz.

C 12" Deluxe 3-Way Coaxial Hi-Fi Speaker

"Heath-Engineered" to take its place in any high quality, home music system, the AS-163 features true coaxial design with three separate radiating elements . . . woofer, tweeter, and special-design horn tweeter. Also has mechanical and electrical crossover networks, die-cast metal frames, and high frequency level control for horn-type tweeter. Includes cabinet recommendations.

Model AS-163 . . . 10 lbs. . . . no money dn., \$5 mo. . . . **\$29.95**

SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 20 watts. Frequency response: 40-15,000 cps. Cone resonance: 60 cps. Magnet weight: 13 oz., 1 oz. Voice Coil sizes: 1½" and 1".

D Two-Way Coaxial Hi-Fi Speaker

A super value two-way coaxial speaker for full-range sound reproduction. Features separate woofer and tweeter with built-in capacitive crossover network for true coaxial design, die-cast metal frame, high frequency level control, and polarized binding posts for proper phasing and easy connection to amplifying system. Includes cabinet recommendations.

Model AS-153, 9 lbs. . . . **\$19.95**

SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 15 watts. Frequency response: 50-15,000 cps. Cone resonance: 60 cps. Magnet weights: 10 oz., 1.47 oz. Voice coil sizes: 1" and 9/16".

E Our Lowest Priced 12" Hi-Fi Speaker . . . Only \$9.95

An outstanding value for the budget-minded hi-fi fan! Dual-cone design provides smooth, broad frequency response over entire range. Both cones are driven by a single voice coil. Features polarized binding posts, heavy-gauge pressed-steel frame and annular-ring magnet . . . ideal for custom wall or ceiling installation! Includes cabinet recommendations.

Model AS-143 . . . 5 lbs. . . . **\$9.95**

SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 14 watts. Frequency response: 50-12,000 cps. Cone resonance: 60 cps. Magnet weight: 10 oz. Voice coil size: 1".

F 8" Two-Way Coaxial High Fidelity Speaker

A terrific value in an 8" speaker! Enjoy true coaxial performance thanks to the separate cone woofer and tweeter plus built-in capacitive crossover network and high frequency level control. Features die-cast metal frame, polarized binding posts, and measures only 3¾" in depth for easy installation in small enclosures. Includes cabinet recommendations.

Model AS-133, 6 lbs. . . . **\$14.95**

SPECIFICATIONS—Size: 8". Impedance: 8 ohms. Power rating: 12 watts. Frequency response: 50-14,000 cps. Cone resonance: 70 cps. Magnet weights: 10 oz., 0.68 oz. Voice coil sizes: 1" and 9/16".

G 8" Dual-Cone Hi-Fi Speaker

Ideal for applications where extra range and low cost are desired. Features die-cast metal frame, polarized binding posts, ceramic annular-ring magnet, and dual-cone design for wide frequency range. Measures only 3½" in depth . . . ideal for "in-wall" and custom installations. Includes cabinet recommendations.

Model AS-123 . . . 5 lbs. . . . **\$9.95**

SPECIFICATIONS—Size: 8". Impedance: 8 ohms. Power rating: 12 watts. Frequency response: 50-12,000 cps. Cone resonance: 70 cps. Magnet weight: 10 oz. Voice coil size: 1".

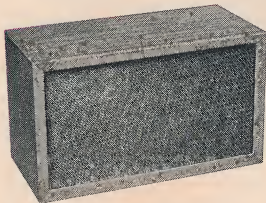
H 8" Low-Cost Space-Saver Speaker

Ideal as an extension speaker in high fidelity and background music systems or as a replacement speaker in radios, TV's, etc. Features dual-cone design, annular-ring magnet, heavy-gauge pressed-metal frame, & polarized screw-type terminals. Only 3" in depth for easy mounting in small spaces and enclosures. Cabinet recommendations included.

Model AS-113 . . . 3 lbs. . . . **\$4.95**

SPECIFICATIONS—Size: 8". Impedance: 8 ohms. Power rating: 10 watts. Frequency response: 60-10,000 cps. Cone resonance: 70 cps. Magnet weight: 4.8 oz. Voice coil size: 1".

Deluxe Heathkit Acoustic Suspension Speaker System



- * Added super tweeter for extended high frequency response
- * Built-in crossover networks—high frequency level controls
- * Preassembled cabinets—unfinished or walnut
- * All speaker components are genuine Acoustic Research, Inc. manufactured units

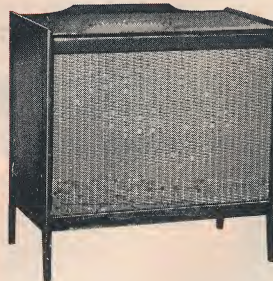
What makes this speaker system so different? The addition of a specially-designed super tweeter that extends the already remarkable performance of this system to a full 40 to 20,000 cycle response. This means distortion-free reproduction over the entire frequency range. The almost distortion-free properties are made possible by the acoustic suspension principle. The woofer cone is literally suspended in air, thus eliminating the speaker distortion caused by mechanical "springs" in most conventional speakers. Comes in either unfinished or walnut-finished factory-assembled cabinet.

Kit AS-2AW (finished walnut) . . . 46 lbs. . . . no money down, \$10 mo. . . . **\$99.95**

Kit AS-2AU (unfinished, white hardwood) . . . 46 lbs. . . . no money down, \$9 mo. . . . **\$89.95**

SPECIFICATIONS—Frequency response: ±5 db, 40 to 20,000 cps. Impedance: 8 ohms. Recommended amplifier power: 20 watts minimum. Enclosure: Infinite baffle, sealed. Speakers: Woofer, 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet; Mid-range, two 5" cone units, in dispersed array, 2.15 oz. Alnico 5 magnets; Super-tweeter, 1¾" dome-type construction. Crossover: L-C network, 2000 & 7500 cps. Controls: Individual levels for tweeter and mid-range speakers. Dispersion: 90° horizontal. Cabinet: Factory assembled ¾" furniture-grade plywood. Dimensions: 13½" H x 24" W x 11¾" D.

Christmas Never Sounded Better . . . "Legato-Compact" Deluxe Speaker System



- * Speakers cover 30-22,000 cps
- * 800 cps crossover network—completely assembled
- * Can be driven by as little as 3 watts
- * Preassembled cabinet in walnut finish, ready for speaker installation
- * Modern styling matches the AE-20 center cabinets

High, wide, and handsome, the "Legato Compact" is known by audiophiles everywhere for its acoustical excellence . . . known by engineers as an achievement in sound technology. What makes

it perform so well? First, there are two 12" Altec-Lansing "high compliance" low-frequency speakers that cover the 30-800 cps range. Add to that a specially-designed Altec Lansing exponential horn and high frequency driver combination that recreates frequencies from 800 to 22,000 cps with complete fidelity and brilliance. Can be driven by as little as 3 watts yet handles up to 30 watts. Handsome walnut cabinet is completely factory assembled. Order the "Legato Compact" in time for Christmas, now!

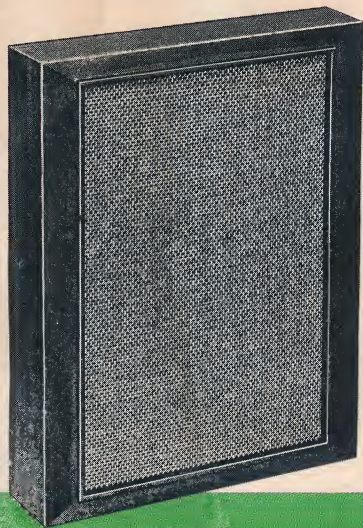
Kit AS-21W, walnut, 136 lbs., no money dn., \$22 mo. . . . **\$239.95**

Kit AS-31, All components of AS-21 except cabinet for custom installations. Cabinet dimensions included . . . 54 lbs., no money dn., \$18 mo. . . . **\$184.95**

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 32¾" H. Magnet wts.: Low-Frequency drivers: 1½ lbs. each. High-frequency driver: .53 lbs. Crossover network: 800 cps constant K high frequency shelving type. Driving power: As low as 3 watts.

The Heathkit "Profile" 3-Way Speaker System . . . Slim in Size and Price

- * Installs on wall, shelf, or floor
- * 3-speaker system—tube-tuned bass reflex
- * Compact . . . only 5" deep
- * "Big Sound" Hi-Fi performance



AS-22W
\$54⁹⁵

Expected Shipping Date Dec. 15.

New! Heathkit 3-Speaker, 2-Way Speaker System



- * 3-speakers . . . 5 1/4" woofer and 2-3" tweeters
- * Compact . . . ideal for wall, shelf, table installation
- * 65-14,000 cps frequency response
- * Factory assembled cabinets

Enjoy a truly "big speaker" sound that will please the most discriminating ear from a miniature speaker that takes only a minimum of space on table, wall, or shelf. Has a specially designed 5 1/4" woofer and two 3" tweeters to give you a smooth wide range (65-14,000 cps) sound. Factory assembled cabinets are available in either walnut or unfinished hardwood. Solves a host of hi-fi installation problems easily.

Kit AS-193U, unfinished, 12 lbs. **\$22.50**
Kit AS-193W, walnut, 12 lbs. . . . no money dn., \$5 mo. **\$24.95**

SPECIFICATIONS—Impedance: May be used with amplifiers having 4, 8, or 16 ohm output. **Frequency range:** 65-14,000 cps. **Crossover frequency:** 4,000 cps. **Speaker power rating:** 6 watts. Higher rated amplifiers, adjusted for reasonable listening levels, may be used. Adequate room sound with 1 watt to speaker. **Nom. woofer size:** 5 1/4" Dia. **Dimensions:** 12 3/4" H x 15 1/4" W x 2 3/4" D.

A "Tried & True" Performer enjoyed by thousands . . . Heathkit 2-Way Hi-Fi Speaker System



- * 8" woofer
- * Compression-type horn tweeter
- * Built-in crossover network
- * Factory assembled cabinets

Thousands have purchased this fine speaker system . . . check its specifications and price and you'll see why! Rotable tweeter mounting board provides proper wide dispersion angle. Speaker impedance is 16 ohms, and power rating is 25 watts . . . can be used with hi-fi amplifiers having as little as 3 watts output! Can be installed either vertically or horizontally.

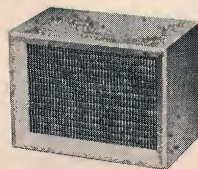
Kit AS-51U, unfinished, 28 lbs., no money dn., \$5 mo. **\$39.95**
Kit AS-51W, walnut, 28 lbs., no money dn., \$5 mo. **\$46.95**

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. **Dimensions:** 11 1/2" H x 23" W x 11 1/4" D.

Here's what every superior high-fidelity amplifier hopes it gets for Christmas . . . "Profile" . . . the slim, trim new Heathkit 3-way speaker system. Just 5 inches deep, it fits anywhere! Stand it on the floor, set it vertically or horizontally on table or bookshelf, or even hang it like a picture on the wall! Versatile in performance too! Uses 10" woofer of special inverted design, plus 6" mid-range and 3 1/2" tweeter with closed backs for perfectly balanced, natural sound. Factory assembled cabinets in finished walnut or unfinished whitewood. 35 lbs.

Kit AS-22U, unfinished, \$5 mo. **\$49.95**
Kit AS-22W, walnut, \$6 mo. **\$54.95**

Specifications—Frequency response: ±5 db, 55 to 12,500 cps. **Crossover frequency:** 2250 cps. **Recommended amplifier power:** 10 to 25 watts. **Nominal impedance:** 8 ohms. **Woofer:** 10" special inverted design, 1.1 lb. Alnico V magnet. **Mid-range:** 6" closed back, 2.16 oz. Alnico V magnet. **Tweeter:** 3 1/2" closed back, 2.15 oz. Alnico 5 magnet. **Cabinet:** bass reflex, tube-tuned, factory assembled of 3/4" furniture grade plywood. **Dimensions:** 19 1/2" W x 25" H x 5" D.



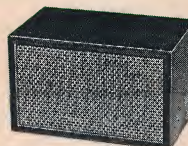
Lowest Cost Wide Range Speaker System

- * 6" x 9" extended range dual-cone speaker
- * Factory assembled walnut or unfinished cabinets
- * 70-16,000 cps response

Use this low-cost speaker system in a variety of ways . . . as an economy speaker for an extra music system . . . as an extension speaker . . . or as a center fill-in speaker for a stereo system. It has surprising response and good power handling capability. Easy to build, just install the speaker in the assembled cabinet and connect the two leads. 8 lbs.

Kit AS-41U, unfinished **\$10.95**
Kit AS-41W, walnut finish **\$12.95**

SPECIFICATIONS—Frequency response: 70 to 16,000 cps. **Impedance:** 8 ohms. **Capacity:** 12 watts. **Enclosure:** Rear vented box. **Speaker:** 6" x 9" extended range dual cone, 6.8 oz. Alnico 5 magnet. **Cabinet:** Factory assembled, furniture-grade 1/2" plywood. **Dimensions:** 8" H x 11" W x 6 1/2" D.



World's Smallest Two-Speaker System

- * Special woofer
- * 3" tweeter
- * Factory assembled cabinet in walnut, or unfinished

Engineered for wide-range response from a very small enclosure, this miniature system uses a high-compliance woofer with mass-loaded cone carefully matched to the cabinet for unusual bass response, plus a 3" closed-back tweeter. Easy to build with assembled cabinet. 8 lbs.

Kit AS-81U, unfinished **\$17.50**
Kit AS-81W, walnut **\$19.95**

SPECIFICATIONS—Frequency response: ±5 db, 70 to 14,000 cps. **Impedance:** 8 ohms. **Capacity:** 6 watts. **Enclosure:** Infinite baffle. **Speakers:** Woofer, 5 1/2" mass-loaded cone, 10 oz. Syntox 6 magnet; Tweeter, 3" cone-type, .53 oz. Alnico 5 magnet. **Crossover:** Capacitive, 4000 cps. **Cabinet:** Factory assembled, furniture-grade 1/2" plywood. **Dimensions:** 6 1/2" H x 10 3/4" W x 6 1/16" D.

For Relaxed, Private Listening, Choose One Of These "Professional" Headsets!



A Jensen HS-1L Stereo Headset

Professional! Special design, matched moving coil units with fluid damping. Lightweight nylon cases. Contoured cushions. Stainless steel yokes. 2 lbs.

Model ADP-82 **\$22.50**

SPECIFICATIONS—Drivers: High-compliance, curvilinear, moisture resistant diaphragm. Aluminum voice coil, sintered magnetic circuit with efficient Alnico magnet. **Frequency range:** 20-15,000 cycles. **Power requirements:** Comfortable listening with 1/10 milliwatt. **Impedance:** 8-ohms each channel (may be connected to 4, 8, or 16 ohm amplifier outputs). **Sensitivity:** 95 db sound pressure level for 1 milliwatt input. **Connectors:** Spade terminals. **Cord:** 4-wire cable, 8 ft. long.

B Telex ST-11 Stereo Headset

Special design for wide-range reproduction and improved bass. Lightweight. Comfortable foam rubber muff with deep cavity design. Stainless steel headband and yokes. 2 lbs.

Model ADP-92 **\$23.92**

SPECIFICATIONS—Driver element: Dynamic. **Sensitivity:** better than 95 db. **Frequency response:** 16 to 15,000 cps. **Impedance:** 8 ohms for use with 3 to 16 ohm sources. **Power input:** 15 milliwatts, 1 watt maximum. **Cord:** 4-wire 12 ft. long with spade terminals. **Color:** Tan and brown.

C New! Roanwell Stereo Hi-Fi Headset

New and improved for better bass response. Thicker cushions and 4 more feet of cord. Identical driver units used in manned space flights. 4-wire design eliminates phasing problems.

Model ADP-102A, 2 lbs. . . . no money dn., \$5 mo. **\$37.50**

SPECIFICATIONS—Drivers: Moving coil, dynamic. **Sensitivity:** 110 db, ref. .0002 dynes/cm², for 100 mw. **Frequency response:** 10-18,000 cycles. **Distortion:** Less than 1% with 100 milliwatt input. **Impedance:** 20 ohms. **Connectors:** Spade terminals. **Cord:** 4-wire cable, 20 ft. long.

D New! Stereo Headphone Control Box

Switch from speakers to headphones without leaving your chair. Connects to any amplifier and accommodates "any impedance" headset. Allows separate control of two headphone sets, plus individual volume adjustment for each ear. Has 15' of cable and is simple to build. Compact . . . measures 3" W x 6" D x 3 1/4" H.

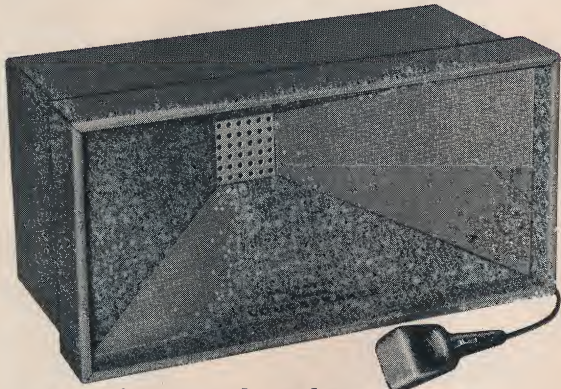
Kit AC-13, 2 lbs. **\$9.95**

Expected Shipping Date Dec. 15.

With Heathkit Educational & Technical Series

CLOSE-OUT!

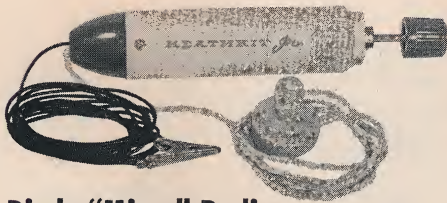
Heathkit Jr.[®] Science Explorer Kits



Transistor Loudspeaker

Youngsters will have loads of fun putting on their own talent shows, plays, circus shows, or playing announcer with this transistor sound system. Big horn speaker cabinet amplifies sound many times! The circuit is battery powered for safety, and is completely portable for use indoors or out! Simple to build. Manual explains sound system principles. Includes easy-to-operate microphone.

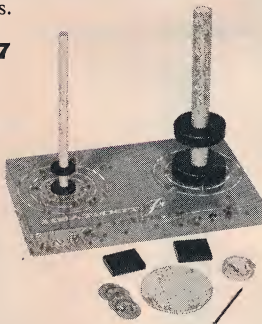
Kit R-320, 5 lbs. Reg. \$17.95 **Only \$8.97**



Diode "Micro" Radio

Housed in a colorful rocket-shaped plastic case, this tiny radio receiver picks up local stations with ease! Needs no batteries or external power source. Crystal earphone included. No soldering or experience necessary.

Kit R-180, 1 lb. Reg. \$3.95 **Only \$1.97**



Magnets in Action

An exciting series of experiments designed to show youngsters what magnets are, how they behave, and why! All metal parts and magnets included. Loads of fun!

Kit R-200, 1 lb. Reg. \$2.95 **Only \$1.47**



Electricity Kit

Children learn about electrical forces, polarity, magnetism, static electricity, magnetic fields, conduct visual experiments and build a real electric motor. Simple check-by-step instructions and operating principles.

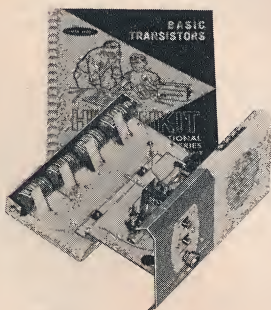
Kit R-210, 1 lb. Reg. \$4.95 **Only \$2.47**



Transistor AM Radio Broadcaster

Transmit voice through any standard AM radio receiver. Kids can play disk-jockey, announcer, pilot, etc. Simple to build . . . no soldering or experience necessary! Manual describes operational theory in simple terms. Portable. Safe and simple to use.

Kit R-240, 1 lb. Reg. \$9.95 **Only \$4.97**



EK-3
\$16⁹⁵

Teaches Basic Fundamentals of Transistors and Their Applications

- * Simplified easy-to-understand text
- * Interesting experiments performed as you learn
- * You build a handy two-station intercom

An excellent introduction to the "how" and "why" of transistors and their associated circuitry. Interesting experiments performed, illustrate and support the text without difficult mathematics. Information gained from this course will provide the necessary background for understanding basic transistor theory which will simplify servicing and troubleshooting of transistorized circuitry and equipment. The well-written textbook remains a storehouse of information that will be valuable in any reference file.

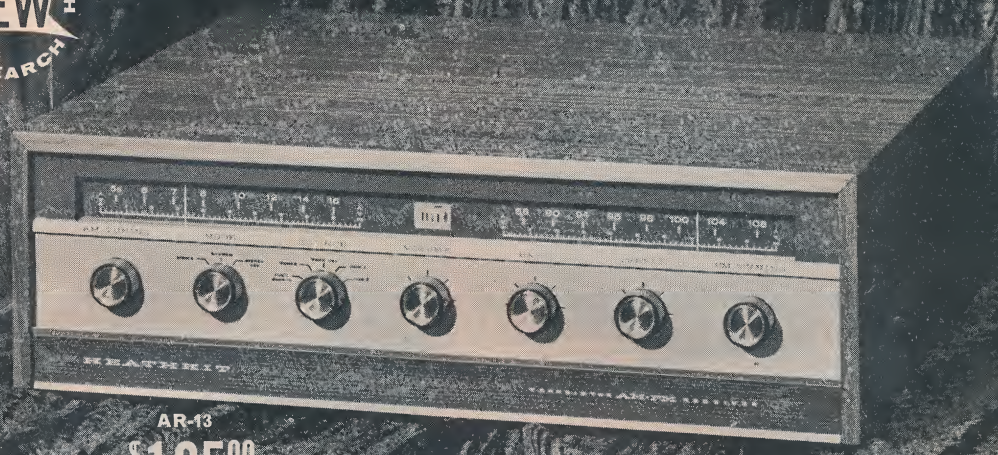
Basic Transistors (EK-3) 4 lbs. **Only \$16.95**

HEATHKIT TECHNICAL APPLICATIONS KITS Buy In Combination And Save!

- Kit EF-1, "How To Understand And Use Your Vacuum Tube Volt-meter" text and special power supply, (for VTVM owners) 3 lbs. **\$8.95**
- Kit EF-1-4, includes EF-1 and IM-13 VTVM p. 43, 10 lbs., no money dn., \$5 mo. **\$39.95**
- Kit EF-1-3, includes EF-1 and IM-11 VTVM p. 42, 8 lbs., no money dn., \$5 mo. **\$32.50**
- Kit EF-2, text "How To Understand And Use Your Oscilloscope" plus special chassis and parts, 4 lbs. **\$9.95**
- Kit EF-2-2, includes EF-2 and IO-21 Oscilloscope p. 42, 16 lbs., no money dn., \$6 mo. **\$57.95**
- Kit EF-2-4, includes EF-2 and IO-12 Oscilloscope p. 43, 28 lbs., no money dn., \$9 mo. **\$84.95**
- Kit EF-3, text "How To Understand And Use Your Signal Generator" and special test chassis, 3 lbs. **\$11.95**
- Kit EF-3-2, includes EF-3 and IG-102 Signal Generator, 9 lbs., no money dn., \$5 mo. **\$37.95**
- Kit EF-3-3, includes EF-3 and IG-82 Sine Square Generator, 16 lbs., no money dn., \$6 mo. **\$61.95**

THROUGH HEATH
NEW
RESEARCH

ANOTHER
HEATHKIT
FIRST!



AR-13
\$195.00
Expected Shipping
Date Dec. 15.

A Cool-Operating, All-Transistor, All-Mode Stereo Receiver In Kit Form For Just \$195.00

- * 43 transistor, 16 diode circuitry for cool, fast economical operation and the quick, natural beauty of "transistor sound"
- * Compact, yet houses two 20-watt power amplifiers, two separate preamplifiers, and a wide-band AM/FM/FM Stereo tuner
- * Tuner automatically switches to stereo
- * Richly-warm walnut cabinet styled in Heathkit's new low-silhouette design
- * Easy to build with preassembled, prealigned "front-end" and AM-FM I.F. strip

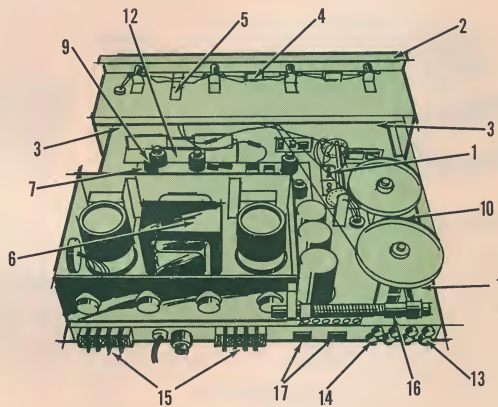
Music Lovers! Now in time for Christmas giving, Christmas listening; two 20-watt power amplifiers . . . two separate preamplifiers . . . plus wide-band AM, FM and FM stereo . . . all beautifully housed in this new, compact Heathkit All-Transistor Stereo Receiver. For Heathkit this means another first! For you it means experiencing the full dimension of "transistor sound" in a handsomely styled receiver that *won't* overheat . . . just the coolest, fastest, most economical operation possible! This is the why of transistor stereo. This is why you should move up to this new AR-13 Receiver. And keeping with tradition, Heathkit makes this advanced performer easy for you to own . . . just \$195.00.

All the electronics you need for a complete music system are "Heath-Engineered" into this handsome unit . . . just add two speakers and a phonograph or tape recorder! And there's plenty of advanced features to match the advanced performance of the AR-13. You'll like the way this unit *automatically* switches to stereo, thus eliminating any manual operation. In addition the automatic stereo indicator light silently signals when stereo is being received. For versatility there's three stereo inputs (mag. phono and two auxiliary) plus two filtered tape recorder outputs for direct "off-the-air" beat-free stereo recording. Dual-tandem controls provide the simultaneous adjustment of volume, bass, and treble of both channels. Balancing of both channels is accomplished by a separate control. The AM tuner features a high-gain RF stage and high-Q rod antenna.

Other quality features include a local-distance switch to prevent overloading in strong signal areas; a squelch control to eliminate between-station noise; AFC for drift-free reception; heavy die-cast flywheel for accurate, effortless tuning; pin-point tuning meter; and external antenna terminals for long-distance reception. For added convenience the secondary controls are "out-of-the-way" under the hinged lower front panel to prevent accidental system changes. The slide-rule AM and FM dials are fully lighted.

Building the AR-13 is quick and easy with the preassembled FM "front-end" and 3-stage AM-FM I.F. strip, plus circuit board construction. Styled in Heathkit's new low-silhouette design, the beautiful walnut cabinet accented with the extruded gold-anodized aluminum front panel makes the AR-13 a handsome addition to any home decor. This Christmas, move up to the better listening of "transistor sound" with the new AR-13 Stereo Receiver . . . another example of superb Heathkit quality at unmatched savings.

Kit AR-13, 30 lbs., no money dn., \$19 mo. **\$195.00**



The Latest "Solid-State" Circuitry and Features

1. Pre-assembled pre-aligned AM/FM IF strip
2. Gold anodized extruded aluminum front panel
3. Flywheel tuning
4. Tuning meter
5. Stereo indicator light
6. Transformer operated power supply
7. Built-in stereo demodulator
8. Built-in line antenna FM (not shown)
9. 19 kc and 38 kc output filter
10. Pre-assembled, prealigned FM front end
11. AM RF amplifier stage
12. Circuit modules
13. Three stereo inputs
14. Low impedance tape recorder outputs
15. Transformerless 4, 8, and 16 ohm outputs
16. AM rod antenna
17. Switched and unswitched line outputs.

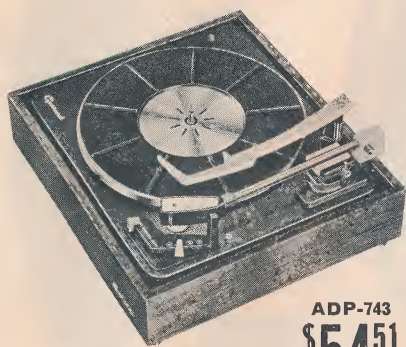
SPECIFICATIONS—Amplifier: Power output per channel (Heath Rating): 20 watts/8 ohm load, 13.5 watts/16 ohm load, 9 watts/4 ohm load. (IHFM Music Power Output): 33 watts/8 ohm load, 18 watts/16 ohm load, 16 watts/4 ohm load @ 0.7% THD, 1 KC. **Power response:** ±1 db from 15 cps to 30 KC @ rated output; ±3 db from 10 cps to 60 KC @ rated output. **Harmonic distortion** (at rated output): Less than 1% @ 20 cps; less than 0.3% @ 1 KC; less than 1% @ 20 KC. **Intermodulation distortion** (at rated output): Less than 1%, 60 & 6,000 cps signal mixed 4:1. **Hum & noise:** Mag. phono, 50 db below rated output; Aux. inputs, 65 db below rated output. **Channel separation:** 40 db @ 20 KC, 60 db @ 1 KC, 40 db @ 20 cps. **Input sensitivity** (for 20 watts output per channel, 8 ohm load): Mag. phono, 6 MV; Aux. 1, .25 v; Aux. 2, .25 v. **Input impedance:** Mag. phono, 35 K ohm; Aux. 1, 100 K ohm; Aux. 2, 100 K ohm. **Outputs:** 4, 8, & 16 ohm and low impedance tape recorder outputs. **Controls:** 5-position Selector; 3-position Mode; Dual Tandem Volume; Bass & Treble Controls; Balance Control; Phase Switch; Input Level Controls (all inputs except Aux. 2); Push-Pull ON/OFF Switch. **FM: Tuning range:** 88 mc to 108 mc. **IF Frequency:** 10.7 mc. **Antenna:** 300 ohm balanced (internal for local reception). **Quieting sensitivity:** 2½ uv for 20 db of quieting, 3¼ uv for 30 db of quieting. **Bandwidth:** 250 KC @ 6 db down (full quieting). **Image rejection:** 30 db. **IF Rejection:** 70 db. **AM Suppression:** 33 db. **Harmonic distortion:** Less than 1%. **Multiplex:** Bandpass: ±½ db, 50 to 53,000 cps. **Channel separation:** 30 db, 50 to 2,000 cps; 25 db @ 10 KC. **19 KC Suppression:** 50 db down, from output @ 1 KC. **38 KC Suppression:** 45 db down, from output @ 1 KC. **SCA Rejection:** 30 db. **AM: Tuning range:** 535 to 1620 KC. **IF Frequency:** 455 kc. **Sensitivity:** 1400 KC, 3.5 uv; 1000 KC, 5 uv; 600 KC, 10 uv—standard IRE dummy antenna. **Bandwidth:** 8 KC @ 6 db down. **Image rejection:** 30 db @ 600 KC. **IF Rejection:** 45 db @ 600 KC. **Harmonic distortion:** Less than 1%. **Overall dimensions:** 17" L x 5½" H x 14½" D.

Name Changers & Turntables



New Garrard Model AT6 AUTOMATIC TURNTABLE . . .

Adds new life to your favorite records



ADP-743
\$54⁵¹

- * Dynamically counterbalanced tone arm
- * Built-in stylus pressure gauge
- * Plug-in cartridge shell
- * Over-size heavy-weight balanced turntable
- * Laboratory series 4-pole shielded motor
- * Separate spindles for automatic or manual play

This precision-crafted new Garrard Automatic turntable is designed to accept a mixed set of "any size" records in any sequence for completely automatic record-playing convenience. The counterbalanced tubular tone arm with built-in pressure scale permits frequent, accurate, and easy checks of tracking force settings. The plug-in cartridge shell accepts all cartridge types, including those labeled "professional". Silent operation and perfect speed are attributed to its specially designed 4-pole motor which is fully shielded to eliminate any trace of magnetic hum. Separate spindles and controls for manual or automatic use provide complete operating convenience. Choice of cartridge (opposite) for only 1c more than the regular \$54.50 price!

- ADP-743 with A, B, C, D, or E cartridge, specify . . . 15 lbs. . . no money down, \$6 mo. **\$54.51**
- ADP-743F with AD-753F Shure M99/AT6 cartridge, \$7 mo. **\$64.50**
- ADA-743-1, Garrard LRS6, 45 rpm spindle . . . 1 lb. **\$3.80**
- ADA-53U, Matching base (unfinished) . . . 3 lbs. **\$4.45**
- ADA-53W, Matching base (walnut) . . . 3 lbs. **\$4.95**

SPECIFICATIONS—Speeds: 16%, 33%, 45 and 78 rpm. **Motor:** 4-pole shaded, hum-shielded. **Tracking:** will track all cartridge types including "professional". **Color:** grey, charcoal, and brushed aluminum. **Wiring:** Stereo, 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** line cord and 2 audio cables. **Power requirements:** 100-130 volts 60 cycles AC. **Dimensions:** Requires mounting space 15³/₈" W x 13³/₈" D, 3/8" above and 2¹/₂" below top of motor board.

Shure M99-AT6 Dynetic "Gard-A-Matic" Stereo Cartridge for use with Garrard Model AT6 Only

Same as AD-693F below, except with bayonet-type plug-in shell. Permits tracking force up to 3 grams. Cartridge retracts when dropped to prevent record damage.

Model AD-753F, 1 lb. **Net \$24.75**

MANUFACTURER'S SPECIFICATIONS—Frequency response: 20-20,000 cps. **Output:** .006 v. **Separation:** more than 22.5 db at 1 kc. **Load impedance:** 47,000 ohms. **Stylus:** .0007" diamond. **Compliance:** 20 x 10⁻⁶ cm/dyne. **Tracking force:** 1.5 to 3 grams.



ADP-63
\$79⁵¹

New Garrard Type-A AUTOMATIC TURNTABLE . . . professional features at a budget price!

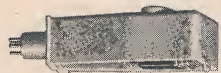
- * A true, dynamically balanced tone arm
- * Built-in stylus pressure gauge
- * Full-size heavily-weighted turntable
- * Exclusive pusher platform for automatic play

Completely assembled! . . . just install the cartridge of your choice and it's ready to use! Professional features provide turntable quality with automatic convenience for finest record reproduction. Beautifully designed throughout to take its place in the finest of home high fidelity systems. Choice of cartridge (opposite) for only 1c more than regular price of \$79.50!

- ADP-63 with A, B, C, D, or E cartridge, specify. 22 lbs. **\$79.51**
- ADP-63F with AD-693F Shure M99/A cartridge. 22 lbs. **\$89.50**
- ADA-61-1, Garrard LRS3 45 rpm spindle, 1 lb. **\$3.80**
- ADA-63-2, Garrard B8U matching base (unfinished) . . . 4 lbs. **\$4.45**
- ADA-63-3, Garrard B8W matching base (walnut) . . . 4 lbs. **\$4.95**

SPECIFICATIONS—Speeds: 16%, 33%, 45 and 78 rpm. **Motor:** 4-pole shaded, hum shielded. **Tracking:** will track with "professional" model cartridges. **Turntable weight:** 6 lbs., non-ferrous metal. **Color:** gray, charcoal and chrome. **Wiring:** Stereo 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** line cord and 2 audio. **Power requirements:** 100-130 volts 60 cycles AC. **Dimensions:** Requires mounting space 16" W, 13³/₈" D, 6" above and 2¹/₂" below top of motor board.

Shure M99-A Dynetic "Gard-A-Matic" Stereo Cartridge . . . for use with Garrard Type-A Changer Only



Plugs into Garrard type-A changer arm. Features floating cartridge that retracts when arm is dropped, dragged across record or when pressure exceeds 3 grams. Plastic bumper prevents damaging contact . . . saves records and cartridge!

MANUFACTURER'S SPECIFICATIONS—Frequency response: 20-20,000 cps. **Output:** .006v. **Separation:** more than 22.5 db at 1 kc. **Load impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 20 x 10⁻⁶ cm/dyne. **Tracking force:** 1.5 to 3 grams. Model AD-693F, 1 lb. **Net \$24.75**

No Money Down. Up to 18 Months To Pay. Here's an ideal way to lighten that Christmas budget! Order your Heathgifts now, and any purchase of \$25 to \$600 can be paid for later on Heath's liberal time-pay plan. Complete details on enclosed order form.



A. GE . . . VR-1000-7 "MAGNETIC"

Manufacturer's Specifications: Frequency response: 20-20,000 cps, ±3 db. **Output:** 0.010v. **Separation:** 20 db. **Load impedance:** 47,000 ohms. **Stylus:** 7 mil diamond. **Compliance:** 4.5 x 10⁻⁶ cm/dyne, lateral; 4 x 10⁻⁶ cm/dyne, vertical. **Tracking force:** 3-7 grams. Model AD-112A, 1 lb. **\$9.95**



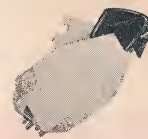
B. SHURE M3D "MAGNETIC"

Manufacturer's Specifications: Frequency response: 20-15,000 cps, ±3 db. **Output:** .005v. **Separation:** over 20 db @ 1 kc. **Load impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 4 x 10⁻⁶ cm/dyne in all directions. **Tracking force:** 3-6 grams. Model AD-663B, 1 lb. **\$15.95**



C. SONOTONE 9TA-SD "CERAMIC"

Manufacturer's Specifications: Frequency response: 20-17,000 cps. **Output:** .35v. **Separation:** 29 db @ 1 KC. **Load impedance:** 1-5 megohms. **Stylus:** 7 mil diamond & 3 mil sapphire. **Compliance:** 5.3 x 10⁻⁶ cm/dyne in all directions. **Tracking force:** 2-4 grams. Model AD-132C, 1 lb. **\$5.22**



D. PICKERING U38AT "MAGNETIC"

Manufacturer's Specifications: Frequency response: 20-20,000 cps. **Output:** .002v. **Separation:** 35 db. **Load impedance:** 47,000-100,000 ohms. **Stylus:** .7 mil diamond. **Tracking force:** 2-5 grams. Model AD-673D, 1 lb. **\$16.95**



E. EMPIRE 800 "MAGNETIC"

Manufacturer's Specifications: Frequency response: ± 2 db 8-20,000 cps. **Output:** .007v. per channel. **Separation:** 30 db average, 1 kc. **Load impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 10 x 10⁻⁶ cm/dyne. **Tracking force:** 2 grams recommended. Model AD-683E, 1 lb. **\$17.95**

For Better Value... Choose

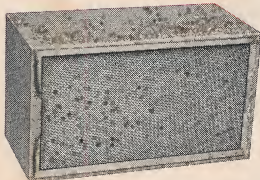
Need A High-Efficiency, High Fidelity Speaker For A Particular Music System Job? ... You'll Find It In Heath's Exclusive New Line!

- * Full 1-year guarantee on all models
- * Specially designed to rigid Heath specifications
- * New massive die-cast metal frames for extra strength
- * Polarized speaker terminals for proper phasing
- * New ceramic annular ring magnets for superior performance
- * Handsome cinnamon and tan color styling
- * An extra-value line designed for finest performance at lowest cost

Whether you want an advanced-engineered, professional-performing speaker for your custom music system, or need to replace a radio or TV speaker, you'll find it in this exciting new Heathkit line. Specially designed to Heath's exacting specifications, each speaker has been carefully crafted to perform a particular job. You'll like the low "easy-on-the-budget" prices too! Compare the features and specifications with others, and discover why you'll be wise to choose a Heathkit speaker this Christmas!



Low Cost Acoustic Suspension Speaker System



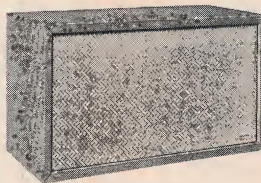
- * 10" Acoustic suspension woofer
- * Two 3 1/2" tweeters
- * Covers 30-15,000 cps
- * Factory assembled cabinets

Easy to drive, easy to buy, this Heathkit AS-10 is a remarkable value in acoustic suspension speaker systems. Takes only 10 watts to drive, yet handles up to 40 watts. Movable tweeter mounting permits placing cabinet in horizontal or vertical position. Start enjoying the distortion-free properties of an acoustic suspension system by selecting the AS-10 speaker this Christmas. Comes in either unfinished or walnut-finished factory-built cabinets.

Kit AS-10U, unfinished, 39 lbs., \$6 mo. **\$59.95**
Kit AS-10W, walnut, 39 lbs., \$7 mo. **\$64.95**

SPECIFICATIONS—Frequency response: ±5 db, 30 to 15,000 cps. **Impedance:** 16 ohms. **Recommended amplifier power:** 10 to 40 watts. **Enclosure:** Infinite baffle, sealed. **Speakers:** Woofer, 10" Acoustic Suspension, 1.0 lb. Alnico 5 magnet; Tweeter, two 3 1/2" cone units in dispersed array, 1.47 oz. Alnico 5 magnets. **Crossover:** L-C network, 2250 cps. **Control:** High frequency level. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled 3/4" furniture-grade plywood. **Dimensions:** 13 1/2" H x 24" W x 11 1/2" D.

Heathkit Acoustic Suspension Speaker System



- * Wide-range sound with compact speaker versatility
- * 10" acoustic suspension woofer, two 5" cross-fired tweeters manufactured by Acoustic Research, Inc.
- * Easy to build . . . preassembled, unfinished cabinet

Enjoy all the listening benefits of wide-range frequency response in a compact, "fits anywhere" cabinet. You'll appreciate the truly exceptional crystal-clear tone quality of this system. Features a 10" woofer for extended bass response with low harmonic distortion. A 2000 cps L-C crossover network and two cross-fired tweeters give an unusually fine high frequency distribution. Easy to build . . . factory assembled, unfinished hardwood cabinet.

Kit AS-2U, unfinished, 44 lbs. . . . no money dn., \$8 mo. **\$72.95**

SPECIFICATIONS—Frequency response: ±5 db, 40 to 15,000 cps. **Crossover frequency:** 2,000 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°. **Size:** 24" W x 13 1/2" H x 11 1/2" D.

Thinners, Amps, Music Systems



**NEW! Heathkit
16-Watt Stereo/Hi-Fi
AMPLIFIER . . .
Striking New Color
Styling . . . Operates
With Magnetic and
Ceramic Cartridges . . .
Costs Just \$39.95!**



AA-32
\$39.95



- * Four stereo inputs . . . accepts Magnetic as well as ceramic cartridges
- * Furnishes 16 watts of stereo output power
- * Music power output of 20 watts
- * Refreshingly styled in mocha brown and silver trim with black accents
- * Full-range tone controls . . . found only in more expensive equipment
- * Easy to build . . . goes from parts to power in a few hours

Been thinking about adding an extra music system in the kid's room, the den, or maybe in that new rec room you just finished? Or possibly you're just getting your feet wet in the exciting hobby of stereo/hi-fi, and at this point, don't wish to invest a lot of money in expensive equipment. In any case, here's a wonderful chance to add to or start that project with a brand new 16-watt Heathkit amplifier that gives you high fidelity/stereo capabilities, enough inputs to provide versatility and expansion, and yet is priced at only \$39.95. And since this is the first unit in a newly styled Heathkit line, you'll be able to add matched companions later.

This new Heathkit AA-32 Stereo/Hi-Fi Amplifier is designed to provide clean, wide-range response at an "easy-on-the-budget" price. You'll enjoy a power response within ± 1 db for every frequency from 30 to 30,000 cps at 8 watts per channel.

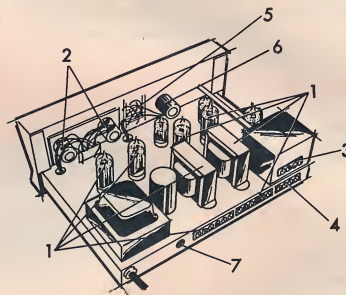
In addition, you'll like the convenience of such features as the mono/stereo switch; the dual-concentric volume control that lets you adjust the level of both channels individually or simultaneously; the full-range, tandem-type tone controls for simultaneous adjustment of both channels; and the four stereo inputs for magnetic phono as well as ceramic phono, tuner and auxiliary. The 7-tube amplifying circuit consists of two four-stage preamplifiers; and two push-pull power output stages. The power supply is a complete transformer operated full-wave silicon-diode circuit.

It's a breeze to build too, with simple-to-follow instructions and point-to-point wiring . . . beginners can finish it in a matter of a few hours.

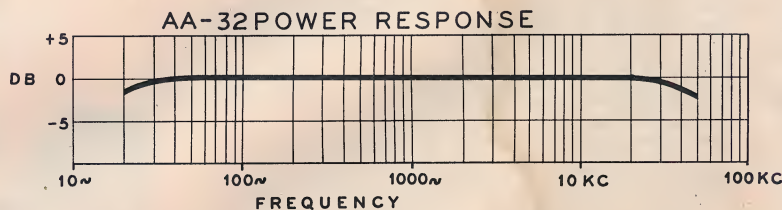
And the compact, "fit-anywhere" steel cabinet is fashioned in a new color styling of richly-warm mocha brown, black accents, and silver trim . . . blends beautifully with any room's decor.

What better time than Christmas to give this new Heathkit AA-32 Stereo Amplifier . . . just in time to start that music system addition right after the first of the year.

Kit AA-32, 15 lbs., no money dn., \$5 mo. \$39.95



1. Push-Pull Power output stages 2. Full range tone controls 3. RIAA mag. phono input 4. Four individual stereo inputs 5. Mono-Stereo switch 6. Clutched volume controls 7. Hum Null control



SPECIFICATIONS—Simultaneous power output per channel: 8 watts (16 watts total); IHFM music power output per channel: 10 watts (20 watts total). **Frequency response:** ± 1 db from 30 cps to 30,000 cps at rated output. **Harmonic distortion:** (at rated output) 2% @ 20 cps, 0.7% @ 1000 cps, 2% @ 15,000 cps. **Intermodulation distortion:** (at rated output) Less than 3% using 60 and 6000 cps, mixed 4:1. **Hum & noise:** Mag phono input 48 db below rated output. Aux. input, 65 db below rated output. **Channel separation:** 42 db @ 30 cps, 45 db @ 1000 cps, 30 db @ 15,000 cps. **Input sensitivity:** Mag phono, 6 mv; Cer. phono, 250 mv; Tuner, .25 V.; Aux., .25 V. **Input impedance:** Mag phono, 47 K ohm; Cer. phono, 2.2 meg.; Tuner, 470 K ohm; Aux., 470 K ohm. **Outputs:** 4, 8, and 16 ohm. **Damping factor:** 9. **Feedback:** 18 db. **Tube complement:** 3-6EU7 and 4-ECL-86 (6GW8). **Power requirements:** 105-125 V. 50-60 cps AC, 85 watts at 120 volts. **Dimensions:** 13½" W x 4-11/16" H x 9½" D.

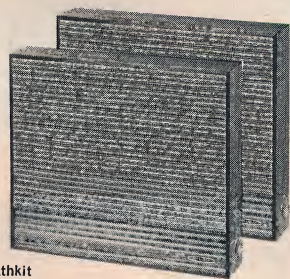
Save 5% On This Complete Stereo/Hi-Fi System!

Complete System HFS-65
Reg. \$134.31
Save \$ 6.72
You Pay Only **\$127.59**



ADA-53W, Walnut Changer Base, pg. 28 . . . \$4.95

Two AS-193W Heathkit Walnut Speaker Systems, pg. 32 . . . \$24.95 each



AA-32 Heathkit 16-Watt Stereo/Hi-Fi Amplifier (above), \$39.95

For The Budget-Minded . . . A Complete Stereo/Hi-Fi System For Only \$83.41

Complete System HFS-64
Reg. \$87.80
Save \$4.39
You Pay Only . . . **\$83.41**



Two AS-41W Speaker Systems, pg. 32, @ \$12.95 each, \$25.90

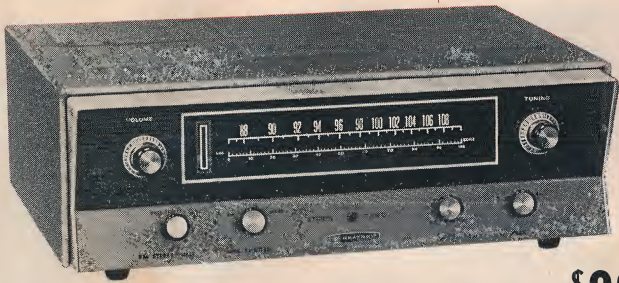


AA-201 6-Watt Stereo Amplifier, pg. 26, \$31.95

ADP-763 Maestro changer with Astatic 133-D cartridge, 45 rpm spindle, and walnut-finished base . . . all for only \$29.95

Save 10% On The Purchase Of Any Audio Gear When You Include The AEP-53 Equipment Cabinet. See "News & Views," pg. 4 For Details.

No Matter What Your Music System Needs,



AJ-12 **\$69⁹⁵**

For Better Performance And Lower Cost, Choose This Heathkit FM-FM-Stereo Tuner

- * Built-in FM stereo circuit * FM stereo indicator light * Stereo phase control for maximum separation * Variable squelch * Adjustable AFC
- * Filtered stereo tape recording output * Easy circuit board assembly

Trust Heath to offer more for less! This low cost package offers you monophonic FM or Stereo FM with every feature for perfect reception! Built-in FM Stereo circuitry, nothing external, no after-thought. Stereo Indicator shows when station is broadcasting in stereo. Stereo phase and separation controls adjust for minimum distortion and maximum separation. Adjustable AFC bans drifting signals, variable squelch eliminates "between-station" noise. Tuning is easy with new "bar" type tuning eye, edge-lighted dial, and flywheel tuning mechanism. Filtered stereo tape recording outputs assure clean, natural recordings. Styled in tan vinyl-clad steel cabinet with charcoal gray front and polished aluminum trim. You're "half-way home" when you build this one, the front-end is factory assembled and aligned, the rest is on circuit boards. Order this for your music loving friends . . . and put yourself at the top of the list. 20 lbs.

Kit AJ-12, no money down, \$7 mo. **\$69.95**

SPECIFICATIONS—FM SECTION: Tuning range: 88 mc—108 mc. Intermediate frequency: 10.7 mc. Antenna: Balanced input for external 300 ohm antenna. Internal line antenna. Output voltage (30 microvolts—30% Mod.): 1 volt. Image ratio (30 microvolts—30% Mod.—98 mc): —45 db. Harmonic distortion (25 microvolts—100% Mod.—98 mc): Less than 1%. IF rejection (98 mc): —65 db. FM audio response (20-20,000 cps): ±1 db. AFC correction factor (Full AFC): 100 kc per volt. AM suppression: —27 db. Hum and noise (25 microvolts, 30% Mod.): —48 db. Quieting sensitivity: 20 db—2½ microvolts; 30 db—3¼ microvolts; 48 db—30 microvolts (max. quieting). **FM STEREO CONVERTER SECTION:** Audio frequency response: ±2 db from 50 to 15,000 cps. Sub-carrier bandpass: ±3 db from 23,000 to 53,000 cps. Channel separation: 30 db or more at 1 kc; 25 db or more at 10 kc. Hum and noise: —65 db relative to 1 volt rms output. Output impedance (Cathode Follower): Variable to 4000 ohms, each channel. Outputs: Left Channel—Right Channel. Size: 5¼" H x 15¼" W x 10½" D

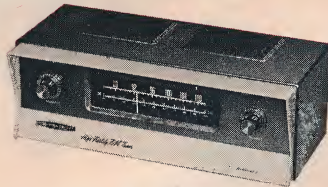
Add the Realism of Stereo to your Monophonic FM Tuner with this Low-Cost Deluxe Heathkit Converter

- * Use with AJ-31 tuner or any good FM tuner * Self-powered * Easy to build * Choice of color styles to match Heathkit tuners * Measures only 3½" H x 3½" W x 10½" D.

Now, big volume passes extra savings to you on this deluxe Stereo FM multiplex converter. "Marry" it with the AJ-31 or other Heathkit tuners for a matching FM Stereo tuning system. Has separation control for best performance. Includes 3 cables. 4 lbs.

Kit AC-11A, black, \$5 mo. **\$24.95**
Kit AC-11B, tan, \$5 mo. **\$24.95**

SPECIFICATIONS—Audio frequency response: ±2 db 50 to 15,000 cps. Subcarrier bandpass: ±4 db 23,000 to 53,000 cps. Channel separation: 30 db. Hum and noise: —55 db (relative to 1 volt rms output). Input impedance: 470 K ohms. Output impedance: 3000 ohms each channel (cathode follower output). Input: MULTIPLEX (from tuner). Input signal voltage: 4 volt minimum (from multiplex output of FM tuner). Outputs: LEFT CHANNEL; RIGHT CHANNEL. Switch and controls: OFF-ON switch; CHANNEL SEPARATION control; LEFT CHANNEL LEVEL control; RIGHT CHANNEL SEPARATION control. Tube-diode complement: 1-12AU7 Amplifier—Cathode Follower; 1-12AU7 Amplifier-Oscillator; 1-12AU7 Cathode Follower Output; 2-Silicon Diode Rectifiers; 2-Crystal Diode Detectors. Power requirements: 117 volts AC 50/60 cps, 12 watts. Size: 3½" H x 3½" W x 10½" D.



AJ-31 **\$39⁹⁵**



AC-11A **\$24⁹⁵**

Top Performance FM Reception at Lowest Cost — Heathkit AJ-31

- * Broad-band circuitry, perfect for stereo with AC-11 converter
- * 5 tube circuit (9 tube function)
- * Automatic Frequency Control
- * Easy to build with factory built front-end

Add hi-fi FM to your music system with this charcoal and ivory beauty. Convert to Stereo FM with the AC-11, it's ready anytime. Features flywheel tuning, AFC, and cathode follower outputs. Start now.

Kit AJ-31, 11 lbs., no money down, \$5 mo. **\$39.95**

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: 4-15/16" H x 13¾" W x 6" D.

There's Features and Performance A'plenty in this Stereo Combination Amplifier for Just \$31.95!

- * Two stereo inputs, phono & tuner or tape recorder
- * Separate Bass & Treble controls
- * Clutched, concentric volume controls
- * Smart new black & ivory styling

Here's proof that good things come in small inexpensive packages! This complete stereo/mono combination preamp-power amp has plenty of power for most any use, all necessary controls

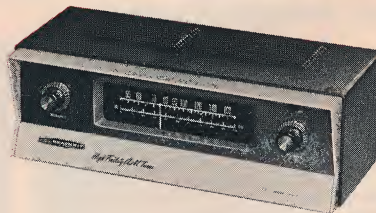
and an amazingly low price. Ideal for that extra home system!

Kit AA-201, 13 lbs., no money down, \$5 mo. **\$31.95**
Kit AA-191, 3-watt mono. version, 7 lbs. **\$16.88**

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: Black enamel with ivory front panel. Dimensions: 12½" W x 3¾" H x 6¾" D.

Add the Excitement of High Fidelity to AM Listening with

this Popular Heathkit Tuner



AJ-21 **\$27⁹⁵**

- * Super-sensitive Superhet circuit with extra tuned RF stage
- * Fidelity switch chooses normal or maximum bandwidth
- * Built-in transformer operated power supply with silicon rectifier for safety and long life * 10 kc Whistle Filter * Voltage doubler detector for lowest distortion

Extra features bring you finest performance. Useable with power amps., preamps., or high impedance headphones. Charcoal & ivory. 10 lbs.

Kit AJ-21, no money down, \$5 mo. **\$27.95**

SPECIFICATIONS—Tuning range: 550 kc to 1600 kc. Intermediate frequency: 4.5 kc. Sensitivity (for 20 db quieting IHFM standards): 1000 kc—8 uv. IF bandwidth (6 db down): NORMAL—7 kc; MAXIMUM—18 kc. Harmonic distortion: (750 uv 95% mod.); Less than 1%. Hum and noise: (500 uv—30% mod.); 40 db. IF rejection: 1000 kc—69 db. Power supply: Transformer operated (fused). Power requirements: 117 V AC, 50/60 cycles at 19 watts. Dimensions: Overall, 4-15/16" H x 13¾" W x 6" D.

There's a Heathgift to Fill It!



Special Value Price on this Heathkit STEREO TAPE RECORDER... only \$159.95



- * Records and plays 4-track stereo or mono tapes
- * Finest specifications
- * Two inputs per channel with mixing controls
- * Two VU-type level meters
- * Zero set, 3 digit counter
- * 7½ & 3¾ ips speeds
- * Easy circuit board construction
- * Fine quality die-cast front plate
- * FREE head alignment tape

Choose the finest, save the most with these recorders! Records and plays 4-track stereo tapes, records and plays 4 individual monophonic tracks, plays standard half-track monophonic tapes. Same mechanism is used on both models. The AD-22 recording model uses two identical channels with a combination record-playback head, erase head, and dual preamplifiers with NAB equalization. Records from high impedance microphones, AM and FM tuners, phono, TV, etc. Plays back through external power amplifiers and speakers. Level controls can be adjusted separately or simultaneously. Other features: VU-type meters, record interlock button, hum-null meter adjustment, bias adjustment. The AD-12 model is for playback use only through tape head inputs (no electronics).

Kit AD-22, mechanism and electronics for record and playback.
23 lbs., no money dn., \$15 mo., New Special Price... **Only \$159.95**

SPECIFICATIONS—Record-play head: Type, 4-track stereo; Gap width .00017"; impedance, High, 3340 ohms. **Erase head:** 4-track stereo. **Tape speeds:** 7½ ips and 3¾ ips as selected by speed selector. **Wow and flutter:** .3% at 7½ ips, .3% at 3¾ ips. **Signal-to-noise ratio:** 45 db or better at normal recording level. **Harmonic distortion (record-play):** 1% or less at normal recording level, with 400 cps signal, in accordance with NAB specifications. (National Association of Broadcasters). **Frequency response:** ±3 db, 40 to 15,000 cps at 7½ ips, ±3 db, 40 to 10,000 cps at 3¾ ips. **Playback equalization:** **NAB Inputs (each channel):** Microphone, phone jack termination, 1 megohm; Line, phono socket termination 250 k ohm. **Input sensitivity (for normal recording level):** 5 millivolts for Microphone, 160 millivolts for Line. **Output (each channel):** 600 ohm cathode follower output for each channel, with phono socket termination. **Output level (each channel):** 1 volt or better (at normal recording level). **Bias erase frequency:** 75 kc with push-pull oscillator for symmetrical wave-form. Bias is adjustable for optimum performance. **Record level indicator (each channel):** VU type meter. **Motor:** Shaded 4-pole induction type. **Fast forward time:** Less than 100 seconds for 1200 foot reel. **Rewind time:** Less than 100 seconds for 1200 foot reel. **Reel size:** 7" or smaller. **Digital counter:** Zero reset with 3 digits. **Controls and switches:** Power switch (off-on); Rewind—forward control (rewind—neutral—forward); Function control (neutral-play-record); Push to record interlock button; record mode switch (left-right-stereo); playback level control, one for each channel, clutched type; record level control, left and right channel controls for microphone and line inputs, clutched type; meter calibrate control, one for each record level meter; Hum-Null, one for each channel; Bias-Adjust, one for each channel. **Tube and diode complement:** (6) 6EU7 tube, amplifier, (1) 12AU7 tube, bias oscillator, (2) Silicon diodes, power supply rectifiers, (4) Crystal diodes. **Power requirements:** 105-125 volts, 60 cps, 65 watts nominal. **Power supply:** Transformer operated, half-wave voltage doubler. **Color combination:** Beige deck and copper-tone control panel. **Dimensions:** Overall: 12" W x 15" D x 8" H. Mounting cutout required: 11¼" W x 14¼" D, 7" required below deck and 1½" required above mounting surface.

Kit AD-12, mechanism only (no electronics) for playback of pre-recorded 4-track stereo or mono tapes through tape head input such as in the Heathkit AA-21, AA-100 or AA-11; easily convertible to a recorder later by adding electronics. 16 lbs. . . . no money dn., \$10 mo. . . . New Special Price... **Only \$99.95**
ADA-22-1, tan carrying case for AD-12 or AD-22, 9 lbs. **\$37.50**
Kit AD-22L, electronics for converting the AD-12 to a recorder. 9 lbs., no money dn., \$7 mo. **\$65.00**

Capture The Fun and Excitement of "Good Times" Wherever You Go With This Portable 4-TRACK STEREO RECORDER!



**NEW
SPECIAL VALUE
PRICE
\$179.95**

- * Includes all amplifiers and speakers needed
- * Records and plays 4-track stereo & mono tapes
- * 7½ & 3¾ ips speeds
- * Microphone & line inputs
- * Clutched, concentric level and tone controls
- * Bar-type level indicators
- * Factory assembled portable case with lift-top lid and swing-out detachable speaker wings
- * FREE head alignment tape

This Christmas and for many years to come, you'll find this versatile Heathkit portable stereo tape recorder adds more enjoyment to your leisure time activities. Use it as an independent recorder or to drive your stereo/hi-fi system or separate speakers. The mechanism is the same as used in the AD-12 and AD-22 opposite. The up-to-date circuit employs 5 dual-purpose tubes and 2 crystal diodes plus a transformer-powered silicon rectifier power supply. Each speaker wing includes a 5" woofer and 3" cone-type tweeter with cables long enough for 8 feet of separation. Check the specifications and order your portable Heathkit recorder now!

Kit AD-72, 43 lbs., no money down, \$17 mo.
New Special Value Price... **\$179.95**

SPECIFICATIONS—Record-play and erase head: 4-track stereo. **Tape speeds:** 7½ and 3¾ ips. **Frequency-power response:** 7½ ips, 50-15,000 cps ±3 db @ 2 watts; 3¾ ips, 50-10,000 cps ±3 db @ 2 watts. **Harmonic distortion:** Less than 2% at full output. **Wow and flutter:** .2% @ 7½ ips, .3% @ 3¾ ips. **Fast forward and rewind time:** Less than 100 sec. for 1200 foot reel. **Maximum reel size:** 7 inches. **Input sensitivities:** Microphone (1 meg.) 1 millivolt; Line (500 K ohm) 100 millivolts. **Motor:** Shaded 4-pole induction. **Monitor:** Low impedance stereo headphones. **Controls:** Function, (Neutral-Play-Record, with interlock); Rewind-Neutral-Forward; Record Mode, (Left, Right, or Stereo); Level (Record and Play, clutched); Tone, (Playback only, clutched). **Power requirements:** 105-125 volts, 60 cps, 85 watts nominal. **Dimensions:** (including speakers) 19½" W x 15¼" D x 9¾" H.

Thousands Have Acclaimed It . . . Famous Heathkit 14-Watt Mono Combination Amplifier



**AA-161
\$29.95**

- Big volume passes extra savings to you
- Features hi-fi rated 14 watt output
- Patented Heath Ultra-Linear® circuit
- Separate bass & treble controls
- Smart charcoal & ivory styling

SP ohn that could be nicer at Christmas than to receive this fine monophonic amplifier . . . loae amplifier that put the true meaning to the words "High Fidelity". Features easy-out circuit with miniature tubes, filament-balance and complete inputs.
Kit AA-161 . . . 17 lbs. . . . no money down, \$5 mo. **\$29.95**

SPECIFICATIONS—Power output: 14 watts Heath Hi-Fi Rating; 16 watts IHFM Music Power Out. (For 2% THD, 1 kc). **Power response:** ±1 db 30-15,000 cps, 14 watts output. **Harmonic distortion:** (For 2% THD, 30 cps to 15 kc, at 14 watts output. **Intermodulation distortion:** 2% or less at 14 watts output using 60 and 6,000 cps signals, 4:1. **Hum and noise:** mag. phono input, 55 db below 14 watts; Tuner and crystal phono, 65 db below 14 watts. **Input sensitivity:** For 14 watts output; mag. phono, 16 ohm; crystal phono, 0.2 v; tuner 0.25 v, with tone controls flat. **Output:** 4, 8 and 16 ohms. **Damping factor:** 10:1. **Controls:** 3-position function selector switch, bass and treble tone controls, volume control. **Tube complement:** 6EU7, 1-6AU6, 1-6AN8, 2-EL84/6BQ5, 1-EZ81/6CA4. **Power requirements:** 117 v, 50-60 cycles, 55 watts. **Color and finish:** Charcoal gray steel cabinet and upper front panel with ivory colored bezel and lower front panel. **Dimensions:** 5" H x 13¾" W x 10¾" D.

Ready For Any Job . . . 25-Watt Combination Amplifier-Preamp



**AA-181
\$42.95**

- Hi-fi rated 25-watt output
- Four front-panel selected inputs
- Separate bass & treble controls
- Smart charcoal & ivory styling

Equal to any task, the AA-181 has inputs for microphone, any phono cartridge, tuner, tape recorder, etc. Add this to your home music system for Christmas.
Kit AA-181, 20 lbs. . . . no money down, \$5 mo. **\$42.95**

SPECIFICATIONS—Power output: 25 watts Heath hi-fi rating; 30 watts IHFM music power rating (0.7% THD @ 1 KC). **Power response:** ±1 db, 30 cps to 15 kc, at 25 watts output. **Harmonic distortion:** Less than 2% at 30 cps-15 KC and less than 0.7% at 1 KC at 25 watts output. **Intermodulation distortion:** Less than 2% at 25 watts using 60 cps and 6000 cps signals 4:1. **Hum and noise:** Microphone -60 db or better; Mag. Phono -55 db or better; Xtal Phono -60 db or better; Auxiliary; 60 db or better. **Input sensitivity:** For 25 watts output with tone controls flat; Microphone; 9 mv; Mag phono; 5 mv (at 1 KC); Xtal Phono; 120 mv; Auxiliary 200 mv. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 9. **Controls:** 4-position selector switch, volume control, bass control and treble control with on/off switch. **Tube complement:** 2-6EU7; 1-12AU7; 2-7591; 1-5AR4; 1-Selenium bias rectifier. **Power requirements:** 117 volts 50-60 cps, 120-135 watts. **Power outlets:** 1 AC receptacle, unswitched. **Indicator:** Neon pilot light. **Color & finish:** Charcoal grey with ivory bezel and lower front panel. **Dimensions:** 13¾" W, x 4-15/16" H, x 9¾" D.

For "Better Listening" Choose From These Famous

Budget-Saver Automatic STEREO/MONO RECORD CHANGER KIT



AD-92
\$46⁹⁰

- * 4-speeds, automatic or manual * Plug-in cartridge head * Big 11" turntable for extra support
- * "Anti-skate" record protection

For deluxe features with an economy-conscious price, choose the Heathkit AD-92 stereo/mono automatic record changer. It has an 11" turntable for better support of 12" records . . . "anti-skate" feature to eliminate damaged lead-in grooves . . . the plug-in cartridge head gives easy access for inspection or replacement . . . a simple wiring change converts it from stereo to mono cartridges . . . a filter eliminates switching noises . . . the 4-pole hum-shielded motor is dependable and quiet . . . the mechanism shuts off automatically at the end of the last record . . . color styling is in brown and beige to complement any decor. This Christmas, choose the AD-92 record changer kit for extra savings, extra performance.

Kit AD-92 . . . with C cartridge . . . 12 lbs. . . . no money dn., \$5 mo. **\$46.90**
 Kit AD-92 . . . with A, B, D, or E cartridge (specify) . . . no money dn., \$5 mo. **\$49.90**
 ADA-80-1, 45 rpm spindle, 1 lb. **\$2.95**

SPECIFICATIONS—Speeds: 16, 33 $\frac{1}{3}$, 45 and 78 rpm. **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. **Power requirements:** 105-130 volts, 60 cycles AC. **Dimensions:** 13 $\frac{1}{4}$ " W x 11 $\frac{1}{2}$ " D x 5-11/16" above and 2 $\frac{1}{2}$ " below mounting board.

Changer Bases for AD-92 Models

Handsome, massive styling in rich walnut finish or unfinished for custom installations in the finish of your choice. Pre-cut for Heathkit changers. Size 14 $\frac{7}{8}$ " W x 13 $\frac{1}{2}$ " D x 3 $\frac{3}{8}$ " H.

Assembled ADA-50W (walnut) . . . 4 lbs. **\$5.95**
 Assembled ADA-50U (unfinished) . . . 4 lbs. **\$4.95**

New Compact Garrard "Autoslim/P" AUTOMATIC STEREO/MONO CHANGER



ADP-53
\$39⁵¹

- * 4 speeds, automatic or manual * Intermix all size records of same speed * Turntable-type arm with plug-in head * Regular \$39.50—with cartridge for just 1c more

New styling, new features, new low cost. Compact . . . just 6 $\frac{1}{2}$ " in height with base (7 $\frac{1}{8}$ " with base and legs.) New cast aluminum tone arm with plug-in head has extra-sensitive stylus pressure control. Separate spindles for automatic or manual use, 4-pole shaded motor with dynamically balanced rotor for constant speed without hum or vibration. Plug-in installation. Fully assembled, complete with your choice of cartridge (pg. 29), for just 1c more than the regular \$39.50 price!

ADP-53, with A, B, C, D, or E cartridge . . . (specify), 10 lbs. . . . no money down, \$5 mo. . . . **\$39.51**
 ADA-53-1, Garrard LRS5 45 rpm spindle, 1 lb. **\$3.80**
 ADA-53U, Garrard matching base (unfinished), 3 lbs. **\$4.45**
 ADA-53W, Garrard matching base (walnut), 3 lbs. **\$4.95**

SPECIFICATIONS—Speeds: 16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45, and 78 rpm. **Motor:** 4-pole shaded, hum shielded. **Tracking:** will track per cartridge specifications. **Color:** gray and silver. **Wiring:** stereo, 4-pin/5-wire w/separate ground connection for hum elimination. **Cables furnished:** line cord and audio. **Power requirements:** 100-130 volts, 60 cycles AC. **Dimensions:** 14 $\frac{1}{4}$ " W x 12 $\frac{1}{2}$ " D x 4 $\frac{1}{2}$ " above and 2 $\frac{1}{2}$ " below top of motor board.

For the Audio Connoisseur . . . the Deluxe Fairchild TURNTABLE for just \$124.95!



ADP-21
\$124⁹⁵

- * Assemble the turntable & save * Two speeds—33-1/3 & 45 rpm * Speed sentinel controls
- * Anti-skate * High compliance stereo cartridge with .0007 diamond stylus

Here's the way to save on the price of the famous Fairchild Turntable, Tone-Arm, and Base . . . buy the turntable in kit form from Heath. It's easy to assemble . . . and to make it completely simple, the tone arm and base come complete, ready for installation. Fairchild "know-how" is evident throughout . . . push-pull knob selection of the two speeds, speed control adjustment of $\pm 1\frac{1}{2}\%$, solid cast aluminum turntable, rifle-drilled babbitt bearing well. The arm (Fairchild 500) has "anti-skate" and dynamic balancing. The moving magnet cartridge (Fairchild SM-2) has diamond stylus, is completely compatible for stereo or mono records. Shock mounted top plate is of walnut; base is in matching walnut.

Kit ADP-21 . . . 26 lbs. . . . no money dn., \$12 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 10⁻⁶ cm/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.



Technician Would Enjoy Receiving

Here is a perfect starter system for the individual desiring to enter the profitable field of audio and high fidelity servicing at tremendous savings! All are professionally designed instruments that will handle practically any service requirement.

* INCLUDES HEATHKIT "EXTRA-DUTY" WIDE BAND 5" OSCILLOSCOPE

- Full 5 mc bandwidth
- Heath patented sweep circuit
- Push-pull vert. & horiz. amplifiers

* INCLUDES HEATHKIT DELUXE "SERVICE-BENCH" VTVM

- Large easy-to-read 6" 200 ua meter
- Gimbal bracket mount
- Single ac-ohms/dc test probe with switch

* INCLUDES HEATHKIT AUDIO ANALYZER

- Built-in AC VTVM, wattmeter and IM analyzer
- Unique switching system for simplified operation



IO-12 Wide Band 5" Scope..... \$76⁹⁵

IM-22 Audio Analyzer..... \$56⁹⁵

IM-13 VTVM..... \$32⁹⁵

This extra-duty wide-band oscilloscope is one of the most versatile test instruments you can own! With it you can visually trace signals, locate defective stages, check for waveform distortion, make stage gain measurements and a myriad of other tests in electronic circuitry . . . swiftly and efficiently! Its outstanding array of features combined with the Heath patented sweep circuit make it ideal for specialized as well as general circuit investigation . . . including color TV. Features include push-pull output amplifiers, positive trace position controls, peak-to-peak calibration reference voltage, 3-step frequency compensated vertical input attenuator, automatic sync, Z-axis input, 5UP1 CR tube and professional styling. 2 circuit boards and wiring harness simplify assembly.

Kit IO-12, 24 lbs., no money dn., \$8 mo... \$76.95
See pg. 19 for combination offer with EF-2 Applications Kit.

SPECIFICATIONS—(Vertical) Sensitivity: 0.025 volts 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:** 14 1/2" H x 8 3/4" W x 16" D.

Everything you need for complete IM analysis of audio and high fidelity equipment is provided in this single, compact, easy-to-use instrument. It combines the functions of an AC VTVM, wattmeter and IM analyzer at tremendous savings over three separate instruments. The unique switching system employed permits use of any instrument alone or combines functions internally for greatly simplified operation. All tests may be performed using only the two sets of test leads furnished.

Non-inductive load impedances for 4, 8, 16 and 600 ohms are built-in and a high impedance position is provided for stage-to-stage and other circuit analysis. Easy to build and use with complete instructions furnished.

Kit IM-22, 12 lbs., no money dn., \$6 mo... \$56.95

SPECIFICATIONS—Frequency response—AC VTVM: 10 cycles to 100 kc ±1 db. **Wattmeter:** 10 cycles to 50 kc ±1 db. **I.M. analyzer high pass filter:** 2000 cps to 12,000 cps. **I.M. analyzer low pass filter:** 10 cps to 600 cps. **Range AC VTVM:** .01, .03, .1, .3, 1, 3, 10, 30, 100, 300 volts RMS full scale. **DBM:** -40, -30, -20, -10, 0, +10, +20, +30, +40, +50. Reads from -65 to +52 dbm. **Wattmeter:** 0.15 mw, 1.5 mw, 15 mw, 150 mw, 1.5 w, 15 w, 150 w, full scale. Maximum continuous power 25 watts. Intermittent power to 50 watts. **I.M. analyzer:** 1%, 3%, 10%, 30%, 100% full scale. **Input impedance—AC VTVM:** 1 megohm or 4, 8, 16 or 600 ohm switch selected. **I.M. analyzer:** 1 megohm or 4, 8, 16 or 600 ohm switch selected. **Wattmeter:** 4, 8, 16 or 600 ohm internal load, 10,000 ohm across external load. **Output impedance—Low and high frequency output:** 3000 ohm (600 ohm when shunted with 750 ohm resistor). **Internal generator frequencies—Low frequency:** 60 cycles. **High frequency:** Approximately 6 kc. **Accuracy—AC VTVM and Wattmeter:** Within 5% of full scale. **I.M. Analyzer:** Within 10% of full scale. **Power requirements:** 105-125 volts 50/60 cycles 20 watts. **Dimensions:** 13" W x 8 3/4" H x 7" D.

The new Heathkit "Service-Bench" VTVM is one of the finest investments you can make in a test instrument. Its dependable, time-proven circuitry has made it the world's largest selling VTVM! New low-profile styling with gimbal mount permits neat, space-saving under-shelf installation and allows tilting meter to any desired angle for best viewing. Other quality features include precision 1% resistors and high 11-megohm input impedance for high accuracy, large 6" meter with multi-colored scales, high-contrast panel screening, vernier action controls for accurate Zero and Ohms adjust settings and a new single, AC-Ohms/DC test probe with switch. Easy to build. Less battery.

Kit IM-13 . . . 7 lbs. . . . no money down, \$5 mo... \$32.95

See pg. 19 for combination offer with EF-1 Applications Kit.

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, x1K, 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:** 1 megohm shunted by 40 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:** 5" H x 12 1/2" W x 4 1/2" D.

Versatile Oscilloscope Probe Accessories

Extend Scope Use . . . Demodulator Probe Kit Permits oscilloscope observation of modulation waveform of RF and IF signals. Functions as an AM detector to pass only modulation of signal and not signal itself. Voltage limits are 30 volts RMS and 500 volts DC. Useful in all types of radio and TV servicing.

Kit 337-C, 1 lb..... \$3.50



Low Capacity Probe Kit

Reduces Circuit Loading Essential for high frequency work. Minimizes loss of gain, circuit loading or distortion caused by overloading of scope. Switch on probe allows direct or X10 attenuated operation. A variable capacitor permits adjustment to match scope input.

Kit PK-1, 1 lb..... \$4.95



Quality Test & Lab Instruments

Test Tubes at Low Cost with this Heathkit Tube Checker



IT-21
\$44.95

- * Latest design features & styling
- * Tests all tube types including new compactron, nuvistor, novar & 10-pin miniatures
- * Multi-colored bad-?-good meter scale
- * Color-coded wiring harness for easy assembly

SPECIFICATIONS—Tests: Emission, short, leakage, open element, filament continuity. **Sockets:** 4-pin, 5-pin, 6-pin, 7-pin large and pilot light, 7-pin miniature, octal, loctal, 10-pin miniature, 9-pin novar, 12-pin compactron, 5-pin nuvistor, 7-pin nuvistor. **Meter:** 1 ma, BAD-?-GOOD scale, illuminated. **Line voltage adjustment:** Step type. **Roll chart mechanism:** Constant tension, free-rolling, thumb-wheel operation, illuminated. **Filament voltage:** .63, 1.4, 2, 2.95, 2.5, 3.15, 4.2, 4.7, 5, 6.3, 7.5, 9.45, 12.6, 19.6, 25, 32, 50, 70, 110 V AC. **Element test voltages:** 30, 100, 250 V AC. **Power requirements:** 105-125 V AC, 50/60 cycles. **Dimensions:** 5 1/2" x 8 1/2" x 13".

Advanced Capacitor Testing Facilities at Low Cost!

- * Safely tests miniature electrolytics
- * 16 Leakage testing voltages
- * Direct-reading scales

This deluxe capacitor checker tests all types for value, leakage, shorts and power factor and also measures resistance from 5 ohms to 50 megohms. Capacitance measurements are made in four ranges from 10 mmf to 1000 mfd, all on direct reading scales . . . no involved calculations. The specially designed low voltage bridge circuit permits safe testing of miniature electrolytics used in transistorized equipment. Extremely useful—a valued gift.

Kit IT-11, 7 lbs., no money down, \$5 mo.

\$29.95

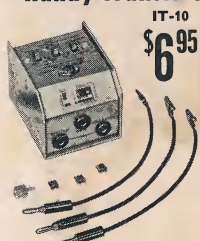


IT-11

\$29.95

SPECIFICATIONS—Capacitance, 4 ranges: 10 uuf to .005 ufd; .001 ufd to .5 ufd; .1 ufd to 50 ufd; 2 ufd to 1000 ufd. **Capacitor leakage:** DC test voltages from 3 to 600 volts in 16 steps. **Resistance, 3 ranges:** 5 ohms to 5000 ohms; 500 ohms to 500 K ohms; 50 K ohms to 50 megohms. **Comparator circuit:** External standard R, L or C; Max. Ratio 25-1. **Power supply:** Transformer-operated, half-wave rectifier. **Power requirements:** 105-125 volts AC, 50/60 cycles, 30 watts. **Dimensions:** 9 1/2" H x 6 1/2" W x 5" D.

Handy Transistor-Diode Checker



IT-10
\$6.95

- Tests low & high power transistors
- Tests forward & reverse current of diodes
- Battery powered for portability

Tests for short, leakage, open element and current gain. Versatile switching identifies transistors as to PNP or NPN type, eliminates transferring of test leads for diode testing. Removable test leads are provided for transistors which do not fit tester socket. Less batteries.

Kit IT-10, 2 lbs. \$6.95

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 1/2" H. x 3 3/4" W. x 3 3/4" D.

Visual-Aural Signal Tracer

- Traces RF, IF and audio signals
- Locates noisy and intermittent components
- Doubles as utility amplifier, test speaker

Saves time in servicing! Traces RF, IF and audio signals to quickly isolate a defective stage in receiver or amplifier. Also serves as utility amplifier for testing tuners, record changers, microphones, etc. Audio and RF inputs are selected by switch on probe body.

Kit IT-12, 6 lbs. \$19.95

SPECIFICATIONS—Power supply: Transformer operated. **Power requirements:** 117 volts 50/60 cycles AC, 25 watts. **Tube complement:** 12AX7, 12CA5, 1629. **Speaker:** 3 1/2" PM. **Probe and test leads:** 4' input lead for RF and audio with switch on probe body, 2-3' panel test leads with alligator clips. **Dimensions:** 4 1/2" W x 7 1/2" H x 4" D.



\$19.95

IT-12



IP-32
\$56.95

Kit IP-32, 16 lbs., no money down, \$6 mo. \$56.95
Assembled IPW-32, \$9 mo. \$84.95

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 1/2" H x 7" D.

Laboratory Variable-Voltage Regulated Power Supply

- Furnishes B+, bias and filament voltages
- DC output variable from 0 to 400 volts
- Panel meter monitors output voltage & current

Experimenters and engineers rate this instrument as one of the most valuable in any lab! Ideal for all types of circuit design and development work. Rugged well-rated components are used throughout for long life and dependable service.

3-Decade Condenser Kit

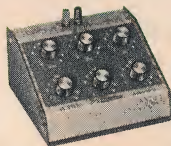


IN-21
\$17.95

Provides precision capacitor values in 100 mmf steps from 100 mmfd to 0.111 mfd. Ideal for substitution use in tuned circuits, bridge circuits and filter networks. Precision 1% silver-mica capacitors are rated at 350 volts DC, continuous; 500 volts DC intermittent; and 1000 volts DC test. Low-loss ceramic wafer switches.

Kit IN-21, 3 lbs. \$17.95

6-Decade Resistance Kit



IN-11
\$24.95

Ideal for lab use! Provides any resistance value from 1 ohm to 999,999 ohms in one ohm steps . . . all at 1/2 of 1% accuracy. Rated at 1 watt. Valuable for use as a multiplier, shunt, substitution resistor or as an arm for AC and DC bridges. Switches have make-before-break contacts for smooth control action without opening or shorting circuit.

Kit IN-11, 3 lbs., \$5 mo. \$24.95

Condenser Substitution Kit



IN-22
\$5.50

Contains 18 silver-mica and plastic-molded tubular capacitors in standard E.I.A. values from .0001 to .22 mfd. All are rated at 600 volts except the two largest which are rated at 400 volts. An 18 position switch allows individual selection of any value. Test leads included.

Kit IN-22, 1 lb. \$5.50

Resistance Substitution Kit



IN-12
\$5.95

Provides convenient switch-selection of any one of 36 E.I.A. standard 10% 1-watt resistors, ranging in value from 15 ohms to 10 megohms. A slide switch selects high or low resistance ranges. Housed in an attractive black bakelite case. Many uses in servicing!

Kit IN-12, 1 lb. \$5.95

Tests all tube types encountered in everyday radio & TV servicing! . . . including new compactron, nuvistor, novar and 10-pin miniature tubes. Tubes are tested for quality on the basis of total emission, and for shorts, leakage, open elements and filament continuity. Tube quality is read on a multi-colored "Bad-?-Good" meter scale. A neon bulb indicator shows filament circuit continuity and leakage or shorts between elements. Flexible overall operation is made possible by the use of multiple filament voltages, adjustable cathode current, variable meter sensitivity and individual tube element switching. Thirteen 3-position lever switches allow checking each tube element individually for open or short conditions. The specially-designed roll chart mechanism features smooth free-rolling action and is spring loaded to keep the chart taut at all times for easy reading of tube setup data. A thumbwheel drive knob on each side of the panel permits either hand operation. Chart and meter are illuminated. Neat, professional wiring and simplified assembly is assured with color-coded wiring harness and easy to follow instructions. Handsomely styled and an exceptionally fine value.

Kit IT-21, 12 lbs., no money down, \$5 mo. \$44.95

"In-Circuit" Capaci-Tester—Handy Gift

- * Detects opens, shorts and intermittents
- * "Eye" tube indicator

With this kit you can test capacitors right in the circuit without disconnecting leads. Detects open capacitors from 50 mmf up, not shunted by excessively low resistance, and shorted capacitors up to 20 mfd shunted by not less than 10 ohms. Intermittents are noted by a flickering of the "eye" tube indicator. Checks molded, mica, and ceramic types.

Kit IT-22, 4 lbs. \$10.95

IT-22
\$10.95



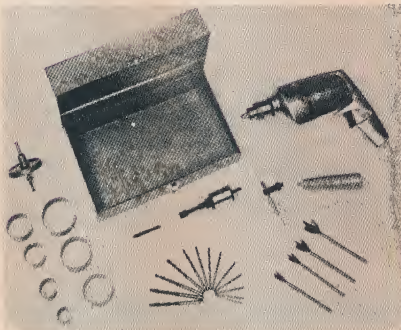
Heath-Recommended Best Buys

Selected Gift Suggestions At Big Savings

Heathkit is proud to offer this "extra-value" selection of supplementary gift suggestions for hobbyists. These are Heathkit-related products and special items we consider to be "best-buys". All items are guaranteed and may be purchased on Heath's liberal no-money-down time payment plan. Take advantage of these special offerings now . . . order those you've been wanting . . . fill out your gift list . . . and save with these "best-value" prices.



Top-Value Industrially Rated Power Tools Famous ShopMate Heavy-Duty Tools At Big Savings



1. NEW SHOPMATE "SUPER" DRILL KIT, \$27.95 LIST ONLY \$20.95

Here's real value! A super 29 piece drill kit, not to be compared with ordinary sets. Includes the new ShopMate $\frac{3}{8}$ " drill (model 1838 described opposite) plus all these handy accessories: 7-in-1 Hole Saw Set (sizes: 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 1 $\frac{3}{4}$ ", 2", 2 $\frac{1}{4}$ ", 2 $\frac{1}{2}$ ") cuts wood, wall board and plastic; Power Screwdriver Attachment with Phillips-Head detachable bit; 13-piece Alloy Tool Steel Twist Drill Set (sizes: 1/16" to 1/2" graduated by 64ths, precision ground, hardened and tempered); 4-piece Power Bit Set (sizes: 3/8", 1/2", 5/8", 1"). All in a gray hammerloid finish box with clasp and handle . . . all for just \$5.07 more than cost of drill alone!

GDP-283, 10 lbs., Mfrs. list \$27.95. **Net \$20.95**

2. NEW SHOPMATE 1850 $\frac{1}{2}$ " DRILL, ONLY \$19.95

One-third horsepower! U. L. listed as industrial tool. Has a 3.6 amp. motor; balanced armature; multi-ball thrust and self-lubricating bronze bearings; no-load 500 rpm, full-load 370 rpm; drills $\frac{1}{2}$ " hole in steel, 1" in hardwood; 3-jaw geared chuck with key, lock-type trigger; aux. handle; 6', 3-wire cord & plug.

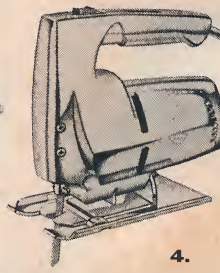
GDP-293, 7 lbs., Mfrs. list \$26.95. **Net \$19.95**



2.



3.



4.

3. NEW SHOPMATE MODEL 1838 $\frac{3}{8}$ " DRILL, ONLY \$15.88

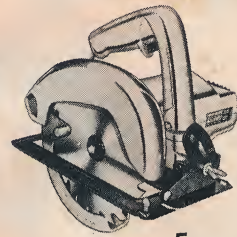
Nearly $\frac{1}{4}$ horsepower of turning force; powerful 3.4 amp motor has balanced armature; no-load speed 1000 rpm, full-load 600 rpm; multi-ball thrust and self-lubricating bronze bearings; drills up to $\frac{3}{8}$ " steel, $\frac{1}{2}$ " wood. 3-jaw geared chuck with key; lock-type trigger; auxiliary handle; 6', 3-wire cord & plug. U. L. listed as Industrial tool. 10" long.

GDP-261, 6 lbs., Mfrs. list \$21.95. **Net \$15.88**

4. NEW SHOPMATE 1810 SABRE SAW—ONLY \$17.95

New Quick-Stroke Sabre Saw cuts $\frac{1}{2}$ " mild steel, 1" non-ferrous metals, up to 4 x 4 hardwood, or intricate scroll work. Quick-Return Cycle Reciprocator with 1" stroke for 30% faster action . . . 2300 strokes per min. Makes its own starting hole, cuts to 45° bevel on either side. Rugged 1/3 hp., 3 amp. fan cooled motor with built-in blower to keep saw line free of dust. 6', 3-wire cord, and 3 blades. U. L. listed as industrial tool. 8 $\frac{1}{4}$ " L x 7 $\frac{1}{4}$ " H x 3-11/16" W.

GDP-303, 7 lbs., Mfrs. list \$24.95. **Net \$17.95**



5.



6.

5. NEW SHOPMATE MODEL 1870 7" POWER SAW, ONLY \$29.88

Fast cutting action with powerful 1 $\frac{1}{2}$ hp. 12 amp. fan-cooled motor (no-load, 5500 rpm; full-load, 3200 rpm). Balanced armature, Life-Weld wiring and precision bearings and gears. Blade guard has retracting lever for "pocket cuts". Adjustable depth of cut and bevel, to 2 $\frac{3}{4}$ " @ 90°, 1 $\frac{1}{2}$ " @ 45°. Blade dia. 7" with $\frac{3}{8}$ " round arbor hole. 6', 3-wire cord & plug. 11 $\frac{1}{2}$ " L x 8 $\frac{3}{4}$ " W x 7 $\frac{1}{4}$ " H.

GDP-323, 17 lbs., Mfrs. list \$39.95, no money dn., \$5 mo. **Net \$29.88**

6. NEW SHOPMATE MODEL 1800 SANDER, ONLY \$17.95

The 3/16" orbital sander action gives a smooth finish without scoring the surface. Fast! . . . 4500 oscillations per minute by the powerful 1/3 hp., 3 amp. motor. Has direct gear reduction drive, no belts or pulleys. Two quick-change lever clamps keep tension on the sandpaper for long life. Aluminum die-cast housing with mirror finish in the Hex-O-Bal design for easy handling. Concave, slide switch, 6', 3-wire cord. 9 $\frac{1}{2}$ " L x 7 $\frac{1}{4}$ " H x 3 $\frac{1}{4}$ " W.

GDP-313, 7 lbs., Mfrs. list \$24.95. **Net \$17.95**

Proper Tools Make Kit-Building Easy

WELLER 8200 DUAL-HEAT SOLDERING GUN

Save time and get professional soldering results in your kit building with this Weller Soldering Gun. Switches instantly from "high" (140 watts) to "low" (100 watts) with Triggermatic control. Pre-focused spotlight illuminates work. Entire kit includes soldering gun, soldering aid, cleaning brush, and packet of radio solder. 3 lbs.

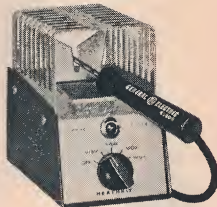
Model 490-26. **\$5.83**



HEATHKIT SOLDERING IRON KIT

Includes 6 volt, 25 watt General Electric mid-type Industrial soldering iron with iron-clad tip. Power supply is transformer operated; has 4 switch-selected heat ranges plus "off" position; can be connected for high or low line voltage to effectively give you selection of 8 heat ranges. While in holding clip, iron is shielded by "cage".

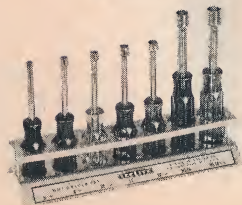
Kit GH-52, 5 lbs. **\$14.95**



XCELITE #37 NUTDRIVER SET

For Heathkit building or "fix-it-yourself" jobs around the house. Seven color-coded nutdrivers in a handy self-supporting rack. Tough plastic handles. Polished alloy steel shafts. Contains the following sizes: 3/16", 1/4", 5/16", 11/32", 3/8", 1/2" and 9/16". Shanks are drilled 1-1/4" deep to allow tightening over long screws. The two largest have hollow shafts for nut installation on controls, switches, etc. 2 lbs.

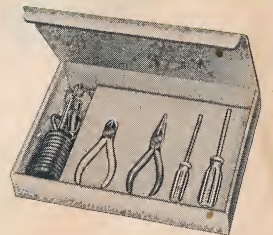
Model 490-27. **\$6.42**



HEATHKIT BASIC TOOL SET

Provides all the basic tools required to build practically any Heathkit. Kit contains longnose pliers, diagonal sidecutters, two screwdrivers and a 30-watt soldering iron. Pliers and sidecutters are equipped with vinyl insulated handles. All tools are top quality case-hardened steel for rugged duty and long life. Also handy for many repair jobs around the home. 2 lbs.

Model TK-1. **\$9.95**



HEATHKIT DELUXE TOOL SET

Here is a fine assortment of quality tools that will make your Heathkit building or any fix-it task easy—and fun! Includes: a combination wire stripper & diagonal sidecutter, midjet longnose pliers, three screwdrivers, Weller 8200 dual-heat soldering gun, soldering instruction booklet, solder joint brush, radio solder, 5 nut drivers, nut starter and soldering aid. 6 lbs.

Model GH-10. **\$19.95**



SPEEDX WIRE AND CABLE STRIPPER MODEL 766-1, ONLY \$5.89

Here is a precision tool every workshop should have in its tool rack. No special skill is required to operate it, just insert the wire into its jaws and squeeze the handle . . . the insulation is off in a flash! This heavy-duty mechanism has graduated jaws to accept number 10, 12, 14, 16, and 22 wire. Manufactured by General Cement for rugged service. 2 lbs.

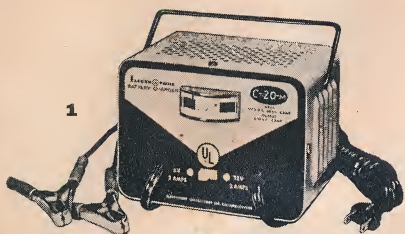
GDP-663, Mfrs. list \$9.95. **Net \$5.89**



More Best Buys for Added Performance

SAVE UP TO 50% ON ELECTROTONE ALL-PURPOSE BATTERY CHARGERS

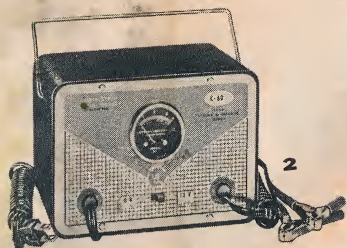
- * U.L. Approved
- * 1-Year Guarantee
- * Big Savings



1 ELECTROTONE C-20-M CHARGER, \$18.95 LIST, ONLY \$9.58 • Ammeter Monitor • Circuit-breaker • 2 to 3 amp current. Ideal for overnight charging, this compact charger is capable of delivering 3 amps. Uses full-wave high density selenium rectifiers. Has a selector switch for 6 and 12 volt batteries. An ammeter continuously monitors the rate of charge. An Automatic-reset circuit breaker provides complete protection of both charger and battery. The "Super-Grip" copper-plated clips for direct battery terminal charging will handle 50 amps. The instrument case is louvered for cool operation and has a black anodized handle for easy carrying. Model GDP-112, 4 lbs., \$18.95 list, ... **Net Only \$9.58**

2 ELECTROTONE C-60 CHARGER, \$29.75 LIST, ONLY \$14.73 • Professional Ammeter • Circuit Breaker • 6 to 8 amp current. This heavy duty battery charger will deliver up to 8 amps. Uses full-wave, high density selenium rectifiers. A slide-type switch selects either 6 or 12 volt output. The ammeter continuously monitors the rate of charge. The automatic-reset circuit breaker provides protection for both charger and battery. "Super-Grip" copper-plated 50 amp. clips permit direct battery terminal charging. The wrinkle-finish cabinet is perforated for cool operation and has a black anodized handle for carrying purposes. Model GDP-122 ... 7 lbs., \$29.75 List, ... **Net Only \$14.73**

3 ELECTROTONE C-100 CHARGER, \$56.95 LIST, ONLY \$28.68 • Three Charge Rates • Voltmeter and Ammeter • "Off" Switch • Charges through cigarette lighter socket • Pilot Lights. Fulfills every charging need! The charger-selector chooses three charging rates ... "slow", "medium", and "fast" (provides enough charge to start engine in ten minutes). Delivers up to 10 amps. Voltmeter checks dynamic condition of battery, shows if battery is 6 or 12 volts, and indicates the cut-off setting of the generator. Easy to use, just plug into cigarette lighter socket to charge battery; or use the copper-plated 50 amp clips directly on the battery terminals. 3-way toggle switch selects 6-volt, 12-volt, or "off" positions. Selenium Rectifiers. Circuit breaker protection. Louvered cabinet with satin chrome handle. Model GDP-132 ... 9 lbs., \$56.95 List, no money down, \$5 mo. ... **Net Only \$28.68**

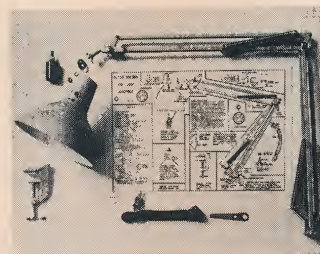


UNIQUE ACCESSORIES WITH MANY PRACTICAL PURPOSES

PROPANE GAS LANTERN—ONLY \$11.95, SAVE \$5

For outdoor living with indoor lighting. Dual beam from built-in reflector: 300° frontal light, 360° base light. Adjustable from soft glow to bright beam. Stormproof, stays lit even in heavy winds. Safe, no dangerous fuel, uses safe, disposable propane gas cylinder (included). Fuel lasts from 10 to 14 hours of intermittent use. Steel body with Pyrex globe, size 11" H x 5 1/2" W; no generators or other working parts to clog or replace. Warranted for 1 yr.

GFP-23, 8 lbs., mfrs. list \$16.95 ... **Net \$11.95**



GDP-202,

Z-LYTE MODEL 210 INCANDESCENT EXTENSION LAMP IN KIT FORM—ONLY \$9.95 • Cut your extension lamp costs in half with this unique lamp kit. It's really a semi-kit, just attach the socket, shade and cord, the precision spring-balanced extension arm is completely assembled when you receive it. Takes about one-half hour for anyone to finish. Has 45" reach, 360° sweep, vented shade, clamps to desk or table. U.L. approved. Less bulb.

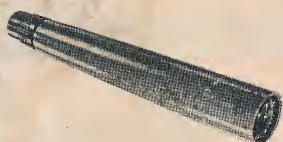
GDP-202, 6 lbs., \$14.50 mfrs. list, ... **Net \$9.95**

GFP-23,

300-POWER REFLECTING TELESCOPE MODEL 11-TEA "LUNAGROSSO"—ONLY \$79.95, SAVE \$50

Features 900-MM focal length 4 1/2" parabolic mirror, two TASCOS quartz mirrors, 45X and 150X eyepieces, 5X finderscope, sun and moon filters, 2X Barlow lens which doubles eyepiece powers, heavy duty tripod with equatorial mount and flexible controls for easy adjustment and tracking, and metal dust cover.

GDP-273, 35 lbs., \$129.95 Mfrs. list, no money down, \$8 mo. ... **Net \$79.95**



GFP-43,



GDP-273,

SPORTSMAN'S TELESCOPE—BAUSCH & LOMB 10X—\$9.95

Ideal for hunting, target spotting, boating, or bird-watching. Compact—10" long, wt. 9 oz. 6 element color corrected glass lens system. Wide field: 15' at 100 yds. Easy focusing. Weather sealed. Max. resolution for 10 power scope.

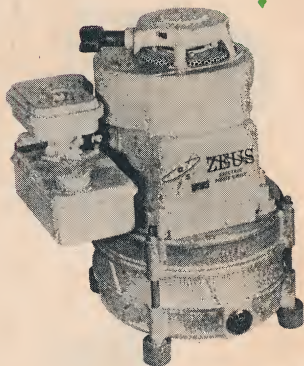
GFP-43, 1 lb. Mfrs. list \$10.93 ... **Net \$9.95**



ZEUS PORTABLE KILOWATT ELECTRIC GENERATOR, MODEL ASP-1000, ONLY \$149.95

For standby power, on-the-job power, emergencies, amateur radio field days, camping, the Zeus provides electricity anywhere, anytime. Trouble-free generator uses permanent magnet alternator, no brushes, no armature windings, no belts, no slip rings, or commutators; reduces radio noise to minimum. Just one moving part, the permanent magnet alternator. Output 1000 watts, 115 v., 60 cycles, 8.7 amps., single phase, 2 wire. Outlet, three prong plug. Powered by single cylinder Briggs & Stratton Model 80502 2.5 H.P., 4 cycle gasoline engine (2 1/2" bore, 1 1/2" stroke, 7.75 cu. in., 3600 rpm) with recoil starter. Oil capacity 1 1/4 pints; fuel capacity 1 quart (uses 1 quart per kilowatt hour). Air vane type governor automatically regulates voltage and frequency of generator output. Air cleaner has oil-foam "no-spill" feature with washable polyurethane element. Muffler is low tone silencer for 33% less noise. Size: 15" H x 13 1/2" W x 13" D. Wt. 63 lbs. Put this handy generator in your home for fun and complete safety.

GDP-933, 65 lbs., Mfrs. list \$197.50 no money dn. \$16 mo. ... **Net \$149.95**



PROPANE TORCH KIT—ONLY \$6.95, SAVE \$3

The tool of 101 uses! From cellar to roof, you'll find this torch kit the handiest for any job ... sweating copper tubing, paint removing, soldering, tile setting, lighting charcoal fires, etc. Included in this kit is a pencil burner unit, utility burner head, soldering tip, flame spreader, flint spark-lighter, fuel cylinder, and a free handsome all-metal, all-purpose carrying case. Add this unique torch kit to your workshop accessories at this low price.

GFP-13, 6 lbs., mfrs. list \$9.95 ... **Net \$6.95**

...Ideal Gift Values!



Now An Amazing FM Wireless Microphone For As Low As \$39.95 . . . The New KINEMATIX IMP II

- Operates on 88-108 mc FM band—Use with any FM broadcast receiver
- Compact . . . small as a pack of cigarettes
- Built-in pin head microphone
- Wireless . . . transmits with perfect fidelity up to 200 ft. away. Picks up voices 40 ft. away!
- 101 uses for industry, home, office . . . saves time and steps
- Not a kit . . . ready to use

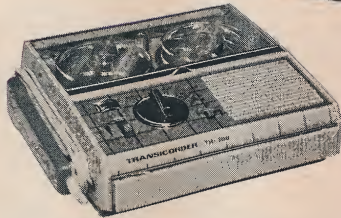
Open up a new world of practical uses never before economically possible with this amazing new low-priced Kinematix Imp II Wireless Microphone! Use it with a large speaker FM radio as a public address system; to take inventory in plants or stores with a stationary tape recorder; as a burglar alarm; as a highly sensitive baby sitter; or even to amplify an electric guitar through your hi-fi system. The number of uses are limited only by your imagination! And it works so simply and easily . . . just tune transmitter to a blank spot on any FM tuner, table model or portable and you're ready for crystal-clear broadcasting. The absence of wires, coupled with its "shirt-pocket" size and light weight, leave you free to traverse stairs, crawl around bulky objects, carry cumbersome items, write, or do just about any type of work. Uses a

readily available Mercury battery #TR-126 that gives you 30 hours of static-free broadcasting. Start enjoying the step-saving convenience of "wireless" transmitting by ordering one of the three amazingly low-priced models this Christmas. All models come with a handsome black leather case. Less batteries.

- ADP-773, less built-in microphone, requires external dynamic microphone . . . 1 lb. . . . no money dn., \$5 mo. . . . **\$39.95**
- ADP-783, with built-in microphone . . . 1 lb. . . . no money dn., \$5 mo. . . . **\$49.95**
- ADP-793, with contact microphone for electric guitars . . . 1 lb. . . . no money dn., \$6 mo. . . . **\$59.95**

SPECIFICATIONS—Chassis: Chrome-plated steel. **Frequency:** 88-108 mc, FCC "type approved". **Range:** 175-225 ft. **Input impedance:** (for external microphone only) 1000 ohms. **Size:** 3" x 1 1/8" x 2 1/4" (with case), 2 3/4" x 1" x 2 1/4" (without case). **Weight:** 7 1/2 oz. (with case), 6 oz. (without case). **Power supply:** Mercury battery #TR-126. **Guarantee:** 90 days.

ADP-773
\$39.95



TRANSCORDER TR-300 PORTABLE TAPE RECORDER, ONLY \$39.95

At home, at work, at play, this handsome little tape recorder is ready to serve you. Put one in the office and one in your car for dictation purposes . . . take one along for conference reporting . . . use one at school in many teaching situations . . . students can use them for practicing . . . families can use them for more fun at get-togethers. All-transistor circuit is battery powered; separate batteries are used for the tape motors. Simple mechanism uses no capstan and consequently does not have constant speed from start to finish of reel; tapes should be recorded and played back on the same or another identical machine for best results. Speed may be adjusted by control knob. Tape handling functions are controlled by single knob. Has volume control, Level Meter, Magnetic Microphone with Remote Control switch, and Fast-Forward switch. Records half-track monophonic on standard 3" reel with a response of 300-4,500 cps. Output power of 150 milliwatts to a built-in 2 1/2" PM speaker. Handsome two-tone plastic case with built-in handle measures 8" W x 7 1/2" D x 2 1/2" H; weighs just 3 lbs. with microphone and batteries (Included).

GFP-63, 4 lbs., no money dn., \$5 mo. . . . **\$39.95**



ROBINS RECORD CARE KIT

#ESK-3 ONLY \$3.38
Includes stylus pressure gauge, microscope, table level, cleaning cloth, stylus brush, record brush, tone arm lift.
ADP-623, 1 lb., Mfrs. list \$5,
Net. . . . **\$3.38**

NEW STEREO-4 TAPE SPLICER—ONLY \$7.95



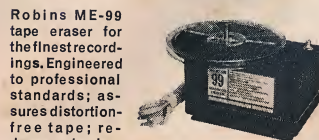
Robins Deluxe "Gibson Girl" Stereo-4 tape splicer #TS-8D splices 4-track stereo tapes without sacrificing program material on outside tracks. Cuts diagonally; trims "Gibson Girl" waist on sides of splice; blade centering adjustment.
Model ADP-73, wt. 1 lb.
List \$11.50. . . . **Net \$6.95**

NEW TAPE HEAD DEMAGNETIZER—ONLY \$5.75



Robins model HD-6 demagnetizer removes magnetization of tape heads to reduce noise level, harmonic distortion, and to improve signal to noise ratio. AC electromagnet with extended pole piece for easy access to heads; case 1 1/2" dia.; 110v., 60 cycles only.
Model ADP-83, wt., 1 lb. list
\$11.50. . . . **Net \$5.75**

BULK TYPE ERASER—ONLY \$26.15

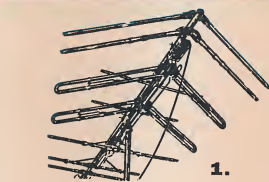


Robins ME-99 tape eraser for the finest recordings. Engineered to professional standards; assures distortion-free tape; reduces noise level 3 to 6 db below capability of erase heads; fast way to erase entire tape; saves wear on recorder; effective on tapes up to 1/2" wide; accepts 10 1/2" reels. Size 3 3/4" x 5 1/4" x 6 1/4". 110-120v. 50-60 cycles.
Model ADP-93, wt. 10 lbs.,
\$33 list. . . . **\$22.15**

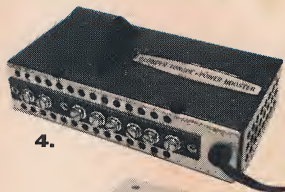
HEATHKIT CRYSTAL MICROPHONE—ONLY \$9.95



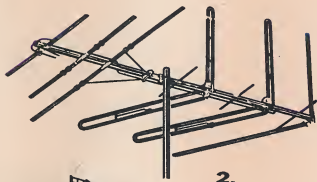
Low cost way to fine recordings, ideal for use with the new AD-72 recorder. Extended response, 30,000 cps. Complete with mike stand adapter, lavalier neckband, and desk stand holder plus 8' cable and phone plug. Order two for stereo recordings.
Model AK-1, 2 lbs. . . . **\$9.95**



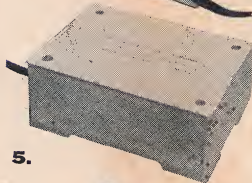
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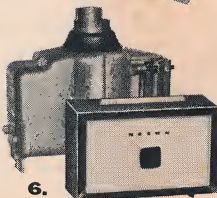
4.



2.



5.



6.

1. TACO T-BIRD "ELECTRA" MODEL G990-8 ELECTRONIC TV ANTENNA

The world's most powerful electronically-amplified antenna. Gets pictures and sound where others fail! Will receive stations hundreds of miles distant. Best for color, best for black and white, best for multi-set systems. Has antenna-mounted transistorized booster that multiplies the signal. And you can connect your TV set and your FM tuner! Complete, 8 elements and booster, ready to install. Gold anodized and irradiated. 15 lbs. GDP-223, \$107.20 Mfrs. list, no money dn., \$7 mo. . . . **Net \$62.98**

2. TACO T-BIRD MODEL G707-6 TV ANTENNA

Excellent for black & white and color TV; 6 elements; sensitivity controlled to 1 db across channels; gold anodized; "cradle-lok" brackets; irradiated aluminum; T-match system; fiberglass and butyrate insulators; guaranteed 1 year. GDP-213, 9 lbs., \$46.15 Mfrs. list, no money dn., \$5 mo. . . . **\$25.84**

3. TACO 4-BAY MODEL 3044 TV BOW-TIE UHF ANTENNA

Popular open vee type with pivot mount for rigid locking to existing mast; heavy mesh screen reflector of galvanized 12 gauge steel with 1" x 1 1/2" squares for max. stability and long life. GDP-233, 4 lbs., \$8.75 Mfrs. list. . . . **Net \$5.14**

4. BLONDER-TONGUE TV/FM SIGNAL BOOSTER (B-33)

A combination antenna signal booster and home distribution system that makes any antenna more powerful by amplifying the signal and distributing it to up to 3 TV and/or FM sets. For one set, the B-33 doubles the antenna signal (6 to 8 db gain); for 3 sets, each gets as much signal as is picked up by the antenna. Input and output: 300 ohms. Size: 6 1/2" x 3 1/4" x 2 1/4". GDP-321-A, 2 lbs., Mfrs. list \$19.95. . . . **Net \$13.33**

5. PERFORMANCE-PROVEN TRANSISTORIZED BLONDER-TONGUE FM/TV BOOSTER (IT-4)

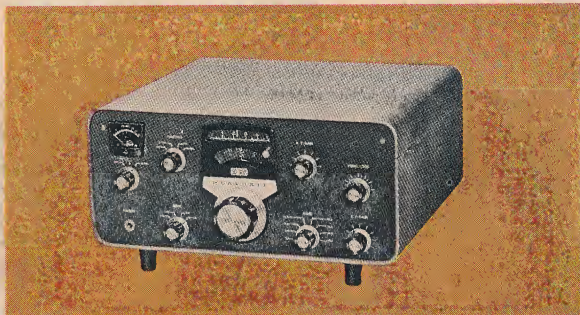
Dependable, trouble-free signal booster. Accepts up to four FM and TV sets simultaneously. 300 ohm input & output. Easy to install. 1 1/2" x 2 1/4" x 4", 1 lb. GDP-331. . . . **Only \$19.40**

6. ALLIANCE T-20 ANTENNA ROTOR ONLY \$23.45, SAVE \$16.50

America's favorite rotor, attractively styled, and value packed. "Tenna-Teller" pointer on control unit automatically follows antenna direction as it is being rotated. No buttons to push, no dials to adjust, just a touch of the control bar aims your antenna in any direction. Instantly reversible motor rotates clockwise or counter-clockwise; magnetic brake eliminates coasting. Positive mechanical stop at end of rotation; speed 1 rpm; factory lubricated for life; stainless steel bearing insert; moisture sealed; input; 115v., 60 cycles, AC. GFP-73, 12 lbs., Mfrs. list \$39.95. . . . **Net \$23.45**



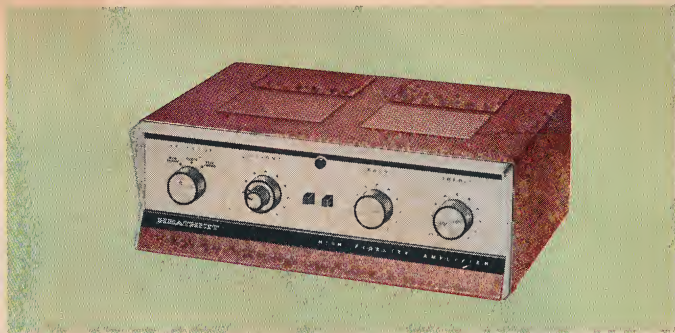
*Over 250 Heathgifts...
Something for Everyone
on Your List!*



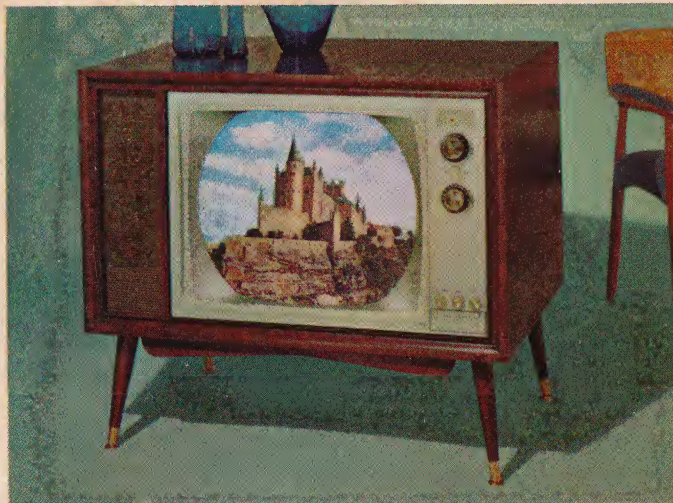
NEW! SSB Amateur Radio Receiver . . . the first in a great new Deluxe Heathkit Ham series! You'll enjoy a new dimension in quality, features, and professional performance that you never thought possible in kit form! Save 50% or more over comparable units! See pg. 36



NEW! Heathkit All-Transistor, All-Mode Stereo Receiver . . . both tuner and amplifier in one beautiful walnut-finished cabinet. The first all-transistor receiver in kit form! And at an amazingly low price of only \$195.00! A wonderful gift, a wonderful addition to your music system! See pg. 20



NEW! 16-Watt Stereo Amplifier . . . operates with magnetic as well as ceramic phono cartridge. Ideal for that "second" music system. Styled in a new refreshing motif. Specially priced for the "budget-minded", \$39.95. See pg. 25



NEW! 21" High Fidelity Color TV . . . the most advanced circuitry for best picture and sound. Builds easily . . . from parts to picture in just 25 hours . . . and you realize tremendous savings! What a wonderful gift for the whole family! See pg. 5

All prices quoted are Net F.O.B. Benton Harbor, Michigan and apply to United States and Possessions only. Prices and Special Offers herein effective October 15, 1963. All prices and specifications subject to change without notice. Dealer and export prices slightly higher.

Postmaster: If undeliverable, please do not return.

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