

The Fisher Handbook

1968



**An Authoritative Guide
to Stereo High Fidelity**

\$2.00

The Fisher 400™

65-Watt FM-Stereo Receiver



The Fisher 400 has long been favored by the newcomer and hi-fi enthusiasts alike, who prefer an instrument with substantial power at an unusually modest cost. It embodies the best in electrical wiring workmanship and audio engineering, and its rugged tube circuitry affords virtually unlimited years of trouble-free service.

There has been no compromise in the essential design characteristics, or in the rigorous test procedures and standards of the 400 since its introduction. Circuit improvements and refinements have, of course, been made continuously. The gradual upgrading of an already fine instrument, coupled with a substantial reduction in manufacturing costs, has resulted in reproducing equipment of outstanding value for the economy-minded music lover.

The Fisher 400 incorporates a high-sensitivity FM-Stereo tuner, a flexible stereo preamplifier, and a 65-watt (IHF) stereo power amplifier. The front-end section employs three tuned circuits for increased selectivity, thus permitting the user to tune in a far greater number of FM stations than he might expect with ordinary FM equipment. To heighten the sensitivity of the instrument so that even the weakest FM signal is brought in enjoyably, Fisher engineers have included four wide-band IF stages, and three stages of limiting. The ratio detector, utilizing a matched pair of germanium diodes for linear performance over an extremely wide range, is capable of detecting and transmitting the most complex stereo-multiplex signals and reproducing them without distortion.

The multiplex demodulator features the superior time-division method. This system, best for producing maximum stereo separation, is one of several circuit designs Fisher engineers have incorporated in this

model. Another is STEREO BEAM, the Fisher trademark that signifies the Fisher 400 has the convenience feature of automatically signaling the presence of a stereo broadcast. It is also used as a tuning indicator for microaccurate tuning of mono and stereo broadcasts.

The audio control center of the 400 has all the desired features, including tone and balance controls, loudness compensation, a sharp-cutoff high frequency filter, and a speaker on-off switch. In addition, the exclusive Fisher *Direct Tape Monitor* has been incorporated to provide monitoring of tape recordings, followed by immediate playback, *with unrestricted use of all audio controls.*

The Mode/Program Selector has seven positions (Tape Head, Phono Mono, Phono Stereo, FM Stereo, FM Stereo Filter, FM Mono, Aux-Tape) to afford easy access to any program source. Other extras include a center-channel output (for a separate power amplifier), choice of NORMAL or LOCAL antenna inputs to prevent overloading on strong local signals, and DC on all filaments of the low-level audio stages to reduce hum and noise to the vanishing point.

Although the 400 would appear to be ideal for those with a very limited budget, many audio enthusiasts have found the 400 to be ideal for their critical needs. It epitomizes the very best qualities of Fisher engineering — exceptional performance, breadth of flexibility, ease of operation, and an abundance of power, capable of driving several pairs of speaker systems.

Size: 17½" wide, 5¾" high, 13" deep. *Weight:* 30¾ pounds.
Cabinet: Walnut, Model 30-UW, Optional at additional cost.

The Fisher 500-C™

75-Watt FM-Stereo Receiver



Among music devotees, hi-fi enthusiasts, audio engineers and newcomers to stereo high fidelity, the Fisher 500-C is the all-time leader in the history of the industry. More 500-C's have been sold than all other hi-fi components combined.

The 500-C ranks among the finest of receivers. It was the first instrument to utilize the principles of 'human engineering' and thus achieve maximum performance capability even for newcomers. An engineer can admire it; a child can run it.

It employs the Fisher *Nuvistor*-GOLDEN SYNCHRODE front end, a circuit that affords far higher sensitivity, wider overload margin, and better rejection of spurious and image signals than one normally expects.

A newly developed electronic switch in the STEREO BEACON, utilizing silicon diodes to eliminate clicks and pops from loudspeakers during switching, routes the detected audio signal to the multiplex decoder.

The controls and switches are arranged in such logical and convenient groupings as to be instantly understandable and useful. They serve every purpose possible. The *seven*-position Selector (Tape Head, Phono Mono, Phono Stereo, FM Automatic, FM

Stereo, FM Mono, Aux-Tape) combines the mode and program functions into one, simple-to-operate source. Separate friction-lock bass and treble controls, a high and low sharp-cutoff filter, and a front-panel headphone jack are among other features of the preamplifier section. The four-position Speaker Selector permits one to use both the main set of speakers as well as one or more remote speaker installations.

The 500-C has 75 watts of music power (IHF). At normal listening levels, distortion is, for all practical purposes, so minute as to be unmeasurable. It is inaudible at *all* levels. A derived, 'third' power output is provided in addition to the left and right speaker connections, for center-channel use, or for an extension speaker.

This all-time best-selling favorite continues to attract thousands of new owners. It has everything one requires for the complete enjoyment of the stereo program, plus a wealth of conveniences.

Size: 17½" wide, 5¾" high, 13½" deep. Weight: 36½ pounds.
Cabinet: Walnut, Model 30-UW, Optional at additional cost.

The Fisher 800-C™

75-Watt AM-FM Stereo Receiver



This superb receiver is identical to the 500-C described above, except that it also includes a high-performance AM tuner section. The AM circuitry features a high-gain pentode RF amplifier, a pentagrid converter, and an IF amplifier with switchable bandwidth. A front-panel switch selects either BROAD, for widest frequency response, or SHARP, for max-

imum selectivity. A high-sensitivity ferrite rod AM antenna is mounted on a bracket, attached to, but outside the chassis of the 800-C, for best possible reception.

Size: 17½" wide, 5¾" high, 13½" deep. Weight: 37 pounds.
Cabinet: Walnut, Model 30-UW, Optional at additional cost.

Outstanding Features and Specifications

The best way to protect your investment in stereo high fidelity equipment is to know *what* you are buying. This is the reason we always publish full details on why FISHER instruments are the world's finest. They are your yardstick, revealing just what you are getting when you buy a FISHER component, and how it compares with competitive products. Your local dealer or a technically-minded friend can help you evaluate the specifications, if you wish.

FISHER RECEIVERS

AMPLIFIER SECTION	200-T	220-T	500-T	550-T	700-T	400	500-C*
Music Power (IHF)	70 watts	55 watts	90 watts	90 watts	120 watts	65 watts	75 watts
Harmonic Distortion (at 1 kHz and rated output)	0.8%	0.8%	0.8%	0.8%	0.8%	0.5%	0.5%
RMS Power (at 1 kHz and rated distortion)	25/25 watts	20/20 watts	32/32 watts	35/35 watts	50/50 watts	28/28 watts	32/32 watts
Intermodulation Distortion (60Hz + 7 kHz, 4:1) (SMPTE)	1.0% at 25 watts, each channel	1.0% at 20 watts, each channel	0.8% at 32 watts, each channel	0.8% at 35 watts, each channel	0.8% at 50 watts, each channel	0.8% at 30 watts, each channel	0.7% at 35 watts, each channel
Frequency Response: Overall	25-20,000 Hz ± 2 db	30-20,000 Hz ± 1 db	22-20,000 Hz ± 1 db	22-30,000 Hz ± 2 db	20-25,000 Hz ± 1 db	25-25,000 Hz ± 1 db	25-25,000 Hz ± 1.5 db
Power Amplifier Section	20-25,000 Hz + 0, - 2 db	25-25,000 Hz ± 1.5 db	15-60,000 Hz + 0, - 1 db	10-50,000 Hz + 0, - 2 db	10-70,000 Hz + 0, - 1 db	10-40,000 Hz + 0, - 2 db	5-45,000 Hz + 0, - 2 db
Power Bandwidth (1% Distortion) (IHF)	22-30,000 Hz	28-30,000 Hz	22-30,000 Hz	20-24,000 Hz	20-24,000 Hz	25-30,000 Hz	24-35,000 Hz
Damping Factor at 8 ohms	> 10	> 20	> 50	> 10	> 50	—	—
Hum and Noise (volume control at minimum)	80 db below rated output	80 db below rated output	80 db below rated output	85 db below rated output	80 db below rated output	80 db below rated output	80 db below rated output
Channel Separation (at 1 kHz)	> 45 db	> 50 db	> 45 db	> 50 db	> 50 db	50 db	50 db
Bass Controls (total variation at 50 Hz)	17 db	17 db	26 db	26 db	26 db	22 db	23 db
Treble Controls (total variation at 10 kHz)	16 db	16 db	22 db	22 db	22 db	22 db	23 db
Input Sensitivity Phono Low	3.5 mv	3.6 mv	3.5 mv	2.5 mv	3.5 mv	4.4 mv	3.3 mv
Phono High	11 mv	9.5 mv	10 mv	9 mv	10 mv	14 mv	13 mv
Tape Head	—	—	2.5 mv	1.6 mv	2.5 mv	2.8 mv	2.5 mv
Aux	440 mv High 220 mv Low	800 mv High 410 mv Low	200 mv	180 mv	400 mv High 200 mv Low	280 mv	230 mv
FM TUNER SECTION							
Usable Sensitivity (IHF Standard)	2.0 μv	2.5 μv	1.8 μv	1.8 uv	1.8 μv	1.8 μv	1.8 μv
Signal-to-Noise Ratio (100% Modulation)	65 db	65 db	70 db	68 db	70 db	70 db	70 db
Selectivity (alternate channel)	40 db	50 db	50 db	50 db	50 db	60 db	60 db
Spurious Response Rejection (at 100 MHz)	90 db	85 db	90 db	90 db	90 db	85 db	85 db
IF Rejection (at 100 MHz)	90 db	90 db	95 db	90 db	95 db	85 db	90 db
Image Rejection (at 100 MHz)	60 db	60 db	80 db	60 db	80 db	57 db	65 db
FM Harmonic Distortion (400 Hz, 100% Modulation)	0.5%	0.5%	0.5%	< 0.5%	0.4%	0.5%	0.5%
FM Stereo Separation (at 1 kHz)	> 35 db	35 db	> 35 db	> 35 db	40 db	35 db	35 db
Capture Ratio	2.5 db	2.5 db	2.2 db	2.0 db	2.0 db	2.5 db	2.5 db

Because its products are subject to continuous improvement, Fisher Radio Corporation reserves the right to modify any design or specification without notice and without incurring any obligation.

All Fisher high fidelity components operate on 50 to 60-Hertz AC current and are available for 200-250 volt usage.

*The Fisher 800-C AM-FM Stereo Receiver has an identical FM section.

FISHER TUNERS

	R-200-B†	TFM-200	TFM-300	TFM-1000
Frequency Response* (in Hz)	20-15,000			
Sensitivity (IHF)	1.8 μ V	1.8 μ V	1.8 μ V	1.8 μ V
Signal-to-Noise Ratio (100% Mod.)	70 db	70 db	70 db	70 db
Selectivity (Alternate Channel)	50 db	55 db	55 db	70 db
Capture Ratio (IHF)	2.5 db	2.2 db	2.0 db	0.6 db
Harmonic Distortion (100% Mod.)	0.4%	0.5%	0.4%	0.2%
Spurious Response Rejection (at 100 MHz)	100 db	90 db	90 db	90 db
IF Rejection (at 100 MHz)	90 db	90 db	90 db	95 db
Image Rejection (at 100 MHz)	70 db	65 db	65 db	80 db
Front-End Circuit	NUVISTOR-GOLDEN SYNCHRODE			SUPER SYNCHRODE FET
FM IF Stages	4	4	5	5
FM Wide-Band Limiters	3	3	5	4
Wide-Band Ratio Detector	Yes	Yes	Yes	COUNTER DETECTOR
FM-Stereo Separation (at 1 kHz)	40 db	40 db	40 db	greater than 40 db
Interstation Muting	Yes	Yes	Yes	Yes

*The frequency response shown represents the audio frequency range transmitted by the FM stations. The actual bandwidth of Fisher tuners is considerably greater.

†Multi-Band Tuner: FM, Long Wave, Short Wave, Standard AM Band, and 49-Meter SW Band.

FISHER AMPLIFIERS

	TX-100	TX-1000	400-CX	SA-1000
Music Power Output (IHF, Both Channels)	65 watts	120 watts	NA	150 watts
Harmonic Distortion at Rated Output	0.5%	0.5%	0.04%	0.25%
Power Output (RMS) per Channel	25 watts	50 watts	(Max. 2.5 volts RMS)	65 watts
IHF Power Bandwidth	16-36,000 Hz @ 1.0% THD	22-24,000 Hz @ 1% THD	NA	12-45,000 Hz @ 1.0% THD
Intermodulation Distortion (SMPTE) at Rated Output	0.8%	0.8%	0.2%	0.4%
Hum and Noise below Rated Output	75 db	90 db	80 db	90 db
Frequency Response Overall	25-35,000 Hz \pm 2 db	20-40,000 Hz \pm 1.5 db	20-25,000 Hz \pm 1 db	6-100,000 Hz \pm 2.5 db
Power Amplifier Section	10-25,000 Hz \pm 2 db	10-60,000 Hz + 0, -2 db	NA	6-100,000 Hz \pm 2.5 db
Sensitivity for Rated Output (High Level Inputs)	400 mv	200 mv	200 mv	0.7 to 2.75 volts
Sensitivity (Phono Inputs)	3.5 mv	2.0 mv	2.8 mv	NA
Sensitivity (Tape Head Inputs)	2.5 mv	1.8 mv	1.5 mv	NA
High Filter	Yes	Two	Yes	NA
Rumble Filter	Yes	Yes	Yes	NA

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Fisher StrataKits

You can now build a Fisher tuner, amplifier or speaker system that is every bit as fine as a factory-wired instrument, even if you do not have technical knowledge or experience. The exclusive Fisher StrataKit method of kit building makes it so incredibly easy to build a superb hi-fi component that you will amaze your friends, your family, and, most of all, yourself.

The assembly of each Fisher StrataKit takes place by simple, errorproof stages (STRATA). Each stage corresponds to a *separate* fold-out page in the uniquely detailed instruction manual. Each stage is built from a separate packet of parts (STRATAPACK). Major parts are already mounted on the extra-heavy-gauge steel chassis. Wires are *precut* for every stage—which means every page. All work can be checked stage-by-stage and page-by-page, before proceeding to the next stage. You can't help ending up with a perfect Fisher high fidelity component when you build from a StrataKit.



Few tuners compare in tone to the Fisher KM-60. It has a sensitivity of 100 microvolts per meter, a critical band width of 1.5 kHz.

Every component is of high caliber. The Fisher StrataKit method of construction is sophisticated. The Fisher KM-60 tuner is constructed from the finest materials available. It is completed in a matter of hours.



A kit built from a Fisher StrataKit is flexible, adaptable, and easy to control. It is the Fisher KM-60 tuner.

Its fifty-watt power output is sufficient to drive a 16-ohm speaker or a 4-ohm speaker.

Its range is from 20 Hz to 20 kHz. It has a filter, loudspeaker, and a DIRECT TUNING circuit of

The Fisher KM-60™

FM-Stereo Tuner



Few tuners in kit or factory-assembled form compare in total performance with the Fisher KM-60. It has a sensitivity of 1.8 microvolts (IHF) and a selectivity of 60 db—extremely high ratings for the two critical barometers of tuner performance.

Every detail of design and construction reflects the high calibre of engineering know-how that has made Fisher the leader in high fidelity. In addition to the sophisticated circuitry and design elements, the KM-60 utilizes only the finest grade of parts for kit construction. This is why it has the capacity to perform to the highest standards years after the kit is completed.

All difficult wiring and critical alignments are performed at the factory by trained technicians. The front-end and multiplex sections are prewired, pre-aligned and tested for highest sensitivity, lowest noise and optimum stereo reception. All that is needed is a touch-up alignment of the IF stages—something that can be accomplished with precision by watching the front-panel meter.

The KM-60 has facilities for tape, separate antenna connections for local and distant reception, and individual audio level controls for each channel. It is a superb high fidelity component that will prove especially rewarding to the kit hobbyist.

CONTROLS: Selector (Mono, Stereo); Stereo Filter (Off/On); Power (Off/On); Tuning.

Dimensions: 15 $\frac{1}{8}$ " wide, 4 $\frac{1}{16}$ " high, 13" deep.

Weight: 18 pounds.

Cabinet: Walnut, Model 10-UW, or Metal with Simulated Leather finish, Model MC-2, optional at slight additional cost.



A kit builder would be hard pressed to find a more flexible, high-powered and easy-to-operate master control amplifier at a price lower than the remarkable Fisher KX-100.

Its fifty watts of music power (IHF) with an harmonic distortion of only 0.5% assures ample reserve power to drive even low-efficiency speaker systems.

Its range of audio controls include a front-panel headphone jack with speaker silencing switch, high filter, loudness contour switch, and the famous Fisher DIRECT TAPE MONITOR. The input and output circuitry of the KX-100 assures the greatest possible

The Fisher KX-100™

50-Watt Stereo Control-Amplifier

versatility, since provisions have been made to allow each pair of low level inputs to accept either a tape head or a phono cartridge.

The Fisher KX-100 has been carefully designed to provide the lowest distortion signal even in the quietest of passages.

CONTROLS: Input Selector (Tape Head, Phono, Tuner, Auxiliary, Tape Play); Mode Selector (Mono, Stereo, Reverse); Left/Right Bass (concentric); Left/Right Treble (concentric); Balance; Volume (including AC Off).

SWITCHES: Equalization (Tape/Phono); High Filter (On/Off); Tape Monitor (On/Off); Loudness Contour (On/Off); Speakers (On/Off).

Dimensions: 15 $\frac{1}{8}$ " wide, 4 $\frac{1}{16}$ " high, 11 $\frac{7}{8}$ " deep.

Weight: 24 pounds.

Cabinet: Walnut, Model 10-UW, or Metal with Simulated Leather finish, Model MC-2, optional at slight additional cost.



The Fisher KX-200 is the finest master audio control amplifier available in kit form. Although remarkably easy to build and easy to operate, it contains a wealth of features and brilliantly designed circuits that make it a prime example of Fisher engineering genius.

It has 80 watts of music power (IHF) at only 0.4% harmonic distortion. Frequency response of the power amplifier section is 10 to 110,000 Hz (+0, -1 db). One look at the control panel is all that is required to recognize the remarkable versatility of this instrument. In addition to the full complement of controls, the KX-200 also includes a stereo dimension control to enable one to vary the channel separation at will, from full stereo to monophonic. A precision d'Arson-



The Fisher KX-90 was designed for those who seek Fisher quality at unusually moderate cost. It has all the essential Fisher characteristics—wide flexibility of controls, and unmatched reliability in performance and operation.

It has a rated music power output of 40 watts (IHF) at a harmonic distortion of only 0.5%. Such power will enable the builder of this kit to hook up two pairs of high-efficiency speaker systems.

All the essential controls are included: a four-position Program Selector, Bass, Treble, Balance and Volume. A front-panel headphone jack and speaker-silencing switch permits private listening

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The Fisher KX-200™

80-Watt Stereo Control-Amplifier

val tuning meter at the rear of the chassis, sets and maintains the bias and balance conditions in the output stage. A power-derived center-channel output is also included, permitting connection of a third speaker for either three-channel stereo or remote mono.

CONTROLS: Input Selector (Magnetic-1, Magnetic-2, Tuner, Auxiliary-1, Auxiliary-2); Mode Selector (Mono Phono, Reverse, Stereo, A, B); Center Speaker Level; Left/Right Bass (concentric); Left/Right Treble (concentric); Balance; Stereo Dimensions; Volume (including AC Off).

SWITCHES: Equalization (Tape/Phono); High Filter (On/Off); Tape Monitor (On/Off); Loudness Contour (On/Off).

Size: 15½" wide, 4-13/16" high, 12½" deep. **Weight:** 26 pounds. **Cabinet:** Walnut, Model 10-UW, or Metal Cabinet in Simulated Leather, Model MC-2, Optional At Additional Cost.

Dimensions: 15½" wide, 4¹³/₁₆" high, 12½" deep.

Weight: 26 pounds.

Cabinet: Walnut, Model 10-UW, or Metal with Simulated Leather finish, Model MC-2, optional at slight additional cost.

The Fisher KX-90™

40-Watt Stereo Control-Amplifier

pleasure, without disturbing others in the same room. Fisher engineers have also included a comprehensive set of input and output facilities, including high and low phono inputs to match all types of magnetic cartridges. Facilities for handling tape include a monitor, permitting one to use all controls and switches during tape playback *without* changing cable connections.

The Fisher KX-90 represents Fisher engineering at its finest. The gold-plated front panel will retain its original magnificence indefinitely.

CONTROLS: Input Selector (Tape Head, Phono, Tuner, Aux); Mode Selector (Stereo, Mono); Left/Right Bass (concentric); Left/Right Treble (concentric); Balance, Volume (including AC off).

SWITCHES: Tape Monitor (On/Off); Speakers (On/Off); High Filter (On/Off); Loudness Contour (On/Off).

Dimensions: 15½" wide, 4¹³/₁₆" high, 11⁷/₈" deep.

Weight: 20 pounds.

Cabinet: Walnut, Model 50-UW, optional at additional cost.

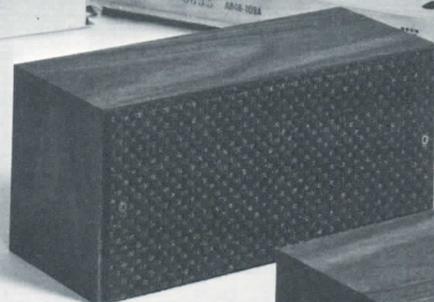
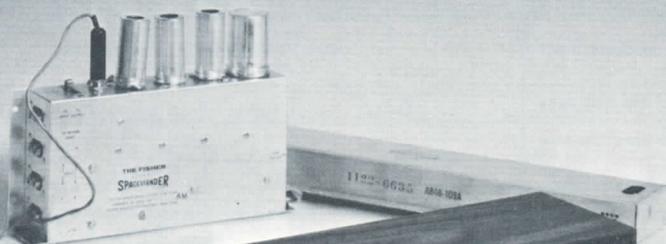
FISHER FIRSTS

Milestones in the History of High Fidelity Reproduction

- 1937 First high-fidelity sound systems featuring a beam-power amplifier, inverse feedback, acoustic speaker compartments (infinite baffle and bass reflex) and magnetic cartridges.
- 1937 First exclusively high-fidelity TRF tuner, featuring broad-tuning 20-20,000 cycle fidelity.
- 1937 First two-unit high-fidelity system with separate speaker enclosure.
- 1938 First coaxial speaker system.
- 1938 First high-fidelity tuner with amplified AVC.
- 1939 First dynamic range expander.
- 1939 First 3-way speaker in a high-fidelity system.
- 1939 First center-of-channel tuning indicator.
- 1945 First preamplifier-equalizer with selective phonograph equalization.
- 1948 First dynamic range expander with feedback.
- 1949 First FM-AM tuner with variable AFC.
- 1952 First 50-watt all-triode amplifier.
- 1952 First self-powered master audio control.
- 1953 First self-powered, electronic sharp-cutoff filter system for high-fidelity use.
- 1953 First universal horn-type speaker enclosure for any room location and any speaker.
- 1953 First FM-AM receiver with a cascode front end.
- 1954 First low-cost electronic mixer-fader.
- 1954 First moderately priced professional FM tuner with *two* meters.
- 1955 First master audio control chassis with five-position mixing facilities.
- 1955 First peak power indicator in high fidelity.
- 1955 First correctly equalized, direct tape-head preamplifier with self-powered audio control.
- 1956 First to use power monitor in a home amplifier.
- 1956 First all-transistor preamplifier-equalizer.
- 1956 First dual dynamic limiters in an FM tuner for home use.
- 1956 First performance monitor in a high-quality amplifier.
- 1956 First FM-AM tuner with *two* meters.
- 1956 First complete graphic response curve indicator for bass and treble.
- 1957 First GOLDEN CASCODE FM tuner.
- 1957 First MicroRay tuning indicator.
- 1958 First stereophonic radio-phonograph with magnetic stereo cartridge.
- 1959 First high-quality remote control system.
- 1959 First complete stereophonic FM-AM receiver (FM-AM tuner, audio control, 40-watt amplifier).
- 1959 First high-compliance plus high-efficiency Free-Piston loudspeaker system.
- 1960 First to use MicroRay for FM tuning and as a recording audio level indicator.
- 1960 Smithsonian Institution, Washington, D. C., receives for its collection America's first commercially manufactured high-fidelity radio-phonograph, made by Avery Fisher in 1937.
- 1960 First reverberation device for use in high fidelity equipment—the Fisher Dynamic Spacexpander.
- 1960 First stereo tuner with MicroTune.
- 1960 First FM tuner with six IF stages.
- 1960 First FM tuner with five limiters.
- 1960 First front-panel antenna selector switch, 72-300 ohm, Local-Distant positions.
- 1961 First FM-Stereo multiplex adapter with STEREO BEACON and automatic switching, mono to stereo.
- 1961 First complete FM-multiplex stereo receivers.
- 1961 First FM-stereo tuners with STEREO BEACON and STEREO BEAM.
- 1961 First internal switching system to permit immediate tape playback with use of all controls and switches.
- 1961 First loudspeaker system with frameless woofer cone, to eliminate all parasitic resonance.
- 1962 First simplified-operation control-amplifier, with infrequently used controls behind front-panel cover, yet immediately accessible.
- 1962 First loudspeaker with eddy-current-damped voice coil.
- 1962 First bass speaker with combined serrated-aluminum and fiber cone.
- 1962 First FM tuner kit with separate d'Arsonval meter for tuning and separate cathode ray stereo broadcast indicator (STEREO BEAM).
- 1963 First to use 8417 tubes with unique cavity-anode design.
- 1963 First power amplifier to use oscilloscope-type frequency-compensated input circuit.
- 1963 First amplifier kit with STRATA-BALANCE visual dynamic balancing system.
- 1964 First multiplex adapter with 'flywheel synchronization.' Closely approaches theoretical limit of noise rejection, and of all spurious responses.
- 1964 First AFC with strong locking on weak signals, with no pull-in from adjacent strong signals.
- 1964 First FM Stereo Tuner with STEREOSCAN.
- 1964 First peripherally-driven tweeter with cotton, soft dome.
- 1964 First to use TUNE-O-MATIC circuitry in an FM tuner.
- 1966 First F.E.T. front-end design with over 40 db of Automatic Gain Control (more than ten times that of the best prior solid-state techniques.)
- 1966 First FM tuner with Automatic FM Antenna Signal Attenuator.
- 1966 First FM tuner to achieve 0.6 db capture ratio—three times better than the best previous achievement.
- 1966 First FM Tuner to use a 10-megacycle-wide Counter Detector, eliminating all distortion caused by drift or misalignment, for the life of the tuner.
- 1966 First FM Tuner with Clear Signal Indicator.
- 1966 First FM Tuner to incorporate a Power Amplifier Circuit for high-quality, low-impedance headphones.
- 1966 First time-division multiplex circuit to incorporate a Four-Diode Coincidence Circuit.
- 1966 First Receiver to use TRANSIST-O-GARD™ Overload Protection.
- 1967 First high fidelity component with multiple pushbutton FM station selection.
- 1967 First to introduce high fidelity equipment with seven integrated circuits (IC's).
- 1967 First loudspeaker system with 18" free-suspension bass speaker.

Exclusive Fisher Audio Accessories

K-10



WS-2



HP-50



PR-6

The Fisher HP-50™

Stereo Headphones

Fisher stereo headphones are the ideal complement to private listening enjoyment. Not only do they faithfully provide all the living acoustic presence of the original program material, but offer a degree of comfort and convenience heretofore unknown in headphone design.

The cups are constructed of full foam-cushioned, high-impact Cyclolac plastic for maximum comfort.

The spring steel headband is vinyl-covered and fully adjustable. A single, 6½-foot cable with 3-contact plug provides the necessary connections.

All Fisher Receivers and Amplifiers have headphone jacks on the front panel, and the Fisher HP-50 is a logical audio accessory for every Fisher component.

The Fisher WS-2™

WIDE-SURROUND® Speaker System

The new Fisher WS-2 eliminates the 'point' source of sound and thus creates the illusion that any seat in the room is front row center. This is accomplished by exploiting a phenomenon known as the *Haas effect*. In this, the direction of identical sound reaching the listener from two sources is determined by the one closest to the listener. Furthermore, the sound will always appear to be emanating from the nearer source even though the more distant source is louder.

Many Fisher Receivers and Fisher Amplifiers have facilities on the rear panel for wiring remote speakers in addition to the main speaker. These terminals can be used to hook up the WS-2 speaker systems.

Each unit incorporates an 8½-inch by 3½-inch oval permanent magnet speaker. Frequency response is 250 to 15,000 Hz, with sharp cutoff at 250 Hz. Available in Walnut. DIMENSIONS: 10½" wide, 4½" high, 4" deep. WEIGHT: 4½ pounds.

The Fisher PR-6™

Basic Preamplifier

This is a simple, high-performance, single-channel preamplifier without controls, designed to adapt a low-gain, amplifier channel for use with a magnetic cartridge, tape head, or microphone. It is self-powered, and incorporates two high-gain triode stages.

SPECIFICATIONS. Gain: Phono, 1 volt output for 10 mv input; microphone, 1 volt output for 1 mv

input; tape, 1 volt output for 5 mv input. Frequency Response: 30 to 20,000 Hz within ± 2 db. Hum: Better than 60 db below 1 volt for phono; better than 70 db below 1 volt for microphone. Equalization: RIAA for phono, NAB for tape. DIMENSIONS: 3¾" wide, 3⅝" high, 3⅝" deep. Weight: 1½ pounds.

The Fisher K-10™

DYNAMIC SPACEEXPANDER®

The Fisher K-10 DYNAMIC SPACEEXPANDER® electronically recreates the reverberation of the concert hall by artificially reflecting sound so that it reaches a listener's ear a fraction of a second later than it normally would. This reflection, or delay, is identical to the way one would hear a concert in an auditorium, and adds a new dimension to listening pleasure, even in the smallest of rooms. The K-10 works equally well on records, tape and broadcasts.

One control regulates the desired degree of reverberation.

Within recent years, there has been a renewed popularity in the Fisher K-10. Its special reverberation effects make it ideal as an adjunct for the guitarist who, in addition to tremolo and vibrato, seeks to add reverberation to his guitar amplifier. In addition, the DYNAMIC SPACEEXPANDER® is used in many commercial applications where new and exciting dimensions to sound prove desirable.