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THE FISHER HANDBOOK

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Archiv Michael Otto

1963

AN AUTHORITATIVE GUIDE TO CUSTOM STEREO

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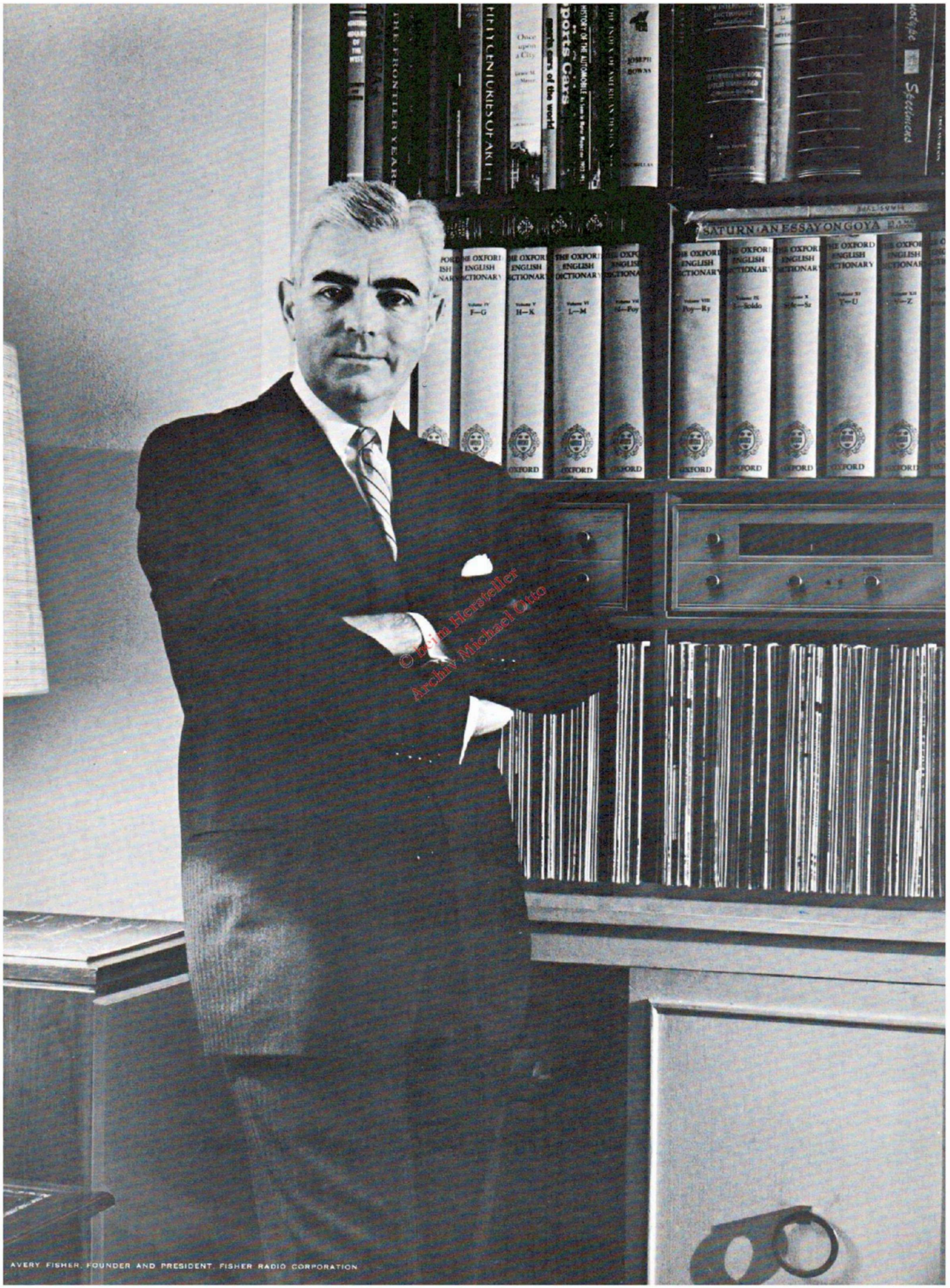

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THE FISHER TRADITION

If a cross section of serious music lovers were asked to list their requirements for a theoretically 'ideal' manufacturer of high-fidelity equipment, the chances are they would reply with a fairly accurate description of the Fisher Radio Corporation.

They would undoubtedly want the head of the company to be a devoted music lover himself, preferably a trained musician, and most certainly an avid record collector. Avery Fisher is all three—chamber music enthusiast, violinist, and owner of one of the country's major record collections as well as an unusually rare library of chamber music.

They would want the company to be deeply aware of every problem faced by the discriminating home music listener, of every major and minor trend in high fidelity, of even the slightest new development in audio engineering, and to have vast experience in translating this awareness into the finest equipment. Avery Fisher built his original high-quality radio and phonograph systems in 1937, as much for himself as for his handful of knowledgeable patrons, at a time when 'high fidelity' was strictly professional jargon and natural-sounding equipment designed specifically for the home desperately scarce. Since then, he and the Fisher Radio Corporation have been responsible for more engineering 'firsts' in high fidelity than all other companies together. (See complete list of Fisher Firsts on inside back cover.)

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Today, in the age of stereo, Fisher components built in 1937 are still in use—and the 1963 Fisher components are again considered by engineers and musicians alike to be the finest available in their respective categories.

One could draw many other parallels between the music lover's desires and The Fisher Tradition. The important thing, however, is that the Fisher Radio Corporation is as deeply steeped in music itself as in technical know-how and that each new Fisher component design, before it can go into production, must satisfy not only a staff of the most experienced audio and radio engineers to be found anywhere but also the ears of a man who knows what a real violin sounds like.

Since those early beginnings more than 25 years ago, some of the world's most prominent people—heads of state, royalty, leaders of industry and of the sciences and professions—have joined the roster of Fisher owners. Throughout the world, they represent the truest index to the meaning and worth of the Fisher brand name—the international synonym for high-quality sound reproduction. None of this, however, gives Avery Fisher nearly as much satisfaction as the fact that many of today's greatest musical artists choose Fisher equipment to hear their own recordings in their homes. The President of the Fisher Radio Corporation considers himself to be the firm's most demanding patron and he is pleased that his standards meet the most advanced musical tastes throughout the world.

What is stereo?

THE stereophonic reproduction of sound in general and of music in particular, now called 'stereo' for short, is a subject of considerable complexity at the engineering level. There is no reason, however, why the average music lover and record collector should not easily and clearly understand what stereo means to *him*, what it has to offer in terms of living-room listening and how to get the most out of it.

The first thing that must be made clear is that stereo is *not* a new development which has somehow replaced an older technique known as high fidelity (or 'hi-fi'). Stereo *is* high fidelity — potentially the highest fidelity there is. 'High fidelity' means, and cannot be correctly interpreted to mean anything other than, a high degree of faithfulness. In the case of sound reproduction, the faithfulness is to the original, 'live' sound. Stereo is today's most advanced technique for recreating with the highest possible degree of faithfulness the subjective experience of listening to live sound. Therefore any question like, "Are you buying a hi-fi or a stereo?" is utterly meaningless. This Handbook is about *stereophonic high fidelity* — or stereo hi-fi, if you prefer.

Stereo differs from the older methods of sound reproduction in that it recreates the *space* where the original sound occurred, as well as the other important characteristics of the sound. Before the advent of stereo, great strides were made in reproducing *timbre* (the exact shades of tone color) and *dynamic range* (the contrasts between loud and soft), but the reproduction still lacked *dimension* — there was no distinction between left and right, up and down, front and back. These spatial characteristics can now be restored to the reproduction by means of the new stereo techniques, so that the reproduced sound retains not only its original quality and individuality but also its original acoustic environment: it has the elements of *direction* and *depth*.

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Our ability to hear direction and depth is based on the simple fact that we have two ears. Anyone can convince himself of this basic phenomenon of nature by attempting to lead a normal life with one ear plugged for a few hours. Sounds become shallow and confused; there seems to be a strange lack of contact with audible 'reality.' Stereo is designed to satisfy our instinctive need for two-eared hearing and is thus the *natural* method of sound reproduction.

Let us consider an actual, live listening situation, such as a concert. The sounds that reach one's left ear are slightly different most of the time from those that reach the right ear. Instruments playing to the left of center are heard by the left ear a fraction of a second sooner than by the right ear; instruments to the right of center are heard sooner by the right ear. The sound of instruments playing in dead center reaches both ears at exactly the same instant. These differences and similarities in arrival time enable us to distinguish the *direction* of each sound. The sounds reflected from the walls of the concert hall by reverberation reach one's ears slightly later than the direct sound, and this information is also sorted out in the same fashion by both left and right ear. Combined with the differences in loudness between near and far sounds, these directional 'echo' effects help us to judge the size of the concert hall, the distance of each instrument and all the other elements that contribute to the *depth* of the sound.

This is a somewhat oversimplified summary of how we hear sounds *in space*, but the important thing to remember is that the entire process is based on *differences* occurring *simultaneously*. Now, there can exist a difference only between two or more things—and that's precisely where monophonic reproduction

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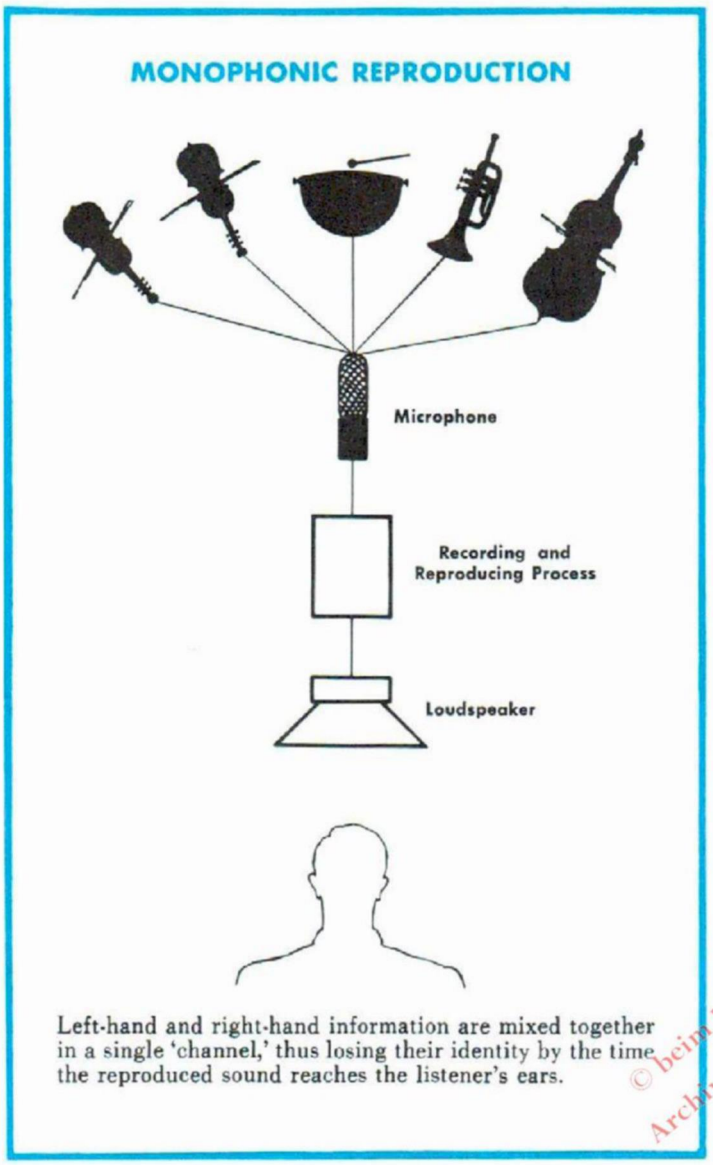
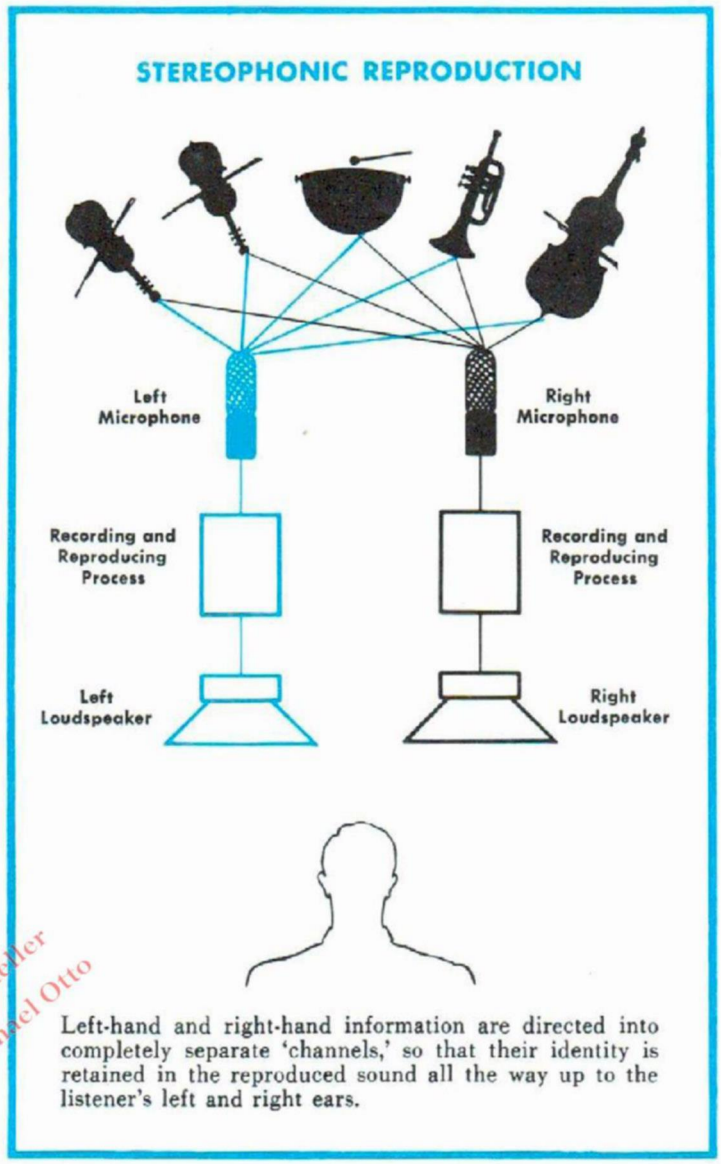


Left-hand and right-hand information are mixed together in a single 'channel,' thus losing their identity by the time the reproduced sound reaches the listener's ears.



Left-hand and right-hand information are directed into completely separate 'channels,' so that their identity is retained in the reproduced sound all the way up to the listener's left and right ears.

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in any form, was inadequate. It gave us only a single pattern of sound; just one spiral pattern of wiggles on a phonograph record, just one magnetic track on a recorded tape, just one optical track on a sound film, just one signal transmitted by a radio station. It did not matter how many microphones were used to pick up the original sound; their outputs all ended up in one mixture in the same single channel. Nor did it matter how many loudspeakers the ultimate listener had; each loudspeaker was fed from the same single channel and each was in effect playing the same pattern of sound. No differences for the ear to sort out — therefore no spatial information.

Stereo, on the other hand, provides two or more channels of sound, kept distinct and separate throughout the entire process of reproduction. Not just two or more microphones, not just two or more loudspeakers, but two or more completely *different patterns* of sound. As many as seven such separate channels have been used for special stereo applications, but in normal practice *two* channels have been found completely adequate and a spectacular improvement over one. *Separate* is the key word here — one could dramatize the principle by saying that one channel does not even know that the other exists until both emerge into the listening room. Then the listener's ears have a chance to perceive differences and interpret them as spatial information.

It is entirely incorrect to say that stereo provides "one channel for the left ear and one for the right ear." In listening to stereo, both ears hear both channels — all the time. But the two channels are *different;* and the left ear hears the left channel a little sooner than the right ear, the right ear hears the right channel a little sooner than the left ear — and if there are more channels (as there are in certain special installations), still further differentiation is possible. That's what produces the stereo effect.

It should also be clear that each channel in stereo must be of the highest possible quality if a real improvement in fidelity is to be achieved. Distortion, noise and other obstacles to high fidelity must be as carefully kept out of both channels as out of the single channel of monophonic days. In the final analysis, stereo has not changed the basic requirements of high-quality sound reproduction; it has merely multiplied them.

Courtesy Kapp Records

How is stereo recorded and broadcast?

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Until approximately five years ago, stereo was almost exclusively a tape recording technique. Two or more microphones were set up in front of or above the sound source, in positions experimentally determined by the recording engineers as the best possible for the particular room or hall and for the type of sound to be recorded. The sound picked up by each microphone was then separately recorded on one of the two or more parallel and simultaneous magnetic tracks of a single tape. All of the tracks started together and ended together on the same reel, but each track was in effect an independent tape recording of the sound 'heard' by a single microphone. These parallel tracks could then be played back simultaneously, just as they had been recorded, each through a separate high-fidelity system terminating in a separate loudspeaker. The result was multi-channel (usually two-channel) stereo reproduction of the highest order, and this is still the method used today to make the original 'master' recording at a recording session.

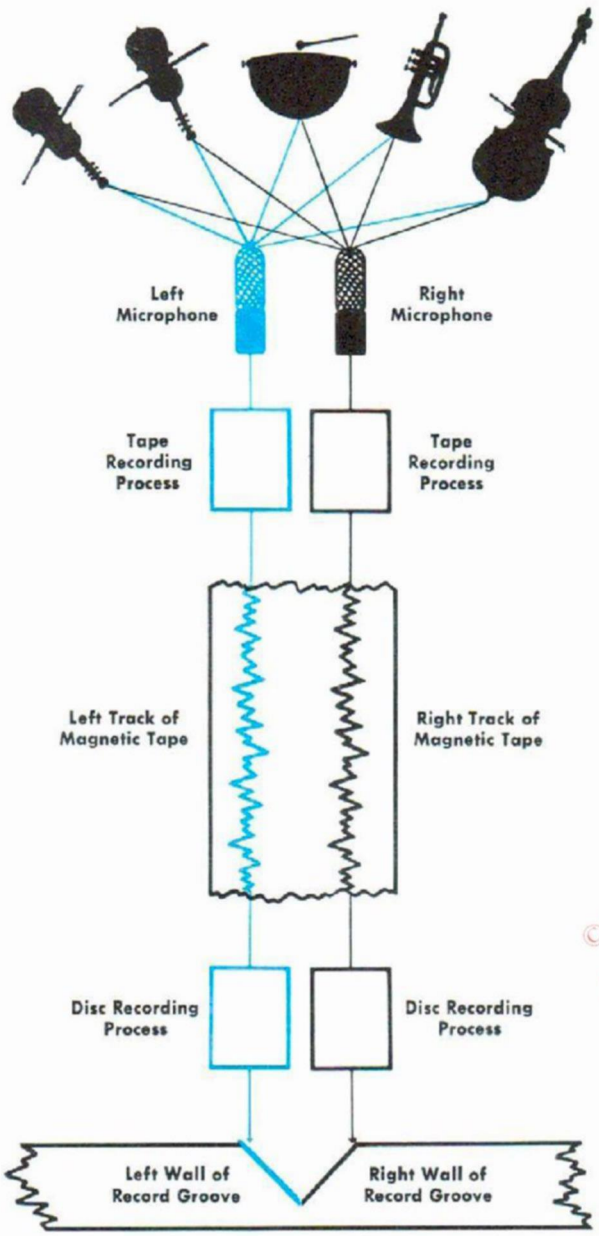
Until recently, however, it was difficult to make such stereo recordings available in many copies for commercial distribution. Methods were slowly developed to make *tape* copies available in quantity to owners of home-type, non-professional tape recorders, which have a slower tape speed than the studio recorders. Today these commercial stereo tapes are widely available in record stores and other outlets, and they are very close in sound quality to the original master tape. The big problem that remained to be solved was to adapt stereo to the most widely used high-fidelity medium— the phonograph record.

The solution came in 1957 in the form of the Westrex system of stereo disc recording. This technique permits the recording of two separate channels on the two walls of a *single* V-shaped record groove. The two separate tracks of a stereo master tape can thus be easily re-recorded on a disc, or a two-channel original recording can be made directly on a master disc, even though the latter technique is, for a variety of reasons, out of the ordinary. The important thing is that a single record side with a single groove engraved on it can now hold two separate simultaneous recordings—for the left and right channels of two-channel stereophonic sound reproduction.

Pickups have been developed which can decipher the complex information in a stereo record groove, keep the two channels entirely separate and feed them to two separate playback systems. Furthermore, the same pickups can also play single-channel or monophonic records with even greater fidelity than conventional 'mono' pickups.

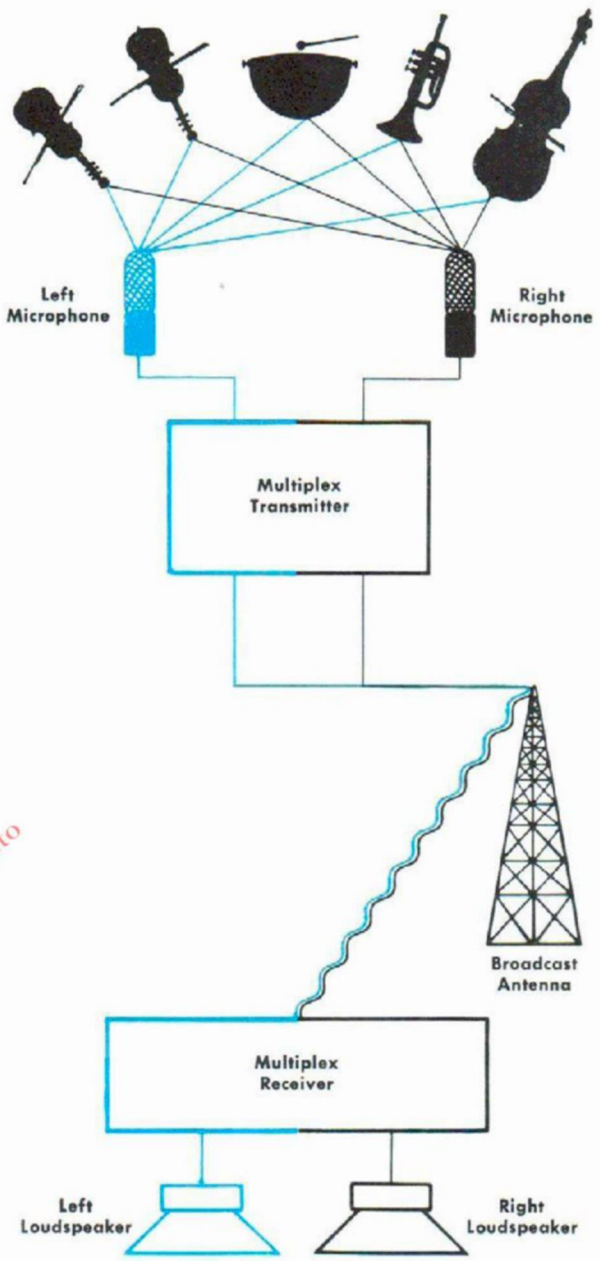
The complexity of the new stereophonic disc recording and playback system necessitated a few very minor compromises with fidelity in the first year or so of com-

STEREOPHONIC DISC RECORDING



Left-hand and right-hand information are kept separate throughout the recording process, on tape and on disc. The stereo pickups designed for playback of the 90° V-shaped groove have the ability to distinguish between left wall and right wall.

FM STEREO MULTIPLEX BROADCASTING



Left-hand and right-hand information are combined in a specially coded manner and transmitted as a single broadcast signal. The Multiplex receiver has the ability to decode the combined signal and reconstruct the original left-hand and right-hand information.

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mercial practice. Today, however, the finest stereo discs and pickups bring an unprecedented degree of fidelity to sound reproduction in the home — provided the rest of the playback system is also of the highest quality.

The last medium to take advantage of stereophonic techniques was radio. Certain stations have been experimenting for a number of years with FM-AM stereo: broadcasting one channel on FM and the other on AM. These transmissions left a great deal to be desired, since the AM channel was invariably noisier and more distorted than the FM channel, creating imbalances that largely destroyed the stereo illusion. The solution had to be pure FM stereo radio, which became a reality in the latter part of 1961 with the advent of Multiplex FM broadcasting. This new system uses only *one* FM transmitter to broadcast *both* channels; the two channels are combined in a predetermined and highly ingenious manner before transmission and are then separated and restored to their original patterns by the receiving equipment, just as though they had never been mixed in the first place. The latest FM-Multiplex receiving equipment has built-in facilities to accomplish this; earlier models require the addition of what is known as a Multiplex Adaptor.

What do I need?

There is a popular misconception that "you need two of everything for stereo." This may have been at least a partial truth in the days when none of the high-fidelity component manufacturers had a full line of stereo equipment on the market, so that the second channel had to be more or less a duplicate of the equipment one already owned. Today's stereo components are invariably of duplex design — two-channel amplifiers, FM tuners with built-in Multiplex, dual-cable pickup arms and so on. They are not nearly as costly as two single-channel components of equivalent quality. Integrated design eliminates many unnecessary duplications and makes important savings possible. Loudspeakers remain the only item of which one still needs a pair, and even here there are ways to avoid doubling the mono budget.

Let us begin with the selection of the AMPLIFIER. If we regard a high-fidelity system as a sort of operational pipeline carrying information from the record groove or the radio antenna through the various components all the way to the loudspeaker, then the Amplifier is the central pumping station. It receives very weak currents from the various program sources and it builds up or 'amplifies' these currents until they are powerful enough to drive the loudspeaker or loudspeakers. Its output is regulated by the volume control and its maximum power is rated in watts.

Approximately 15 watts per channel is the rating where acceptable stereo amplifiers begin. Such an amplifier would be described as a 30-watt stereo amplifier or as a 'dual 15.' More power is required if the loudspeakers to be used are relatively difficult to drive (a factor which has nothing to do with their sound quality) or if the listening room is large or heavily draped and carpeted. The advice of a competent high-fidelity component salesman can be invaluable in making the correct choice.

Another function of the Amplifier is to compensate for tonal imbalances (too little bass, too strong high tones, and the like) in the program sources and to make these and other adjustments easily controllable by the listener. This is accomplished by means of various controls and switches, as is the selection of the program source itself. The part of the amplifier incorporating these controls (as well as the volume control) is known as the 'front end' or Master Control section. In certain elaborate design, it is on a separate chassis by itself, apart from the main or power amplifier. Amplifiers that include the control section on the same chassis with the main amplifier are classified under the name of Control Amplifiers.

Feeding the front end of the amplifier are the various program sources or services — the Radio Tuner (FM or AM or FM-AM as the case may be), the Record Player and possibly a Tape Recorder.

The function of the TUNER is to receive radio programs off the air and convert them to electrical signals that are suitable for amplification. Only FM programs are comparable, in fidelity and freedom from noise, to records or tape, and discriminating music lovers now tend to depend on them almost exclusively. The majority of important stations duplicate all their programs on FM.

The RECORD PLAYER can be either a record changer with a pickup cartridge or a single-play turntable with separately mounted pickup arm and cartridge. The stylus (or, less correctly, 'needle') of the cartridge traces the vibrations engraved in the record groove and translates them into tiny electric currents, to be fed to the front end of the amplifier. The function of the remaining parts of the record player is merely to rotate the record evenly and steadily, and to guide the cartridge in a correct position over the record surface. The *absence* of vibration, noise, extraneous resonances, and interference with steady rotation is the major criterion of quality here. Good record players "should be seen and not heard"—except for the output of the cartridge.

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The output side of the amplifier, where the current has been built up to sufficient strength to do physical work, is connected to the LOUDSPEAKER. The function of the Loudspeaker is to translate the electrical signals fed to it by the amplifier into mechanical vibrations (similar to the rapid motions of a piston), thus creating audible sound waves in the listening room. Advanced high-fidelity loudspeakers are, more properly stated, loudspeaker *systems*, consisting of several individual loudspeakers — a heavy one (*woofer*) for the very hard-working low tones; a small and very precise one (*tweeter*) for the delicate upper tones; and in some cases a medium-sized one for the middle range.

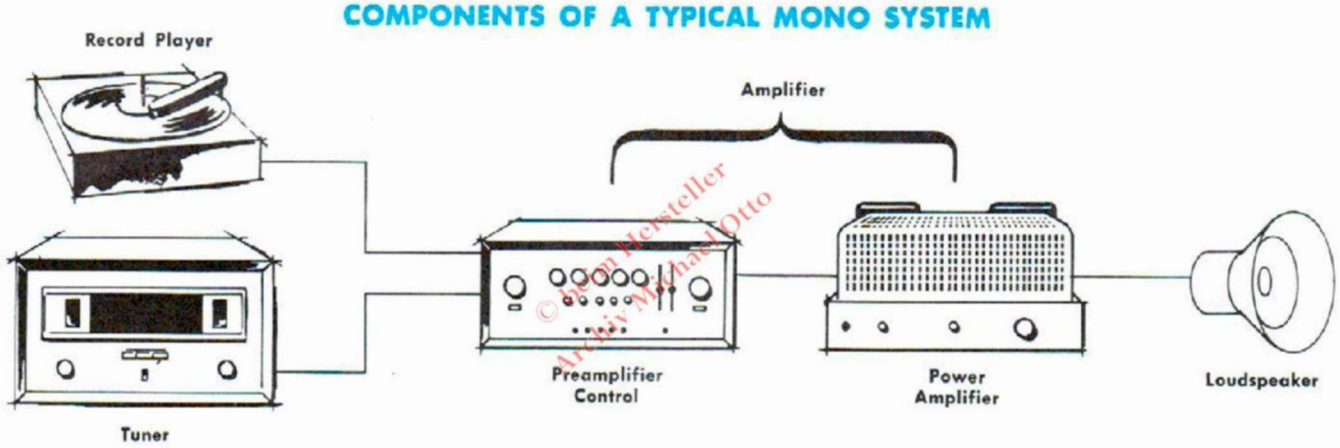
Stereo requires the use of two separate loudspeaker systems, each connected to one of the two channels of the stereo amplifier. They should be placed the proper distance apart, which may be as little as 4 feet or as much as 15 feet, depending on the size and shape of the listening room. Having the speaker systems too close together destroys the stereo effect; placing them too far apart creates an acoustic 'hole in the middle.' In a very large room, where the speakers must be very widely spaced to cover the listening area, a third speaker system may be added in the center, receiving the mixed outputs of both channels. Conversely, in a small room, a satisfactory stereo illusion can be created by feeding both channels into a single high-quality speaker system in a center location and connecting two smaller 'outrigger' or WIDE-SURROUND systems (covering the middle and high tones only), to the left and right channels, respectively. Again, the advice of an expert salesman can be of great help in making the right selection.

In general, the loudspeaker systems selected for stereo should be small enough so that they can be freely moved to find their best possible location. Stereo has forced into eclipse the monster speaker systems of monophonic days; two of the latter are too much for the average home, and the more sophisticated smaller designs of the stereo era do just as well, often better. One should invest as much of the stereo budget as possible in the very best loudspeaker systems one can afford, because there is a tremendous difference in sound quality between good, better and best in the loudspeaker field. Amplifiers, tuners, cartridges and other components are getting close to technical perfection today, but the loudspeaker still depends very much on the kind of inspired design that is fifty percent science and fifty percent art. It is advisable to listen very carefully before buying.

Where available space for a complete stereo component system is limited, or where it is desired to acquire the necessary components in the most economical form, without sacrifice of basic quality, the solution may well be a relatively new type of component—the STEREO RECEIVER. It combines dual radio, dual master controls and dual amplifiers on a single compact chassis, requiring only the connection of two loudspeaker systems and a record player for a complete, ready-to-play stereo installation.

There are available three basic combinations of the components just discussed for assembling a complete custom stereo system, including both phonograph and radio. They are illustrated in the diagrams below.

COMPONENTS OF A TYPICAL MONO SYSTEM



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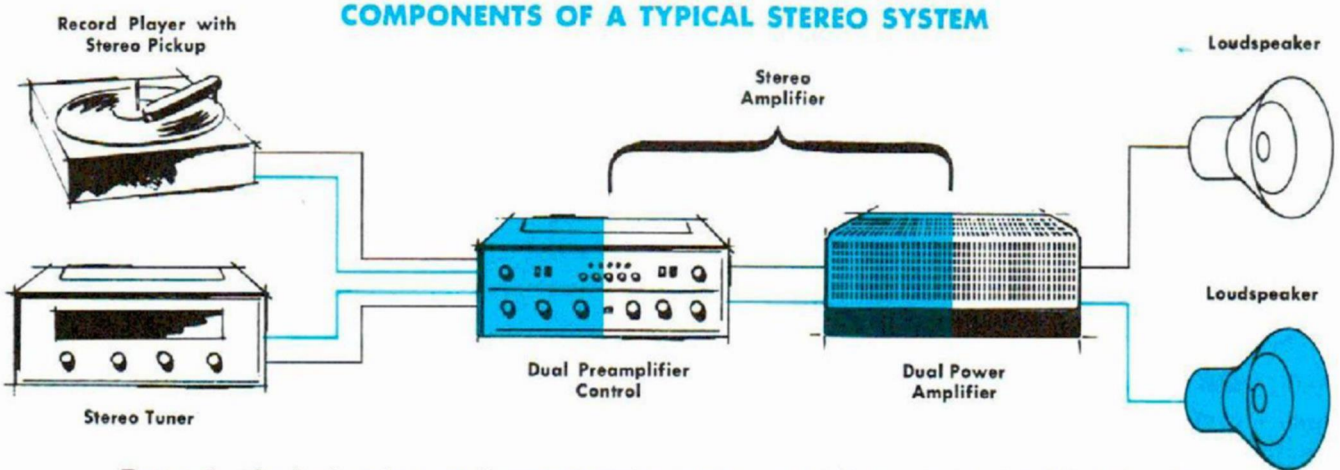
Each component presents a single 'channel' for the signal to travel through.

COMPONENTS OF A TYPICAL STEREO SYSTEM



Except for the loudspeakers, each component incorporates two 'channels,' for the left and right signals, respectively. Therefore only *one* more component is required than in a monophonic system.

It's Easy To Understand Technical Specifications!

AF (AUDIO FREQUENCY) Frequency within the range of human hearing – approximately 20 to 20,000 cps. Applies both to sound waves and to the electrical signals which represent them.

AM (AMPLITUDE MODULATION) Modulation accomplished by varying the instantaneous amplitude (intensity) of the carrier. Since an AM receiver must therefore be able to detect amplitude variations, it responds equally well to naturally-produced amplitude peaks: lightning, ignition interference, etc.

AUDIO Used interchangeably with AF. Also, the science of sound recording and reproduction, including acoustics.

CAPACITOR (CONDENSER) Circuit device capable of storing electric charge. It also has the property of passing alternating current while blocking direct current, and of presenting a greater resistance to the flow of alternating current as its frequency decreases. All these properties are used in electronic circuits.

CAPTURE RATIO Ability of a tuner to reject unwanted FM stations *on the same frequency as a desired one;* measured in db. The lower the figure, the better the tuner's performance.

CARRIER A steady RF alternating current radiated into space by a transmitter-and-antenna system.

CASCODE Circuit designed around two low-noise triode tubes which provides approximately the same amplification as a pentode, but with less noise. This makes it ideal for amplification of weak FM signals.

CROSSOVER NETWORK Circuit for dividing the audio range into two or more parts before feeding the signals to separate 'specialized' speakers: woofers, mid-range, and tweeter.

DB (DECIBEL) Unit of measure to indicate relative levels of voltage, current, power, or sound.

DERIVED CENTER CHANNEL Monophonic composite signal derived from the *sum* or *difference* of the left and right stereo channels, often fed to an extra speaker to fill in an aural 'hole' between the left and right speakers. A *sum* (left-plus-right) signal can also be used for feeding a remote speaker elsewhere in the home.

EQUALIZATION Correction for non-uniform recording of low and high frequencies. For valid technical reasons, disc records are cut with low frequencies attenuated and high frequencies boosted. Equalization compensates electrically for this imbalance and produces a uniform frequency response.

FEEDBACK Taking a portion of the output signal from an amplifier and feeding it back to the input. *Negative* feedback tends to make an amplifier self-compensating; irregularities in the output (distortion) not present at the input are cancelled. This applies also to hum, noise, or a non-uniform frequency response.

FM (FREQUENCY MODULATION) Modulation of a carrier by changing its instantaneous *frequency*, rather than its amplitude, in accordance with speech or music signals. By designing the FM receiver to respond only to FM, and to reject AM caused by lightning or auto ignition pulses, noise-free reception becomes a possibility. This is one of the advantages of FM which has helped make it popular for high fidelity.

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FREQUENCY Number of "back-and-forth" vibrations of a sound wave or alternating current in a second; expressed as cycles per second (cps.)

FREQUENCY RESPONSE Range of audio frequencies handled by a system or High Fidelity component.

GAIN Amount of amplification (in amplifiers or amplifying stages.)

GOLDEN SYNCHRODE An exclusive FISHER-engineered FM front-end providing high gain at low noise, and superior image and IF rejection. It uses a single high-transconductance frame-grid triode, neutralized for stability and low noise.

HARMONIC DISTORTION Production of undesired harmonics (overtones) which were not present in the original program material (expressed as a percentage.)

HUM The low-pitched, steady tone produced in an amplifier by the AC power frequency (60 cps) and its harmonics.

The only way to protect your investment in high fidelity is to know what you are buying. That is why we always publish full specifications. These specifications are your yardstick, revealing just what you are getting when you buy a FISHER component. Here is a simple explanation of the most important terms.

IF (INTERMEDIATE FREQUENCY) Constant difference frequency produced by mixing an incoming signal with a signal generated in the set at a different frequency. This *superheterodyne* principle offers important advantages over other methods of reception.

IM (INTERMODULATION) DISTORTION Production of undesired tones resulting from mixing, in an amplifier, of two or more pure tones (expressed as a percentage.) Low IM is vital for 'clean' sound.

IMPEDANCE Resistance to flow of alternating current (expressed in ohms.) Generally changes with the frequency of the applied alternating current.

LIMITERS FM tuner stages that reject spurious amplitude interference (from atmospheric noise or ignition pulses) and leave a pure, constant-amplitude FM signal. The FM signal fed to such stages must have a certain minimum strength for limiting to occur. As with IF stages, the more stages the better, other factors remaining equal.

LOUDNESS CONTOUR Compensation for the ear's natural insensitivity to low and high frequencies at low volume levels, achieved by boosting extreme lows and high progressively as volume setting is lowered.

MODULATION Process of superimposing voice, music or other intelligence on a carrier wave. (See AM, FM, Carrier.)

MULTIPLEX Transmission of two or more channels on a single carrier so that they can be recovered independently at the receiver; in FM stereo, transmission of left-plus-right (sum) signal and left-minus-right (difference) signal on main carrier and subcarrier, respectively. The multiplex decoder in the receiver recovers independent left and right stereo channels from the multiplexed signal.

MUSIC POWER Power output of an amplifier rated according to the Institute of High Fidelity Manufacturers (IHFM) standards.

NOISE Unwanted random sound created in small amounts by electronic equipment, often heard as hiss. Good design reduces it to negligible proportions.

OSCILLATOR Electronic generator of alternating current. One of the fundamental electronic devices.

PEAK Maximum instantaneous voltage or power. Also, a sudden, momentary burst of sound.

POWER OUTPUT Maximum amount of power an amplifier can deliver.

RESISTOR Circuit device that offers resistance to flow of alternating or direct current. When current flows through a resistor, a voltage proportional both to the current and the resistance exists across it. This property and the fact that a resistor absorbs electric power, dissipating it as heat, are used in electronics. Resistors are made of wire, metallic film, carbon, and other materials. They can be *fixed* or *variable*.

REVERBERATION Repetitive reflection of sound (from walls, etc.) Also, the spatial effect created thereby, which adds brilliance and warmth to sound, and helps to convey the size of the studio or hall.

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RF (RADIO FREQUENCY) Alternating current of frequency greater than 15 or 20 kc. Specifically, alternating currents transmitted and received for communications or entertainment.

SELECTIVITY Normally, the ability to reject stations on the same frequency and on channels adjacent or alternate to the one being received.

SENSITIVITY In a tuner, the ability to provide usable reception of weak signals. Expressed, for FM tuners, as microvolts (millionths of a volt) needed for a given number of db quieting (noise suppression.) The *lower* the number in microvolts, the more sensitive the tuner.

SEPARATION In stereo, degree to which channels are kept apart. Stereo effect depends on preventing leakage of program material from one channel to the other.

SIGNAL-TO-NOISE RATIO Figure in db, expressing the ratio of desired signal voltage to random noise voltage. Look for a *high* db figure: the better the signal-to-noise ratio, the less background noise there will be in the reproduced program material.

TRANSFORMER Electrical device which steps up or steps down voltage. A *power transformer* is used to 'transform' 117-volt AC power ('house current') into various voltages needed to operate a tuner or amplifier.

You can conceal or display your stereo components in your listening room and achieve a handsome installation either way. With their decorator-designed front panels and fine furniture-wood cabinets, Fisher tuners, amplifiers and receivers can even be displayed on an open shelf, if you so desire. Fisher loudspeakers are eye-flattering pieces of furniture in themselves, so you may want to leave them out in the open, too. On the other hand, there is no limit to the ways you can hide a stereo installation, if you prefer it that way. Breakfronts, sideboards, drawers, closets, wall cabinets, bookcases and unused old pieces from your attic can make perfect housings for stereo. Your imagination can stand you in good stead here. On the next few pages, you will see outstanding examples of how others have solved their installation problems.

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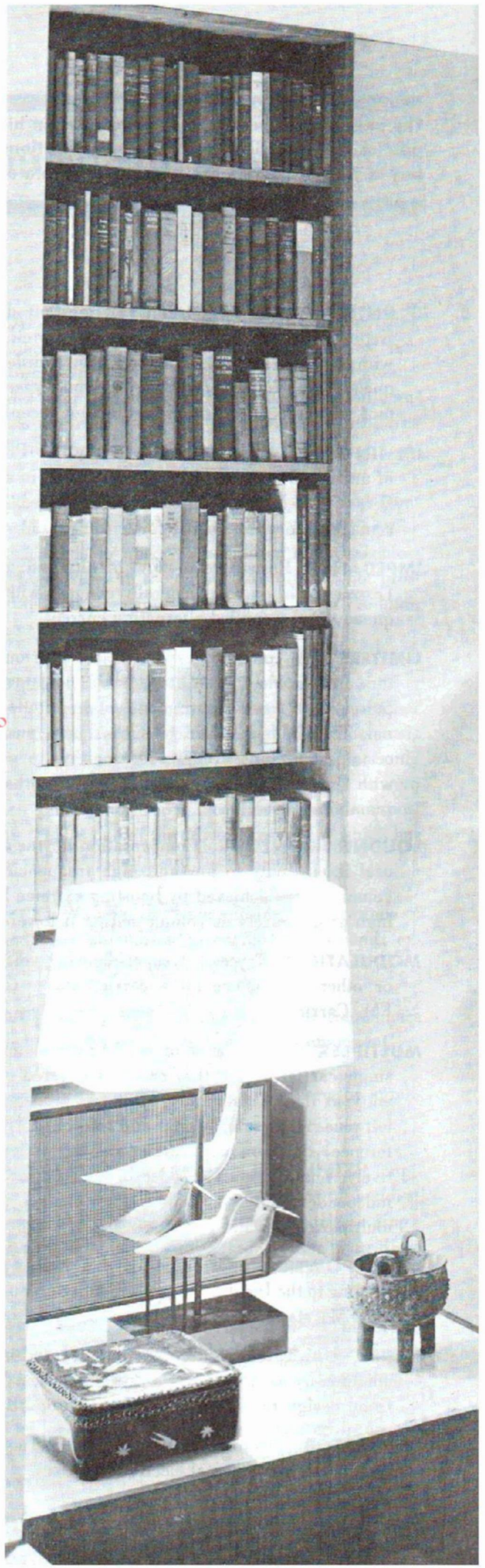
HOW TO DECORATE YOUR HOME WITH MUSIC



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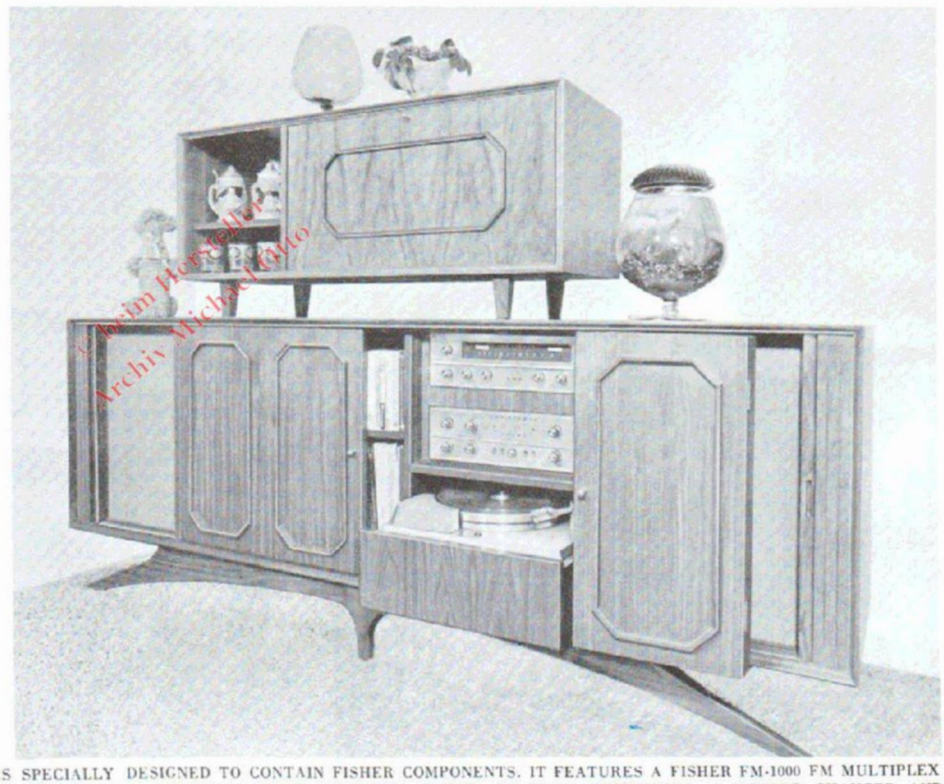
A little ingenuity goes a long way!

We have had the privilege of supplying Fisher instruments for special installations in fine homes throughout the world. Our twenty-five years of experience in this field is so vast and varied as to be truly without equal. The benefit of that experience is yours to draw upon when planning a stereo installation. On these pages we are showing for your guidance and inspiration photographs of actual installations in the homes of Fisher owners. They were selected as most typical and they cover a great variety of arrangements. Every installation reflects careful planning and the most efficient and convenient utilization of the available space. Ample ventilation is provided in every case, to assure a long, trouble-free life for the equipment.



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THIS MASSIVE STEREO HOME ENTERTAINMENT CENTER WAS SPECIALLY DESIGNED TO CONTAIN FISHER COMPONENTS. IT FEATURES A FISHER FM-1000 FM MULTIPLEX TUNER, FISHER X-1000 MASTER CONTROL AMPLIFIER AND TWO FISHER XP-2A SPEAKERS THAT ACTUALLY 'FLOAT' ON FOAM CUSHIONING. A RECORD CHANGER AND TAPE RECORDER (NOT SHOWN) WERE ADDED IN ORDER TO ENJOY THE MUSICAL PROGRAM FROM ANY SOURCE.

THIS DECORATOR-INSPIRED MUSIC ROOM SETTING WAS DESIGNED BY JOSEPH FREITAG, A.I.D., FOR THE 1963 DECORATION & DESIGN SHOW IN NEW YORK. THE WELDWOOD TEAK CABINETRY CONTAINS A FISHER X-1000 MASTER CONTROL AMPLIFIER, AND A FISHER FM-1000 FM MULTIPLEX TUNER. TWO FISHER XP-4A SPEAKERS ARE BUILT INTO TEAK COLUMNS. *COURTESY: U.S. PLYWOOD CORP.*

When you plan your stereo installation, always remember two basic requirements:

Electronic components must have adequate ventilation and loudspeakers must be properly placed for good stereo effect.

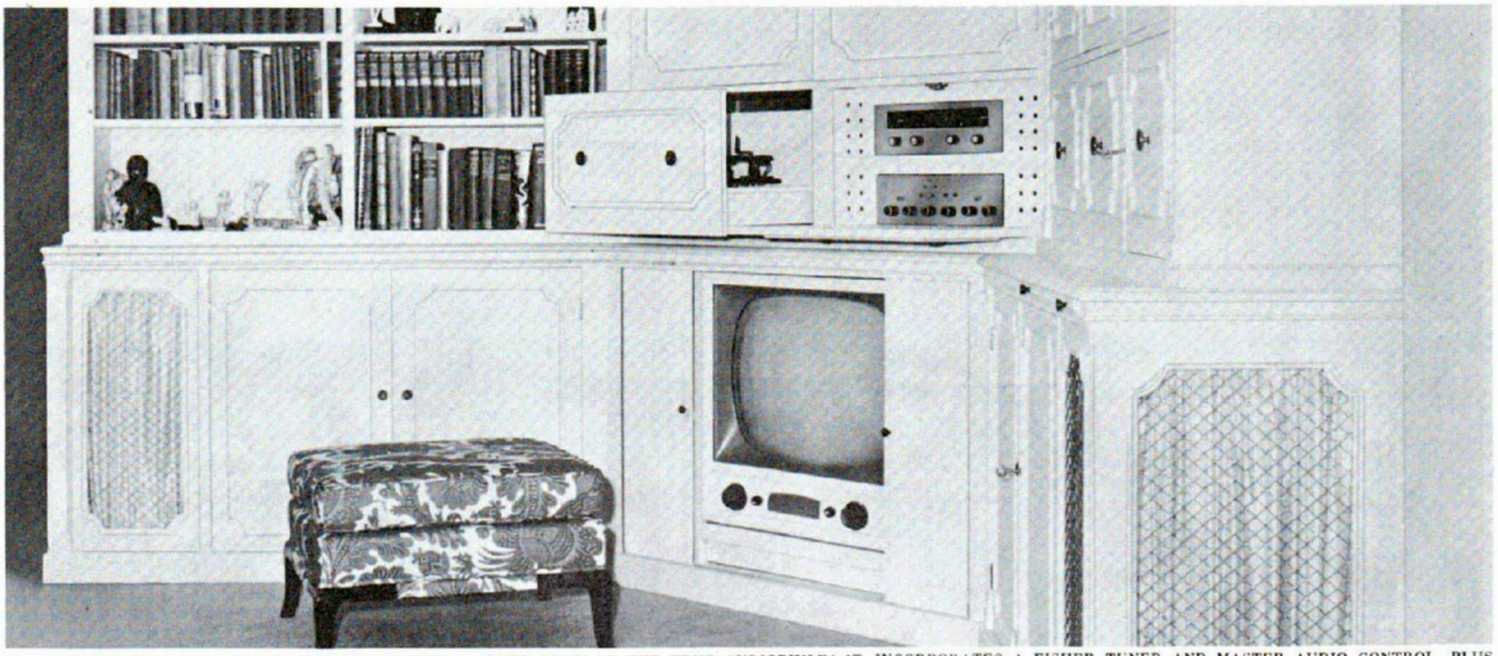
Never have a tuner, amplifier or receiver in a completely enclosed space. There must be access to the cooler outside air, preferably through substantial openings, for proper air flow. Never place stereo loudspeakers less than four feet or more than 15 feet apart, nor position them in such a way that one is much closer to the listening area than the other.

Otherwise, there is no limit to the number of ways you can exercise your ingenuity in placing your stereo components.

Should you need help in planning the installation of your stereo system, the services of our MR. RICHARD HAMILTON are available to you.

Simply send us (either through your dealer or directly) a rough sketch of your room layout, the dimensions of the space available for installation of the electronic equipment, and your choice or preference of the FISHER models in the system planned.

MR. HAMILTON will advise you on how to make the most effective use of the cabinet space as well as the room acoustics.



THIS MAGNIFICENT WALL INSTALLATION MAY WELL BE THE ENVY OF THE TRUE AUDIOPHILE! IT INCORPORATES A FISHER TUNER AND MASTER AUDIO CONTROL, PLUS RECORD CHANGER — ALL AT AN EASY-TO-REACH HEIGHT ABOVE CUSTOM TELEVISION CHASSIS. FISHER POWER AMPLIFIER AND LOUDSPEAKERS ARE CLEVERLY CONCEALED.

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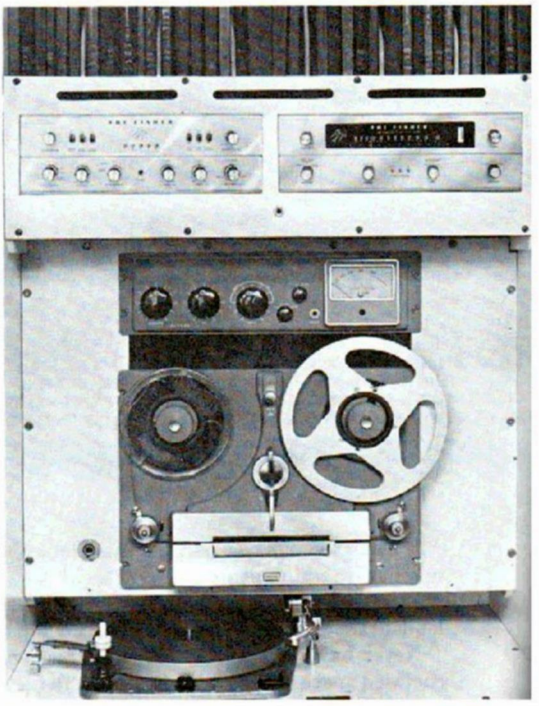
Archiv Michael Otto

UNUSUAL STEREO INSTALLATION IN BAR CABINET, UTILIZING FISHER TUNER AND SEPARATE MASTER CONTROL-AMPLIFIER. TWO FISHER XP-2A LOUDSPEAKER SYSTEMS ARE USED.



STUDIO-QUALITY INSTALLATION SHOWS THE FISHER TUNER AND MASTER CONTROL-AMPLIFIER PLACED ABOVE THE PROFESSIONAL-TYPE TAPE RECORDER AND A TRANSCRIPTION TURNTABLE WITH SEPARATE PICKUP ARM.

How to keep components in their place

You can plan a custom stereo installation to suit every room dimension, every room acoustic. Should the general features of your room suggest the use of completely exposed components, rather than built-ins, you can select from three basic cabinet styles-Walnut, Mahogany, or Metal Cabinet in simulated leather. Most of the new 1963 FISHER components are designed to accommodate any of these three basic cabinet styles.

FISHER TUNER WITH CONTROLS, TELEVISION AND TAPE RECORDER, BUILT INTO CONCEALED CLOSET AREA WITH INGENIOUSLY DESIGNED SLIDE-AWAY DOORS.

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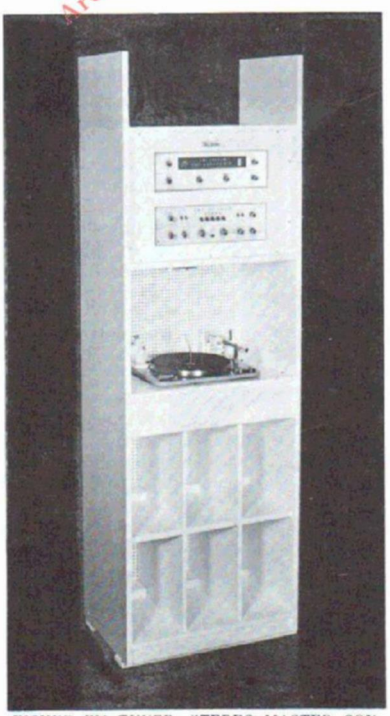
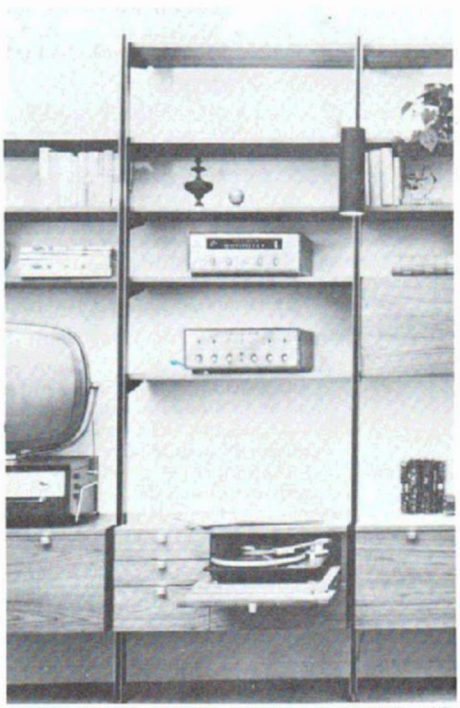


FISHER FM TUNER, STEREO MASTER CONTROL-AMPLIFIER AND AUTOMATIC RECORD CHANGER IN SELF-CONTAINED CABINET FOR CLOSET INSTALLATIONS.



FISHER TUNER, STEREO CONTROL-AMPLIFIER AND RECORD CHANGER, WITH SWIVEL-TYPE TELEVISION RECEIVER, FULLY EXPOSED IN FUNCTIONAL WALL-UNIT INSTALLATION.

■ "I have just purchased my third FISHER, and it is giving me the same fabulously true reproduction of my phonograph records, and in the reception of high fidelity broadcasts, as do the first two. It is a constant source of enjoyment and relaxation to me."

— Isaac Stern, *Concert Violinist*

■ "The FISHER is superb! May I congratulate you on creating an instrument that meets my highest professional and personal requirements for the faithful reproduction of recordings and of broadcast music."

— Nathan Milstein, *Concert Violinist*

From the Distinguished Roster of FISHER Owners

■ "I was thrilled and fascinated by the life-like reproduction, not only of my own recordings but those of other artists with whom I have sung at the opera. Many subtle shadings and nuances that I had not realized were in the recordings were fully and beautifully expressed."

— Victoria de los Angeles
Soprano, The Metropolitan Opera Company

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Archiv Michael Otto

■ "I have fallen under the spell of FISHER. What used to be only an instrument of necessity has become a source of unlimited pleasure."

— Gian-Carlo Menotti, *Composer*

■ "I am delighted with the superb tone of your instrument. It is true and encompassing. In admiration of your art."

— Andre Kostelanetz, *Conductor*

■ "Until I actually heard the FISHER, I had no idea that recorded music could be recreated with such startling completeness and reality. I would be remiss, indeed, if I failed to express my appreciation to your entire staff for creating this wonderful instrument."

— Sol Hurok, *Impresario*

■ "The FISHER Radio-Phonograph arrived in perfect order. I have been using it constantly ever since. It is as wonderful as I knew it would be and I am delighted with it. Ordinarily, I do not indulge in descriptive extremes but the FISHER is, without question, one of the finest instruments I have ever heard anywhere. Its tone is as close to live performance as I believe it is possible to get, and the high fidelity quality is perfect."

— Eugene Ormandy, *Music Director*
The Philadelphia Orchestra Association

A Partial Roster of Fisher Owners

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INTRODUCING THE FISHER 1963 STEREO COMPONENTS

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The unprecedented comprehensiveness of the new Fisher line of components permits you to select precisely what you need and no more than you need. The more elaborate and costly Fisher components differ from the simpler models not in basic quality but merely in versatility and an extra margin of performance for special needs and particular situations. The basic standard is the same for all Fisher components: distortion-free stereo reproduction with even the most demanding program material, coupled with unqualified durability in service.

Announcing the World's Foremost AM-FM-Multiplex Tuner

THE FISHER R-200

The revolutionary FISHER R-200 AM-FM-Multiplex Tuner has set an entirely new standard of excellence in performance and reliability. Everything about this magnificent instrument is different, unusual and far superior to existing brands in its circuitry and sensitivity.

The FM front-end incorporates the new FISHER GOLDEN SYNCHRODE design, to provide a greater overload margin and rejection of spurious and image signals than was heretofore possible. The AM section includes a tuned RF amplifier, followed by a converter and *two* IF amplifiers to assure far greater sensitivity than the ordinary AM tuner.

The multiplex converter, also, is different from and far superior to other makes, for it utilizes the time-division system, proven far more efficient than other types.

OUTSTANDING FEATURES

■ STEREO BEACON ■ Illuminated d'Arsonval Tuning Meter for both FM and AM ■ SIX CONTROLS: Stereo Filter (Off, On), Selector (AM, FM, FM Automatic, FM Stereo), FM Muting (variable with Off position), AM Bandwidth (Sharp, Normal, Wide), FM Antenna (AC Off, Normal, Local), Tuning ■ Three jewel-light indicators (FM, STEREO BEACON, AM), Interstation muting effective on stereo or mono FM transmissions ■ **FM TUNER** Wide-band design ■ Sensitivity: 1.6 microvolts (IHFM Standard) ■ Five FM IF Stages ■ FM-Stereo separation, 35 db ■ Signal to Noise Ratio: better than 70 db (100% Mod.) ■ Capture Ratio: 1.8 db (IHFM) ■ FM Harmonic Distortion: less than 0.4% (400 cps, 100% mod.) ■ **AM TUNER** Audio Response: SHARP to 3 Kc, NORMAL to 5 Kc, WIDE to 7 Kc ■ Cabinets in Walnut, Model 10-UW; Mahogany, Model 10-UM; Metal Cabinet in simulated leather, Model MC-2 ■ CHASSIS DIMENSIONS: 15⅛" wide, 4-13/16" high, 13" deep.* ■ WEIGHT: 19 lbs.

*Plus 2½" depth for AM loopstick antenna.

The New GOLDEN SYNCHRODE Front-End

This new FISHER front-end design comprises a high-gain, frame-grid triode plus three tuned variable circuits and an additional fixed input circuit of revolutionary design. It affords extremely high selectivity and rejection of spurious image and IF response, with far greater overload protection than any previous design. This feature is particularly important in those urban areas having a number of nearby, powerful radio stations.

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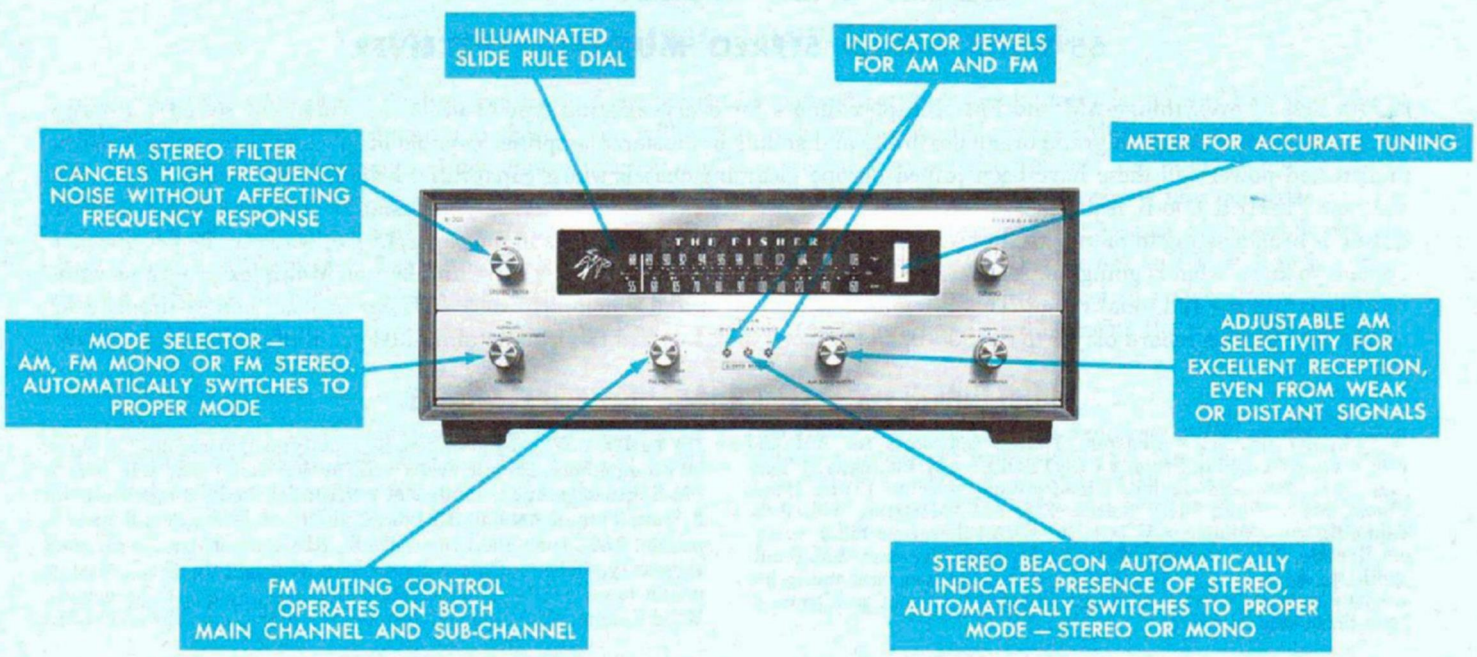
THE GENIUS OF FISHER ENGINEERING



The totally integrated approach: simpl

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THE FISHER 800-B

65-WATT AM-FM STEREO MULTIPLEX RECEIVER

THE best of everything—AM and FM-Multiplex tuners for every existing type of broadcast (mono or stereo), a stereo master control center of grand organ flexibility and simplicity, a stereo amplifier capable of producing 65-watts of pure, undistorted power—all these have been joined on one gleaming chassis whose capabilities belie its easy-to-install size. And the new FISHER 800-B features STEREO BEAM, the FISHER invention that tells you instantly whether or not an FM station is broadcasting in Stereo Multiplex. No need to consult program listings in the paper, or trot between the two speaker systems to know what is going on. A separate sub-channel noise filter eliminates noise and hiss on Multiplex programs without impairing the full tonal range. There is no easier way to install a complete stereo system in your home—simply add two speakers and a record player to the 800-B, and you can look forward to virtually unlimited years of musical enjoyment.

OUTSTANDING FEATURES AND TECHNICAL SPECIFICATIONS

■ STEREO BEAM. ■ Separate Tuning Indicators for AM and FM. ■ Linear Logging Scale. ■ CONTROLS: AM Tuning, FM Tuning, Dual Bass and Treble, Nine-Position Selector (Tape Head, Phono, MPX Filter, MPX Stereo, FM, FM-AM-Stereo, AM, Aux, Tape), Balance, Volume. SWITCHES: High Filter, Low Filter, Channel Reverse, Tape Monitor, Mono-Stereo, Phase Reverse, AM Bandwidth. ■ Loudness Contour Control maintains proper bass and treble intensity even at lowest volume settings. ■ Magnificent architectural brass-finish control panel.

FM TUNER Wide-band design. Sensitivity: 0.9 microvolts (72 ohms, 20 db quieting), 2.5 microvolts (IHFM Standard.) Three IF Stages. FM-Stereo separation, 35 db. **AM TUNER:** Sensitivity 5 microvolts for 2 Watts output. **AMPLIFIER:** Power output, 65 Watts. Harmonic distortion, 0.5%. Hum and noise, —85 db. RIAA sensitivity, 3.3 mv. Aux sensitivity, 230 mv. Output impedances 4, 8 and 16 ohms. CHASSIS DIMENSIONS: 17½" wide, 5¾" high, 13½" deep. WEIGHT: 33 pounds. Wood Cabinets in Walnut (Model 30-UW), Mahogany (Model 30-UM.)

connect two speakers

WHEN a FISHER stereo tuner is combined on the same chassis with a FISHER stereo control amplifier, the result is an integrated FISHER Stereo Receiver. Just a few turns of a screwdriver will connect the necessary pair of speakers, and you immediately have music in stereo—of a quality previously obtainable only with separate Fisher amplifiers and tuners. This has far-reaching implications; for now even those who want to avoid the slightest technicality—who do not even want to bother plugging a connecting cable into a plainly marked receptacle—can have component-quality stereo without outside assistance.

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THE FISHER 500-B

65-WATT FM STEREO MULTIPLEX RECEIVER

STEREOPHONIC FM is now a thrilling reality, and the perfect instrument for its full enjoyment is the new FISHER 500-B. Here, on *one* beautifully integrated chassis, you will find a high-sensitivity, wide-band FM tuner, with built-in Multiplex at its best; a stereophonic master control center; and a powerful, 65-watt stereophonic amplifier. Simply add two speaker systems and you are ready for regular or stereo FM broadcasts. Add a record player or tape recorder and the wonderful world of recorded music is yours to enjoy as well. Installation time—merely minutes, because of the single chassis. Best feature of all is STEREO BEAM, the FISHER invention that tells you instantly whether or not an FM station is broadcasting in Stereo Multiplex. It completely eliminates the "try-and-find-the-Multiplex" problem of conventional Multiplex tuners. A switchable filter reduces hiss and background noise on stereo programs without affecting the frequency response.

OUTSTANDING FEATURES AND TECHNICAL SPECIFICATIONS

■ STEREO BEAM. ■ Tuning Indicator. ■ Linear Logging Scale. ■ CONTROLS: MPX Filter, Station Selector, Dual Bass and Treble, Six-Position Selector (Tape Head, Phono, MPX Stereo, FM, Aux, Tape), Balance, Volume. SWITCHES: High Filter, Low Filter, Tape Monitor, Mono-Stereo, Channel Reverse, Loudness Contour. ■ Low-level audio tube filaments heated by a separate DC supply. ■ Magnificent architectural brass-finish control panel.

FM TUNER Wide-band design. Sensitivity: 0.7 microvolts (72 ohms, 20 db. quieting), 2.2 microvolt (IHFM Standard.) Four IF Stages. FM-Stereo separation, 35 db. **AMPLIFIER:** Power output, 65 Watts. Harmonic Distortion, 0.5%. Hum and Noise, −85 db. RIAA sensitivity, 3.3 mv. Aux Sensitivity, 230 mv. Output Impedances: 4, 8 and 16 ohms. CHASSIS DIMENSIONS: 17½" wide, 5¾" high, 13½" deep. WEIGHT: 31 pounds. Wood Cabinets are available in Walnut (Model 30-UW), Mahogany (Model 30-UM.)

FISHER Wide-Band FM-Stereo-Multiplex Tuners

Universally acclaimed by audio connoisseurs as the world's finest

THE FISHER FM-50-B

■ THE NEW FM-50-B was designed to provide, at moderate cost, all the elements essential for optimum reception of FM monophonic or Multiplex stereo broadcasts. In spite of its reasonable cost, nothing has been sacrificed to maintain the laboratory standards that distinguish all FISHER components.

OUTSTANDING FEATURES

■ STEREO BEAM (FM-Stereo-Multiplex and tuning indicator). ■ Three-Position Selector (MONO, STEREO, and STEREO FILTER). ■ Sensitivity Control: AC Off, Normal, and Distant. ■ Station Selector.

THE FISHER KM-61

■ THE NEW FISHER KM-61 provides a degree of sensitivity never before possible in FM tuners in its moderate price range. The superb, high-gain, GOLDEN CASCODE front-end, *four* IF stages and three limiters assure distortion-free mono and stereo reception — even from weak or distant stations.

OUTSTANDING FEATURES

■ STEREO BEAM (FM-Stereo-Multiplex). ■ d'Arsonval Tuning Meter. ■ Two-Position Selector (MONO or STEREO). ■ Stereo Filter Switch (OFF, ON). ■ Power Switch: Off, On. ■ Station Selector. ■ Four output jacks on rear panel for amplifier and tape recorder.

THE FISHER FM-100-B

■ THE NEW FM-100-B combines the finest wide-band design with advanced Multiplex circuitry — features that are a 'must' for low-noise FM-Stereo reception of outstanding quality.

OUTSTANDING FEATURES

■ STEREO BEACON Indicator and Automatic Switching System. ■ Tuning Meter. ■ Three-Position Mode Selector (MONO, STEREO-MONO AUTOMATIC, and STEREO FILTER). ■ Exclusive IF muting circuit for stereo and mono. ■ Sensitivity Control (AC Off, Distant, Local). ■ Station Selector with Flywheel. ■ Dual Channel Level Controls and four output jacks on rear panel.

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THE FISHER FM-200-B

■ THE FM-200-B is unquestionably the world's finest FM tuner intended specifically for home use. It comes within a hairbreadth of the professional-standard FM-1000 and achieves a degree of sensitivity once considered unattainable.

OUTSTANDING FEATURES

■ STEREO BEACON and Automatic Switching System. ■ Tuning Meter. ■ Exclusive IF muting circuit. ■ CONTROLS: Four-Position Mode Selector (MONO, STEREO-MONO AUTOMATIC, STEREO FILTER, STEREO), Variable Muting, Sensitivity Control (AC OFF, DISTANT, LOCAL), Station Selector with Automatic MicroTune AFC.

THE FISHER FM-1000

■ THE NEW FM-1000 represents the sum total of FM engineering knowledge and experience. It is a masterpiece in design and circuitry, created for the audio connoisseur seeking the absolute ultimate in FM-Stereo tuners, regardless of cost.

OUTSTANDING FEATURES

■ STEREO BEACON. ■ Separate Audio Level VU Meter. ■ RF Signal-Strength Meter. ■ Exclusive IF muting circuit. ■ CONTROLS: Station Selector with Automatic MicroTune AFC, Audio Level, Power On-Off, Mode Selector (MONO, AUTOMATIC, STEREO, STEREO FILTER), Calibrated Audio Level Meter Range Control, Variable Muting, Front-End Circuit Selector (crystal and tuneable.)

THE FISHER FMR-1

Broadcast Network FM-Stereo-Multiplex Tuner for Monitor and Relay Applications

■ THE FMR-1 is identical to the FM-1000 except for details such as the standard 19-inch rack panel. It can be supplied, on special order, with a plug-in crystal-controlled front end, to maintain its fixed frequency within 0.0015%, for unattended operation.

TECHNICAL SPECIFICATIONS

	THE FISHER FM-50-B	THE FISHER KM-61	THE FISHER FM-100-B	THE FISHER FM-200-B	THE FISHER FM-1000 (FMR-1)
Frequency Response	20-15,000 cps	20-15,000 cps	20-15,000 cps	20-15,000 cps	20-15,000 cps
Sensitivity (20 db quieting with 72 ohm antenna)	0.7 uV	0.6 uV	0.6 uV	0.5 uV	0.45 uV
Sensitivity (IHFM)	2.2 uV	1.8 uV	1.8 uV	1.6 uV	1.5 uV
Signal-to-Noise Ratio (100% Modulation)	70 db	70 db	70 db	75 db	75 db
Selectivity (Alternate Channel)	55 db	60 db	65 db	65 db	66 db
Capture Ratio (IHFM)	2.5 db	2.5 db	2.2 db	1.5 db	1.5 db
Front-End Circuit	TRIOMATIC	GOLDEN CASCODE	GOLDEN CASCODE	FOUR-GANG GOLDEN CASCODE	FOUR-GANG GOLDEN CASCODE
FM I.F. Stages	4	4	5	5	6
FM Wide-Band Limiters	3	3	4	5	5
Wide-Band Ratio Detector	Yes	Yes	Yes	Yes	Yes
Stereo-Mono Automatic Switching	No	No	Yes	Yes	Yes
Harmonic Distortion (100% Modulation)	0.5%	0.5%	0.4%	0.3%	0.3%
FM-Stereo Separation (At 1 Kc.)	35 db	35 db	35 db	35 db	35 db
Stereo Indicator	STEREO BEAM	STEREO BEAM	STEREO BEACON	STEREO BEACON	STEREO BEACON
Inter-Station Muting	No	No	Yes	Yes	Yes
Number of Tubes	10	11	12	15	18 (Less Crystal Front-End)
Number of Diodes	12	12	13	17	15
Permanent, Bridge-Type Rectifiers	Yes	Yes	Yes	Yes	Yes
Rated Audio Output	2.0 Volts	2.0 Volts	2.0 Volts	2.0 Volts	2.0 Volts
Chassis Dimensions	15-1/8" wide, 4-13/16" high, 11-7/8" deep	15-1/8" wide, 4-13/16" high, 13" deep	15-1/8" wide, 4-13/16" high, 13" deep	15-1/8" wide, 4-13/16" high, 13" deep	16-15/16" wide, 4-13/16" high, 12-1/2" deep
Weight	14 pounds	18 pounds	18 pounds	19 pounds	20 pounds
Cabinetry	Choice of Walnut, Model 10-UW; Mahogany, Model 10-UM, or Metal Cabinet in simulated leather, Model MC-2.				In Walnut, Model 20-UW, or Metal Cabinet in simulated leather Model TA-10.

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.

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THE GENIUS OF FISHER ENGINEERING

GOLDEN SYNCHRODE

This new FISHER front-end design comprises a high-gain, frame-grid triode plus three tuned variable circuits and an additional fixed input circuit of revolutionary design. It affords extremely high selectivity and rejection of spurious image and IF response, with far greater overload protection than any previous design. This feature is particularly important in those urban areas having a number of nearby, powerful radio stations.

GOLDEN CASCODE

This widely-acclaimed FISHER front-end design provides unprecedented sensitivity as well as outstanding image and spurious response rejection. In the FISHER FM-200-B and and the FISHER FM-1000, the famous GOLDEN CASCODE circuit uses a *four*-gang variable condenser (four separate, tuned circuits) to provide a degree of selectivity heretofore considered unattainable.

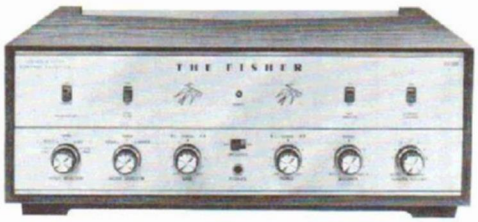
STEREO BEAM and STEREO BEACON

These FISHER inventions make multiplex a pleasure, not a problem! For the complete enjoyment of stereo programs, FISHER engineers created exclusive STEREO BEAM and STEREO BEACON. STEREO BEAM automatically signals the presence of FM-Stereo Multiplex programs. STEREO BEACON not only *automatically* indicates (with a jewel-beacon) the presence of FM-Stereo programs, but *automatically* switches the equipment to stereo operation. On monaural programs, STEREO BEACON *automatically* switches the equipment to mono operation. Every FISHER tuner and receiver features STEREO BEAM or STEREO BEACON as one of many advanced engineering features.

FISHER STEREO MASTER CONTROL AMPLIFIERS

High Audio Power and Flexible Control Center On A Beautifully Integrated Single Chassis

THE FISHER X-100-B



50 WATTS OF MUSIC POWER The new FISHER X-100-B provides maximum circuit flexibility with a full complement of precision controls of instantly appreciated simplicity. It is the unquestioned leader in its moderate price range and incorporates the latest FISHER engineering developments.

OUTSTANDING FEATURES

■ CONTROLS: Balance, Volume (with AC Power Switch), dual-concentric Bass and Treble controls. ■ SWITCHES: Speaker, Equalization, High Filter, Tape Monitor, Loudness Contour. ■ Input Selector Positions: TAPE HEAD, PHONO, TUNER, AUX, TAPE PLAY. ■ Mode Positions: MONO, STEREO, REVERSE.

THE FISHER X-101-C

60 WATTS OF MUSIC POWER The new FISHER X-101-C incorporates an ingenious Hinged Control-Cover — a feature that is years ahead of its time in basic design. It provides a convenience so obvious and long-needed that it is destined to become standard design practice. Constantly-used controls are in full view, instantly accessible. Occasionally-used controls are concealed behind the Hinged Control-Cover, yet are immediately accessible. (See details on next page.)

OUTSTANDING FEATURES

■ Power-derived output permits direct connection of center-channel or extension speaker. Exclusive FISHER Direct-Tape-Monitor. Full complement of controls.

THE FISHER X-202-B

80 WATTS OF MUSIC POWER The FISHER X-202-B is the combination of a remarkably flexible Master Audio Control and a high-powered, dual-channel amplifier. The exclusive FISHER Direct-Tape-Monitor is an important feature of this outstanding instrument. At the flick of a switch, it permits monitoring, with the use of all controls and switches during tape playback, *without changing cable connections*.

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OUTSTANDING FEATURES

■ CONTROLS: Stereo Dimension, Balance, Dual Bass and Treble, Center Speaker Switch, Five-Position Mode Selector, Nine-Position Program Selector (MIC, 3¾, 7½, COL, RIAA-1, RIAA-2, TUNER, AUX, TAPE PLAY), Loudness Contour.

THE FISHER X-1000

110 WATTS OF MUSIC POWER The FISHER Studio Standard, Model X-1000, is by far the most powerful and in every way the most advanced single-chassis Control Amplifier in the world. Equipment of this caliber has heretofore been available only as two separate units, requiring considerably more space, as well as being significantly higher in cost.

OUTSTANDING FEATURES

■ CONTROLS: Low Level Inputs, Center Power Level, Earphones/Speakers Selector, Dual Bass and Treble, Two Earphone Jacks, Nine-Position Program Equalizer Control, Five-Position Mode Selector Switch, Stereo Balance Control, Volume and Loudness Contour, Stereo Dimension.

FOR PROFESSIONAL USERS:

Audio Controls and Stereo Power Amplifier On Separate Chassis

THE FISHER 400-CX

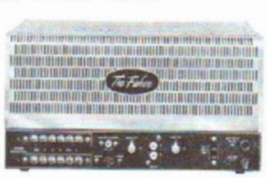
Professional Stereo Master Audio Control

The new FISHER 400-CX has 28 controls and 18 inputs, all logically arranged for easy operation, even by the novice.

■ CONTROLS: Stereo Dimension, Master Volume (On-Off), 8-position Low-Level Equalizer, Stereo Balance, Dual Bass and Treble, Mono-Stereo Mode Selector, Center-Speaker Volume.

THE FISHER SA-100

50-Watt Stereo Power Amplifier



This truly remarkable instrument is equipped with features normally encountered only in the costliest of dual-channel amplifiers. Equipped with a center channel output, the SA-100 permits you to add a third amplifier and speaker system at any time, for augmented stereo coverage and realism.

TECHNICAL SPECIFICATIONS

	FISHER X-100-B	FISHER X-101-C	FISHER X-202-B	FISHER X-1000	FISHER 400-CX	FISHER SA-100
Rated Music Power Output (IHFM) Both Channels	50 Watts	60 Watts	80 Watts	110 Watts	(2.5 V RMS)	50 Watts
Harmonic Distortion At Rated Output	0.5%	0.5%	0.5%	0.5%	0.04%	0.8%
Power Output (RMS) Per Channel	24 Watts	27 Watts	35 Watts	50 Watts	(Max. 25 V RMS)	24 Watts
Hum and Noise, in db below rated output: Amplifier Section	88 db	88 db	90 db	95 db	NA*	90 db (Overall)
High Level Inputs	80 db	80 db	80 db	80 db	80 db	NA*
Frequency Response, in DB Overall	20-20,000 cps ±1 db	20-20,000 cps ±1 db	20-20,000 cps ±1 db	20-20,000 cps ±½ db	10-25,000 cps ±1 db	20-20,000 cps +0 db, —½ db
Frequency Response, in DB Amplifier Section	10-75,000 cps +0, —1.5 db	10-80,000 cps +0, —1.5 db	8-100,000 cps +0, —1 db	5-100,000 cps +0, —1 db	NA*	20-20,000 cps +0 db, —½ db
Sensitivity (for rated output) High Level Inputs	300 mv	300 mv	280 mv	230 mv	200 mv	1 Volt
Phono Inputs	3.5 mv	3.5 mv	3.5 mv	3.3 mv	2.8 mv	NA*
Tape Head Inputs	2 mv	2 mv	2 mv	1.5 mv	1.5 mv	NA*
Direct-Tape-Monitor	Yes	Yes	Yes	Yes	Yes	NA*
Earphone Jack On Front Panel	Yes	Yes	Yes	Yes (Two)	No	NA*
Derived Power, Center Channel Output	Yes	Yes	Yes	Yes	NA*	No†
High Filter	Yes	Yes	Yes	Yes	Yes	NA*
Rumble Filter	No	No	Yes	Yes	Yes	NA*
Subsonic Cutoff (12 db/octave)	Yes	Yes	Yes	Yes	Yes	No
Switchable Dual Magnetic Stereo Inputs	Yes	Yes	Yes	Yes	Yes	NA*
Number of tubes	10	10	12	14	10	7
Number of Diodes	2	2	4	7	2	1
Dimensions	15-1/8" wide, 4-13/16" high, 11-7/8" deep	15-1/8" wide, 4-13/16" high, 11-7/8" deep	15-1/8" wide, 4-13/16" high, 12-1/2" deep	16-15/16" wide, 4-13/16" high, 13-3/4" deep	15-1/8" wide, 4-13/16" high, 12" deep	12-9/16" wide, 6-3/4" high, 7-1/8" deep
Weight	22 pounds	26 pounds	30 pounds	44 pounds	18 pounds	24½ pounds
Cabinetry	Walnut, Model 10-UW, Mahogany, Model 10-UM, or Metal Cabinet in simulated leather, Model MC-2.			Available in Walnut, Model 20-UWX.	Walnut, Model 10-UW, Mahogany, Model 10-UM, or Metal Cabinet in simulated leather, Model MC-2.	Includes Protective Brass-plated Cage

* NA – Not Applicable
†Has derived center channel for third amplifier

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THE GENIUS OF FISHER ENGINEERING

The new FISHER X-101-C master control amplifier was designed to be the first genuine all-family amplifier in high fidelity history. For the audiophile members of the family, the FISHER X-101-C incorporates comprehensive controls of utmost versatility. But for immediate enjoyment of stereo by even the least technically inclined members of the family, only the 'must' controls are in full view, for instant use. These frequently-used controls consist of the Pushbutton Program Selector (TAPE HEAD, PHONO, TUNER, AUX, TAPE PLAY), Mode Selector (STEREO, MONO, REVERSE), and Volume Control.

The occasionally-used controls are hidden behind the Control Cover, yet are immediately accessible when needed. They consist of four controls (OUTPUT SELECTOR, BASS, TREBLE, BALANCE), and four switches, (EQUALIZATION, HIGH FILTER, TAPE MONITOR, LOUDNESS CONTOUR.)

The new FISHER Hinged Control-Cover

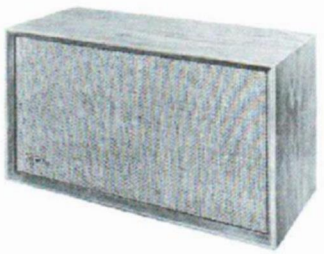
NEW FISHER LOUDSPEAKER SYSTEMS

The perfection of sound reproduction: high compliance and high efficiency in new compact enclosures of unequalled excellence

THE FISHER XP-4A

FOUR SPEAKER THREE-WAY SPEAKER SYSTEM

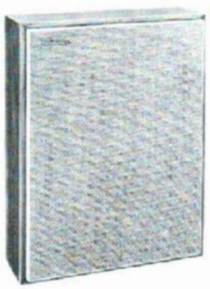
The new FISHER XP-4A incorporates several significant advancements in loudspeaker design and construction. As a totally new concept, it utilizes a voice coil wound on pure electrolytic copper. This affords a superior resistance to humidity and temperature variations, and offers a pronounced electrical damping effect on all moving parts of the speaker mechanism. The result is an unprecedented transparency of sound, and perfect reproduction of transients. Famous FISHER unit construction is another important feature of the XP-4A.



THE FISHER XP-1A

THREE-WAY SPEAKER SYSTEM

The new FISHER XP-1A has the most advanced engineering features, including a balance control to permit the user to adjust the ratio of the low and high-frequency response to suit precisely the demands of the room acoustics and personal taste. Its advanced design now makes it possible to obtain magnificent sound reproduction with any amplifier of 10 watts power or more.



THE FISHER KS-1A

SLIM-LINE THREE-WAY SPEAKER SYSTEM

Extreme clarity, precise transients, full and rich texture—these are of a calibre truly unprecedented in a system of this compact size. The new FISHER KS-1A lends itself to virtually any type of installation. It can be mounted on a wall or placed on the floor or in a bookshelf, without degradation in bass response.

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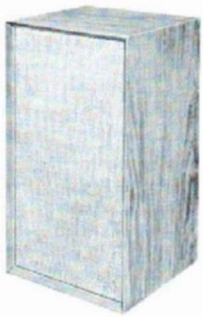
THE FISHER XP-2A

THREE-WAY SPEAKER SYSTEM

In the FISHER XP-2A Speaker System, the many advantages of FISHER high-efficiency, high-compliance design have been incorporated in a unit of moderate price. Through its carefully evolved design, the FISHER XP-2A offers a remarkable transient response and an unusually high overload capacity. Frequency response is smooth and transparent throughout its range.



All Fisher Speaker Systems can be placed horizontally or vertically.

TECHNICAL SPECIFICATIONS

	THE FISHER XP-1A	THE FISHER XP-2A	THE FISHER XP-4A	THE FISHER KS-1A
Frequency Response	30-18,000 cps	35-18,000 cps	28-20,000 cps	40-18,500 cps
Bass Speaker Diameter	12″	10″	12″	10″
Mid-Range Speaker Diameter	5″	5″	(Two) 5″	5″
High Frequency Speaker Diameter	3½″	3½″	2″ (hemispherical)	3½″
Voice Coil Diameter	2″	1½″	2″	1½″
Crossover Networks	At 1800 and 3000 cps	At 1600 and 5000 cps	At 1200 and 2500 cps	At 1600 and 5000 cps
Impedance In Ohms	8	8	8	8
Amplifier Power Capability	10 Watts Minimum for each channel			
Speaker Dimensions	24″ wide, 13¼″ high, 11¾″ deep	22″ wide, 12″ high, 11″ deep	14″ wide, 24½″ high, 12″ deep	24″ wide, 18″ high, 5¾″ deep
Shipping Weight	45 pounds	35 pounds	60 pounds	26 pounds
Cabinetry	Available in Scandinavian Walnut, Mahogany or Unstained Birch			

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FISHER HIGH FIDELITY STEREO ACCESSORIES

These specially designed accessories have been created by FISHER engineers for the discriminating listener who seeks the ultimate in convenience and flexibility.

THE FISHER
Model K-10

DYNAMIC
SPACEXPANDER®

World's Finest Reverberation Unit for Home and Professional Use

PLAYS STEREO OR MONO PROGRAMS

With this remarkable device, the owner of a home music system can now add a new dimension to listening — the dimension that comes from the addition of natural reverberation to the program. One control regulates the desired degree of reverberation.

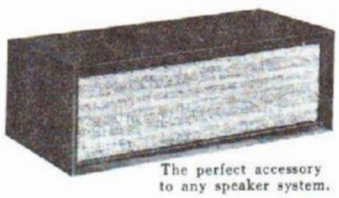
The basic principle involved is quite simple. Natural reverberation is created by the reflection of sound from the walls and ceiling. These reflections reach the listener's ears a fraction of a second later than the direct sound from the orchestra or soloist. It is this slight 'delay' that makes it possible for one to sense the size of the room or auditorium.

The FISHER K-10 Dynamic SPACEXPANDER® recreates electronically the reverberation of the concert hall and, in this manner, makes for *auditorium* listening pleasure even in the smallest of rooms. The K-10 works equally well on records, tape and broadcasts. Installation is simple.

THE FISHER PR-6
Basic Preamplifier

TECHNICAL SPECIFICATIONS

■ Two high gain triode stages (6SC7.) ■ Gain: Phono, 1 v output for 10 mv input; microphone, 1 v output for 1 mv input; tape, 1 v output for 5 mv input. ■ Frequency Response: 30 to 20,000 cps within ±2 db. ■ Hum: Better than 60 db below 1 v for phono; better than 70 db below 1 v for microphone. ■ Equalization: RIAA for phono, NAB for tape. ■ Self-Powered (105-120 V.A.C.) ■ DIMENSIONS: 3¾" wide, 3⅝" high, 3⅝" deep. ■ WEIGHT: 1½ pounds.



The perfect accessory to any speaker system.

THE FISHER WS-1
WIDE-SURROUND® Speaker System

These extremely compact units augment the sound from the primary speaker systems to create a breadth of music reproduction that makes every seat in the room a 'front-row-center' location. The FISHER WIDE-SURROUND® system will overcome the 'point source' of sound, and gives the listener the illusion that he is sitting in one of the most desirable seats in the concert hall.

OUTSTANDING FEATURES

■ 10" x 2¾" oval, Alnico V permanent magnet speaker. ■ Frequency Response: 250 to 15,000 cps, cutoff at 250 cycles. ■ Available in Walnut, Mahogany, Teak, Italian Provincial or Cherry. ■ DIMENSIONS: 11½" wide, 3⅞" high, 4⅜" deep. WEIGHT: 4½ pounds.

4950 3150 125

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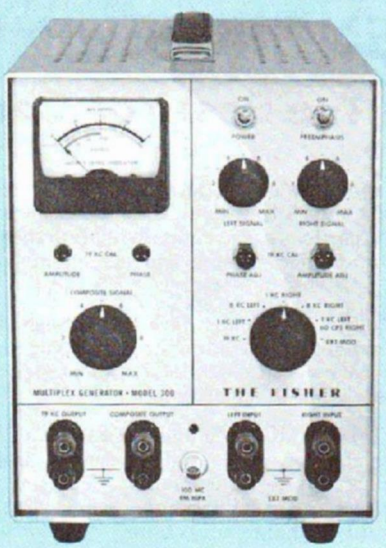
THE FISHER RK-1
Stereo Remote Control Unit

For use with the FISHER 400-CX, X-1000 and X-202-B

Now a listener can balance the level in a stereophonic system simply by turning the dials of the remote control unit.

The FISHER RK-1 consists of a control assembly, 30 feet of cable and an adaptor plug. When in operation, the left dial controls volume from speakers at the left, and the right dial regulates volume from speakers at the right.

THE FISHER
ULTIPLEX GENERATOR
Model 300



A complete test generator, with built-in FM signal generator, designed and constructed to rigid laboratory specifications

This new FISHER Multiplex Signal Test Generator features high accuracy and extreme stability, more than necessary to meet the strict requirements of the Multiplex system approved by the Federal Communications Commission.

Other than an oscilloscope, no additional equipment is needed for the complete test and alignment of Multiplex equipment, regardless of the type of circuit in question.

OUTSTANDING FEATURES

■ Front panel output meter is a true peak-to-peak indicator, providing the only correct method of measuring the complex waveform of the composite Multiplex signal.

■ The phase relationship of the 19 Kc pilot carrier and the composite signal can be monitored (with an oscilloscope) from the special 19 Kc output on the front panel.

■ The amplitude of the 19 Kc signal can also be monitored simply by depressing a front-panel push-button. Amplitude and phase adjustments of the 19 Kc signal are also available on the front panel.

■ A built-in switchable pre-emphasis network permits both rapid checks of de-emphasis circuits and introduction of standard FM transmission equalization. Audible tests can be conducted under perfectly simulated transmission conditions.

■ An SCA input is available for the addition of SCA information to the Multiplex signal.

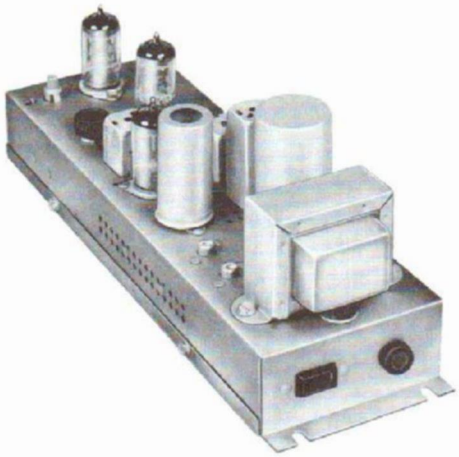
■ The main selector switch on the front panel permits the choice of test frequencies in the most logical sequence, for rapid testing and adjustment.

■ The built-in FM signal generator, although aligned at the factory at 100 Mc, is adjustable within a range from 97 to 103 Mc. This makes it possible to avoid interference with local stations.

TECHNICAL SPECIFICATIONS ON REQUEST

UNIVERSAL MULTIPLEX ADAPTORS

Your present stereo system is *not* obsolete! Add a FISHER Adaptor to any good quality tuner and you can enjoy FM-Stereo-Multiplex, regardless of the tuner's make, age or model.



THE FISHER MPX-100

WITH EXCLUSIVE STEREO BEACON

FISHER makes Multiplex a pleasure, not a problem with STEREO BEACON. This FISHER invention *automatically* indicates presence of stereo and *automatically* switches to stereo operation. On monaural programs, STEREO BEACON *automatically* switches to mono programs.

OUTSTANDING FEATURES

■ Selector (AC POWER, TUNER, STEREO-MONO AUTOMATIC, STEREO MANUAL). ■ Two-Position Noise Filter. ■ Auxiliary AC receptacle on rear apron. ■ Dual Output Level Controls. ■ Variable Separation Control. ■ Two Output and Four Input Jacks. Cabinets available in Walnut, Model 40-UW and Mahogany, Model 40-UM.

THE FISHER MPX-200

FOR CONCEALED INSTALLATION

The FISHER MPX-200 has basic electronic features of the MPX-100 but has been designed for those who wish to add a Multiplex Adaptor in a concealed location, eliminating the need for changing the front appearance of their present equipment.

OUTSTANDING FEATURES

■ Self-Powered. ■ Can be placed up to three feet from tuner or receiver. ■ Two Level Controls match the volume of the Stereo programs to phono, tape, etc. ■ Selector Switch to record stereo programs monophonically! ■ Precision separation control matches the MPX-200 to *any* tuner or receiver. ■ Unusually effective filtering, for flawless tape recording.

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TECHNICAL SPECIFICATIONS OF THE MPX-100 AND MPX-200

- Frequency Response: 20-15,000 cps ± 1 db.
- Sensitivity: MPX-100, 15 millivolts. MPX-200, 20 millivolts (for 19 kc signal).
- Gain: 16 db.
- Input (Low Level): 2.0 volts.
- Input (High Level): 8.0 volts.
- Harmonic Distortion: 0.5% (at 1 kc).
- Hum and Noise: Better than —70 db.
- Power Requirements: Self-Powered, 105-120 volts, 50/60 cycles.
- Power Consumption: MPX-100, 25 watts. MPX-200, 14 watts.
- Tubes: MPX-100, five, plus selenium rectifier. MPX-200, four, plus selenium rectifier.
- Diodes: MPX-100, total of ten. MPX-200, total of eight.
- Chassis Dimensions: MPX-100, 4¾" wide, 4$^{13}/_{16}$" high, 12" deep.
  MPX-200, 12" wide, 4" high, 3½" deep.
- Weight: MPX-100, 9 pounds. MPX-200, 3½ pounds.

THE GENIUS OF FISHER ENGINEERING

Here's Why FISHER Multiplex Adaptors Are The Best You Can Buy

THE TIME DIVISION MULTIPLEX SYSTEM

Multiplex adaptors commonly sold use filters to separate the *Left* and *Right* information. Since these filters have inherent phase shift, they do not permit sufficient separation of both channels. In addition, they cannot possibly provide a circuitry as stable as the system that eliminates the use of filters. For while this circuitry—called "matrix circuitry"—performs the basic 'separation' multiplex function, it does not eliminate unwanted noise and weak signals, nor does it provide sufficient separation.

For these reasons FISHER scientists designed a time-division multiplex system for recovery of the left and right channel information. This system involves using the 38 Kc subcarrier (derived from the 19 Kc pilot carrier) to switch rapidly between the left and right output terminals. This switching is synchronized with the 38 Kc signal of the transmitter so that the left and right portions are accurately fed into their respective terminals for proper phasing and maximum separation *at all times*.

All FISHER Multiplex Adaptors have been designed for use with either discriminator or ratio detector type tuners or receivers. They have every possible control needed to work properly with any good tuner or receiver.

Although the FISHER MPX-100 and the FISHER MPX-200 have been designed for open, and concealed, installation respectively, both are of the same quality — featuring freedom from distortion, unusually high channel separation, and an extremely favorable signal-to-noise ratio.

THERE IS A FISHER STEREO SYSTEM FOR EVERY CUSTOM INSTALLATION PLAN

These three basic plans show the proper combination of FISHER Components required to provide Stereo

FISHER STEREO PLAN 1

Select one from each group.

500-B Receiver 800-B Receiver	XP-1A Loudspeaker System XP-2A Loudspeaker System XP-4A Loudspeaker System

Simply add a record changer and you have a complete home stereophonic system.

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FISHER STEREO PLAN 2

Select one from each group.

R-200 AM-FM Tuner KM-61 FM Tuner FM-50-B FM Tuner FM-100-B FM Tuner FM-200-B FM Tuner FM-1000 FM Tuner	X-100-B 50 Watt Master Control Amplifier X-101-C 60-Watt Master Control Amplifier X-202-B 80-Watt Master Control Amplifier X-1000 110-Watt Master Control Amplifier	XP-1A Loudspeaker System XP-2A Loudspeaker System XP-4A Loudspeaker System

Simply add a record changer and you have a complete home stereophonic system.

FISHER STEREO PLAN 3

Select one from each group.

R-200 AM-FM Tuner KM-61 FM Tuner FM-50-B FM Tuner FM-100-B FM Tuner FM-200-B FM Tuner FM-1000 FM Tuner	400-CX Audio Master Control	SA-100 50-Watt Stereo Power Amplifier SA-300 100-Watt Stereo Power Amplifier	XP-1A Loudspeaker System XP-2A Loudspeaker System XP-4A Loudspeaker System

Simply add a record changer and you have a complete home stereophonic system.

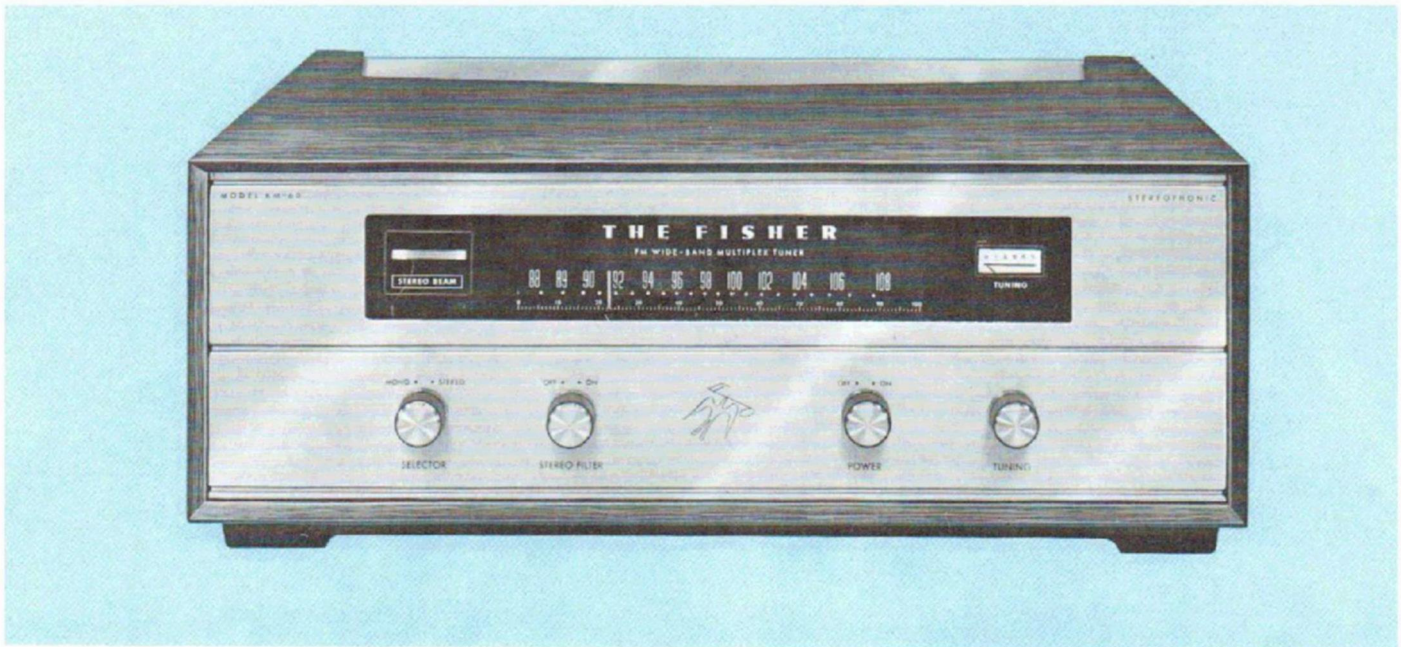
There are no specific rules to follow in determining a plan suitable for your home. Certainly the room dimensions, preference for open or concealed installation, and the general arrangement of your furniture should all be carefully considered before making a final decision. Whatever Fisher stereo plan you ultimately select, you can be assured of complete enjoyment of the musical program. In performance, appearance, design and flexibility of control, all Fisher components reflect the depth of engineering know-how based on 25 years of leadership. If there are any questions on which you need assistance, we welcome your inquiry, which will receive a prompt and informed reply. Please write to MR. RICHARD HAMILTON, *Customer Relations Department*.

THE FISHER STRATAKITS

Archiv Michael Otto beim Hersteller

FOR OUTSTANDING VALUE AND TOP PERFORMANCE —BUILD FISHER HIGH FIDELITY STRATAKITS

You do not need technical knowledge, special skills or a workbench full of tools to build a FISHER STRATAKIT. The STRATAKIT method of construction permits assembly by easy, error-proof stages (STRATA), each stage corresponding to a specific, illustrated page in the Instruction Manual and to a separate, clearly identified transparent packet of parts. Large, three-dimensional diagrams guide you every step of the way. Just perform the numbered step and check it off. Errors of omission, if any, can thus be checked stage-by-stage and page-by-page before proceeding to the next stage. It's that simple with a FISHER STRATAKIT. Major components come already mounted on the chassis, and wires are pre-cut to length and pre-stripped for every stage. Schematic diagrams are also included for those who like to see how the various electronic circuits are designed.



THE FISHER KM-60
STRATAKIT

FM-Stereo-Multiplex Wide-Band Tuner With Exclusive Stereo Beam

Here is the supreme culmination of FISHER engineering genius — an extremely sensitive tuner with the most sophisticated FM circuitry. Truly, the KM-60 is an investment that assures the kit builder years of unsurpassed performance.

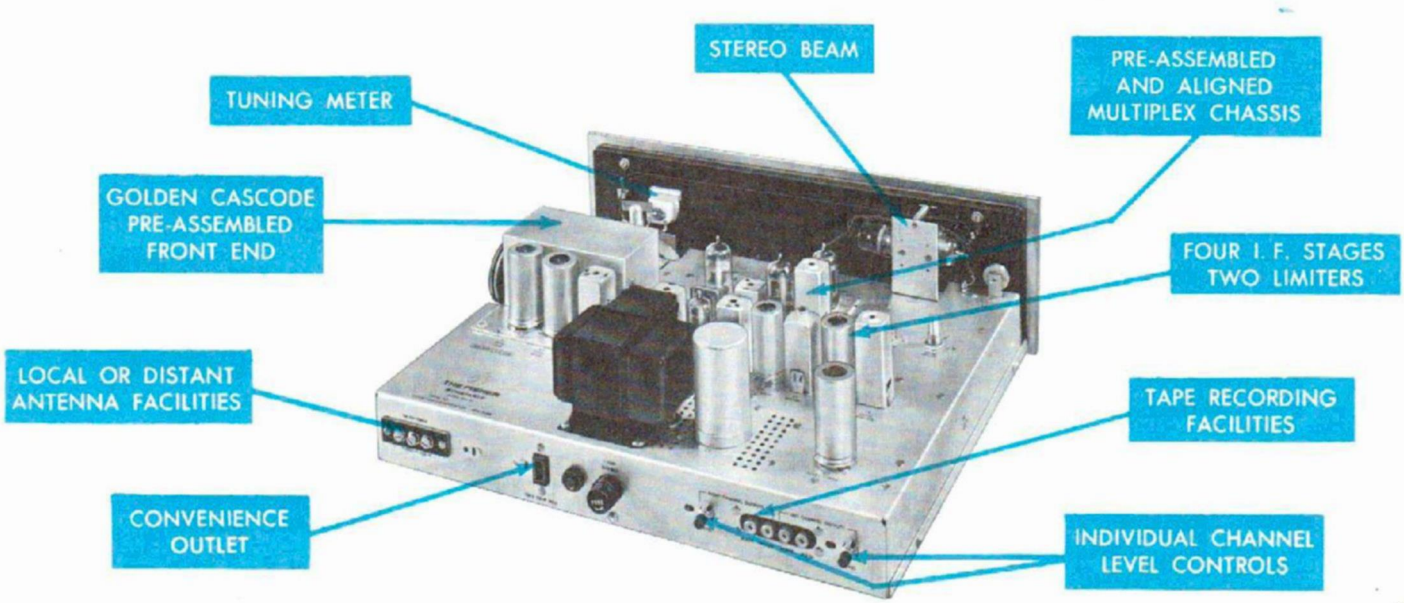
© beim Autor/Keller
Archiv Michael Dye

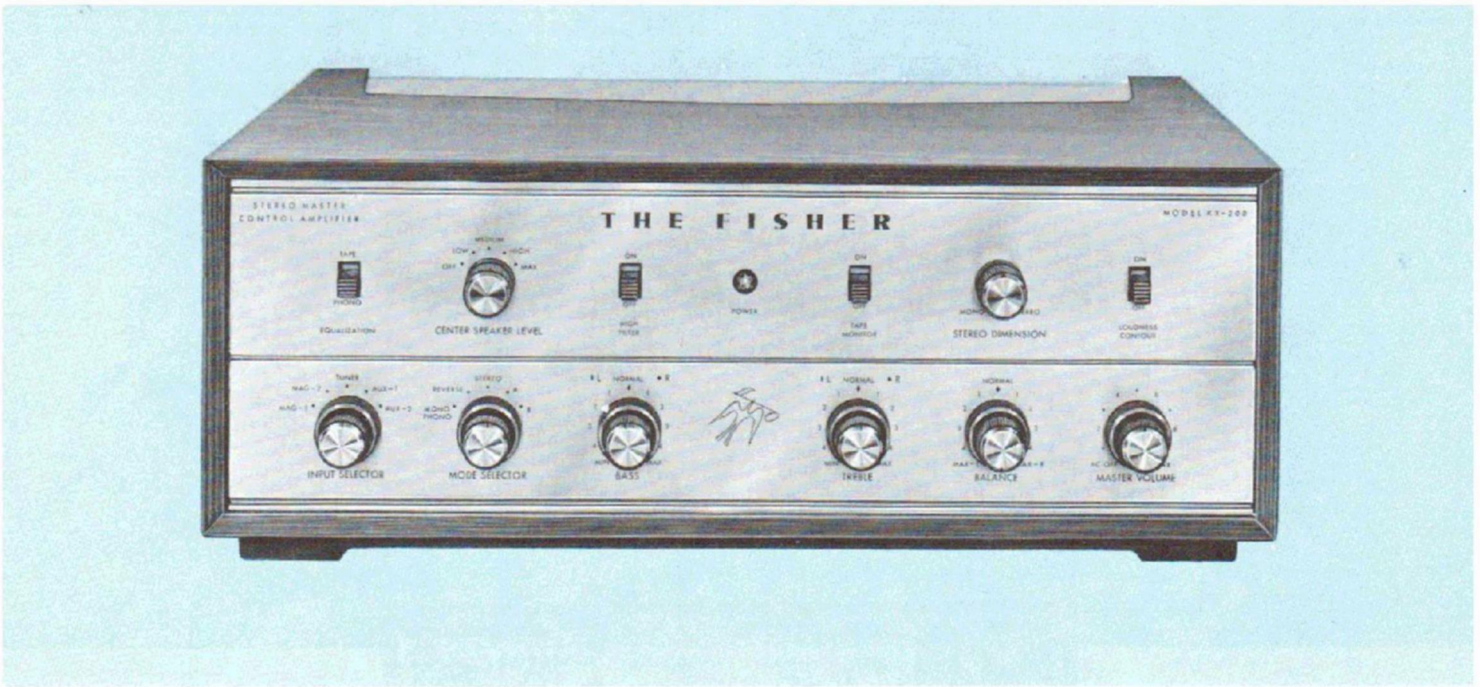
OUTSTANDING FEATURES

■ Extremely wide-band design, coupled with advanced multiplex circuitry and the new GOLDEN CASCODE front-end, assure the clearest and most reliable reception possible even from weak signals or distant stations. ■ STEREO BEAM indicates whether or not the FM station is broadcasting in stereo. Makes Multiplex a pleasure, not a problem. ■ Precision d'Arsonval meter for micro-accurate tuning or easy, fool-proof alignment of the IF and ratio detector sections. ■ FM-Stereo sub-carrier filter suppresses noise on the sub-carrier when reception conditions are poor (weak signals or fringe areas) without affecting the frequency response of the signal. ■ Pre-aligned front-end and Multiplex section are factory aligned and tested, and mounted on the chassis. No electronic instruments for alignment are necessary. ■ Four IF stages and two limiters assure enjoyable, distortion-free reception to a degree never before attained in any tuner kit.

TECHNICAL SPECIFICATIONS

■ Sensitivity: 0.6 microvolts (20 db quieting with 72-ohm antenna), 1.8 microvolts IHFM standard. ■ Signal-to-noise ratio: 70 db (at 100% modulation.) ■ Selectivity: 60 db (alternate channel.) ■ Capture Ratio: 2.5 db (IHFM standard.) ■ FM Harmonic Distortion: Less than 0.5% (400 cps, 100% modulated.) ■ Audio Frequency Response: Uniform, ±1 db, 20-15,000 cps (after de-emphasis.) ■ Rated Output Voltage: 2.0 volts. ■ Eleven Tubes. Twelve Diodes. ■ Selenium Rectifier. ■ DIMENSIONS: 15⅛" wide, 4-13/16" high, 13" deep. ■ SHIPPING WEIGHT: 18 pounds. ■ Wood Cabinets in Walnut, Model 10-UW; Mahogany, Model 10-UM; and Metal Cabinet in simulated leather, Model MC-2.





THE FISHER KX-200

STRATAKIT

80-WATT STEREO MASTER CONTROL AMPLIFIER

© Archiv Nimbus Otto

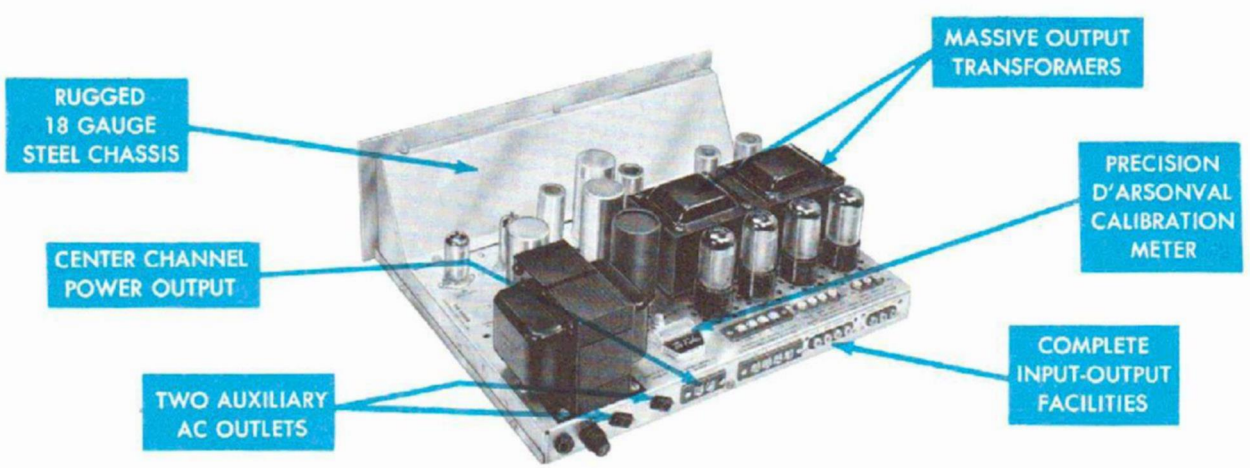
The most advanced features of a separate power amplifier and audio control unit are combined on one chassis to afford the kit builder all the perfection of versatility and performance formerly available only from FISHER factory-wired master control amplifiers.

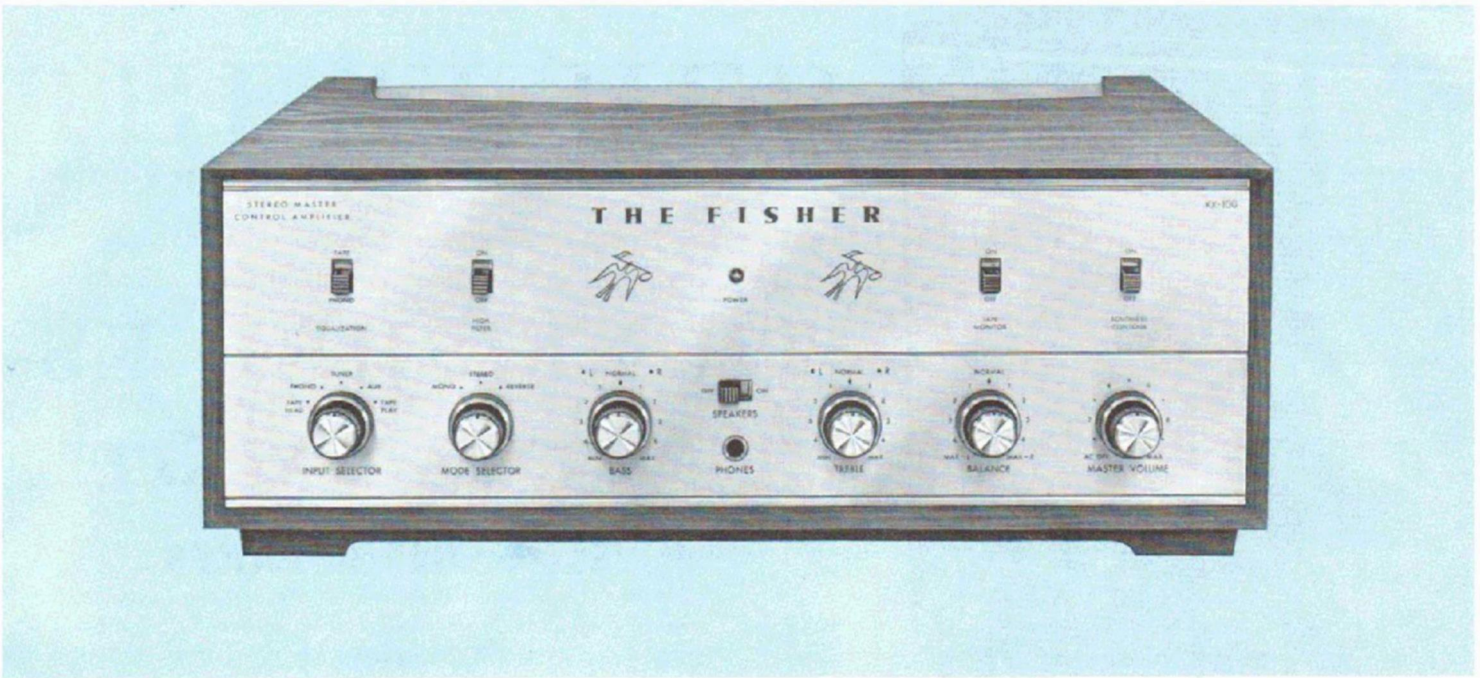
OUTSTANDING FEATURES

■ 80 Watts of Music Power. It will drive even the lowest-efficiency speaker systems to their maximum performance levels. ■ Precision d'Arsonval laboratory-type calibration meter permits accurate adjustment for peak performance. Optimum results are thus guaranteed from the start *and* in the years ahead. ■ A special power output is provided for a center channel or remote speaker. *An additional amplifier is not required.* This speaker can be controlled independently, from the front control panel of the KX-200. ■ Full-wave Silicon Rectifier power supply. DC voltage is provided for operation of *all* voltage amplifier heaters, not merely for the pre-amplifier heaters. ■ Total Range Dimension Control provides any degree of separation from a maximum stereophonic to a monophonic signal. ■ Equalization Switch and Dual-magnetic inputs permit connection of two magnetic cartridges, two tape heads, or one magnetic cartridge and one tape head. ■ Tape monitor facilities, dual bass and treble controls, loudness contour and high frequency filter switches, plus a host of other refinements, assure ease of operation and full enjoyment of the musical program.

TECHNICAL SPECIFICATIONS

■ Music Power Output: 80 watts (IHFM Standard, both channels.) ■ Harmonic Distortion: 0.4% (at rated output.) ■ Frequency Response: Uniform 20-20,000 cps ±1 db. Power Amplifier Section: 10-110,000 cps, +0, −1 db. ■ Total Hum and Noise: High Level Inputs, 80 db (450 mv ref.); Low Level Inputs, 66 db (6 mv ref.) ■ Input Sensitivity: High Level, 350 mv; Low Level, 3.5 mv. ■ Feedback Factor: 22 db. ■ Damping Factor: 10. ■ Bass Control Range: 30 db total (at 50 cps.) ■ Treble Control Range: 32 db total (at 10 kc.) ■ Output Impedance: 4, 8, 16 ohms (each channel.) ■ DIMENSIONS: 15⅛″ wide, 4-13/16″ high, 12½″ deep. ■ SHIPPING WEIGHT: 26 pounds. ■ Wood Cabinets available in Walnut, Model 10-UW; Mahogany, Model 10-UM; and Metal Cabinet in simulated leather, Model MC-2.





THE FISHER KX-100

STRATAKIT

50-WATT STEREO MASTER CONTROL AMPLIFIER

© beim Hersteller
Archiv Michael Otto

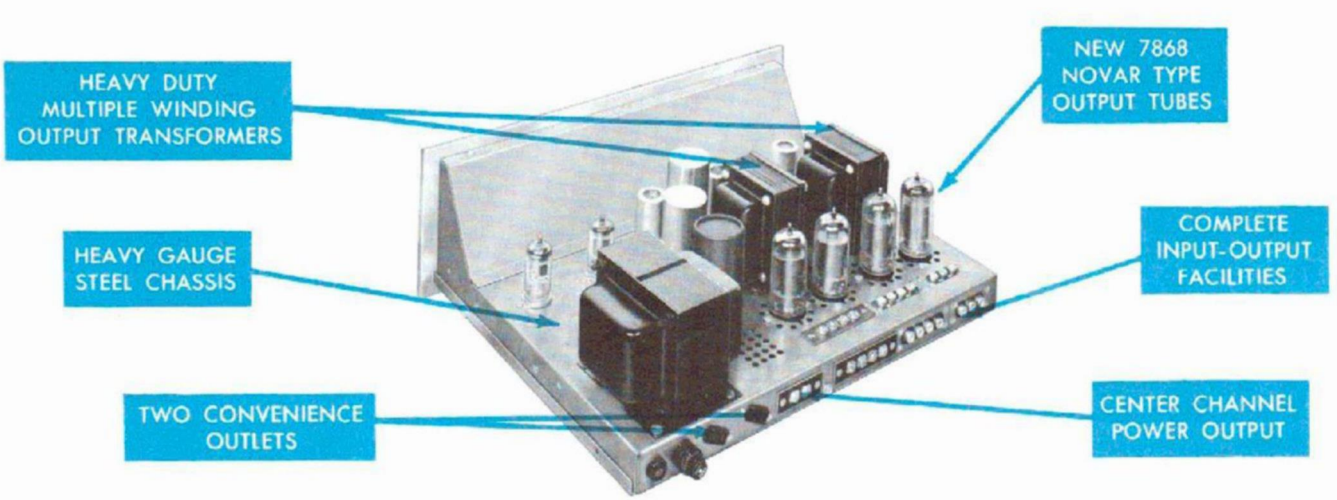
In its dimensions, and at its price range, the FISHER KX-100 has no equal in performance. It has been created for those who seek, in kit form, great reserve power and flexible audio control on one chassis.

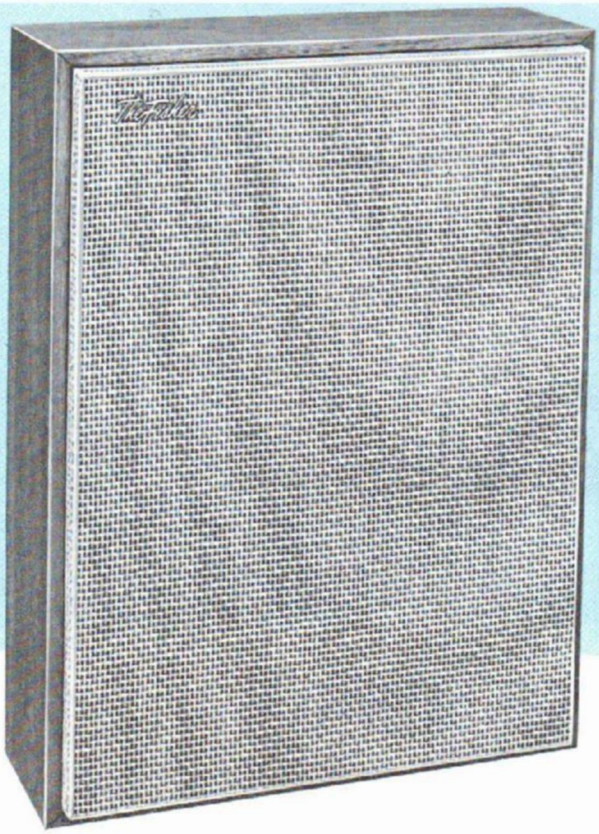
OUTSTANDING FEATURES

■ 50 Watts of Music Power. Has ample reserve power to drive the most inefficient speakers to maximum performance levels. ■ A special power output is provided for a center channel or remote speaker. *An additional amplifier is not required.* ■ Exclusive FISHER Duplex Tape Monitor permits tape monitoring with use of all tone controls *without changing cable connections.* ■ Has a front-panel headphone jack and switch for silencing speakers if desired. ■ Complete set of controls and switches, including High Filter, Loudness Contour and Equalization switches for tape decks and record players are included, as well as dual Bass and Treble controls and a full-range Balance Control.

TECHNICAL SPECIFICATIONS

■ Music Power Output: 50 watts (IHFM Standard, both channels.) ■ RMS Power (0.5% total harmonic distortion at 1 Kc, channels driven separately.): 24 watts. ■ RMS Power (1.0% IM distortion, SMPTE, channels driven simultaneously.): 24 watts. ■ Harmonic Distortion: 0.5% (at rated output.) ■ Frequency Response: Uniform 20-20,000 cps within 1 db. Power Amplifier Section: 10-75,000 cps, within 1 db. ■ Total Hum and Noise: High Level Inputs, 80 db (450 mv reference); Low Level Inputs, 65 db (6 mv reference.) ■ Input Sensitivity: High Level, 300 mv; Phono 3.5 mv; Tape, 2.0 mv. ■ Feedback Factor: 20 db. ■ Damping Factor: 8. ■ Bass Control Range: 22 db total (at 50 cps.) ■ Treble Control Range: 20 db total (at 10 kc.) ■ Output Impedance: 4, 8, 16 ohms (each channel.) ■ DIMENSIONS: 15⅜" wide, 12½" deep, 5¼" high. ■ SHIPPING WEIGHT: 24 pounds. ■ Wood Cabinets available in Walnut (Model 10-UW); Mahogany (Model 10-UM); Metal Cabinet in simulated leather (Model MC-2.)





THE FISHER KS-1 STRATAKIT

SLIM-LINE SPEAKER

The FISHER Model KS-1 Slim-Line Loudspeaker System uses the most advanced components and is engineered for unequalled sound. The unstrained transparent quality of the FISHER Slim-Line Speakers is instantly apparent. Extreme clarity, precise transients, full and rich texture — these are of a calibre truly unprecedented in a system of this size and cost.

The FISHER Slim-Line Speaker System lends itself to virtually any type of installation. It can be mounted on a wall or placed on the floor or in a bookshelf, without any degradation in bass response. The cabinet can be stained or painted as desired.

This new FISHER Speaker System is also available as a factory-assembled unit in finished-sanded birch or Scandinavian walnut, and is supplied with wall-mounting accessories.

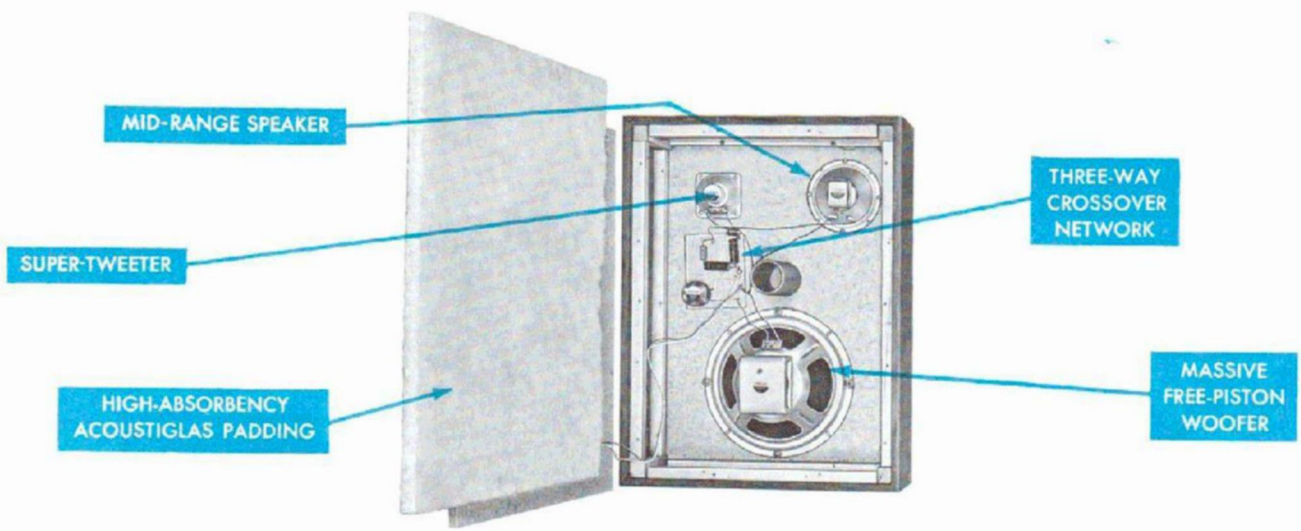
The attractive durable plastic grill cloth comes in a neutral color which will match any room decor.

© beim Herausgeber Jacob Michael Otte

TECHNICAL SPECIFICATIONS

■ Speaker Complement: 10-inch free-piston woofer with 30 cps free-air resonance and 4½-pound magnet structure; 5-inch AcoustiGlas packed midrange unit; 3½" super-tweeter. All speakers are *accurately balanced* at the factory for over-all smoothness of response. ■ Frequency Response: 40 cps to 18,500 cps. ■ Power: Only 10 watts required to achieve full room level (can safely handle 60 watts.) ■ LC-type crossover network with heavy air-core coils. Crossover frequencies: 1600 and 5000 cps. ■ Impedance: 8 ohms. ■ Cabinets are supplied with AcoustiGlas padding to eliminate resonance and parasitic vibration. ■ Cabinets in birch or walnut, finished-sanded, ready for painting or staining. Styled to harmonize with any room decor. ■ Dimensions: 18" wide, 24" high, only 5¾" deep. ■ Shipping Weight: 26 pounds.

THE ONLY SLIM-LINE SPEAKER IN KIT FORM!



THE FISHER-LINCOLN

the only automatic turntable that turns your records over (not just 'round and 'round)

The Fisher-Lincoln is the most versatile record player ever produced. It is the ultimate answer to the problem of completely undisturbed and uninterrupted listening pleasure for hours and hours on end. Load it with as many as ten records and it will play all twenty sides without your lifting a finger! The Fisher-Lincoln is totally unlike mass-produced mechanical record changers. Air is the motive power for all movements and provides a resilient cushion which absolutely prevents the jamming of mechanical parts. No part of the Fisher-Lincoln can be seriously damaged by careless handling because tone arm and changer are entirely independent. Here at last is the laboratory-quality record player which is so trouble-proof, so easy to operate, and so smooth and quiet that it is literally incomparable.

OUTSTANDING FEATURES:

- Automatically plays *both* sides of each record or one side only. Handles 7", 10" and 12" records *intermixed* and in any sequence. 33 and 45 rpm speeds are automatically matched to the record on the table.
- Repeats one or both sides of each record, if desired.
- Handles up to ten records (twenty sides)—over eight hours of continuous music. Also plays single records (one or both sides).
- Records are transported even more gently than one could by hand. No metal touches the record at any time during the play. There is no stationary spindle and center-hole wear is therefore eliminated.
- The *only* record in motion during operation is the one actually being played. There is no slippage. Furthermore, the tone arm and stylus are always at the ideal angle. (On ordinary changers the angle of the stylus can only be correct for *one* of the records in the stack being played.)
- Studio-quality turntable and two heavy-duty precision motors (one for turntable, one for changing mechanism). Three-gram stylus pressure. Drive wheels are released automatically at the end of play, eliminating rumble usually caused by drive wheel distortion.
- Final record grooves are protected against wear by use of an electric (not velocity-type) trip mechanism of high precision.
- Tone arm is designed with standard mount, for all makes of cartridges. Landing position is easily and instantly adjustable from the top.
- Change cycle is controlled by computer-type mechanism, making possible these remarkable wide selection of services:

  PLAY BOTH SIDES, PLAY ONE SIDE ONLY, REPEAT SIDE 1, REPEAT SIDE 2, REPEAT SIDES 1 AND 2.
- Space Requirement: 19" high, 26½" wide, 14" front to back.

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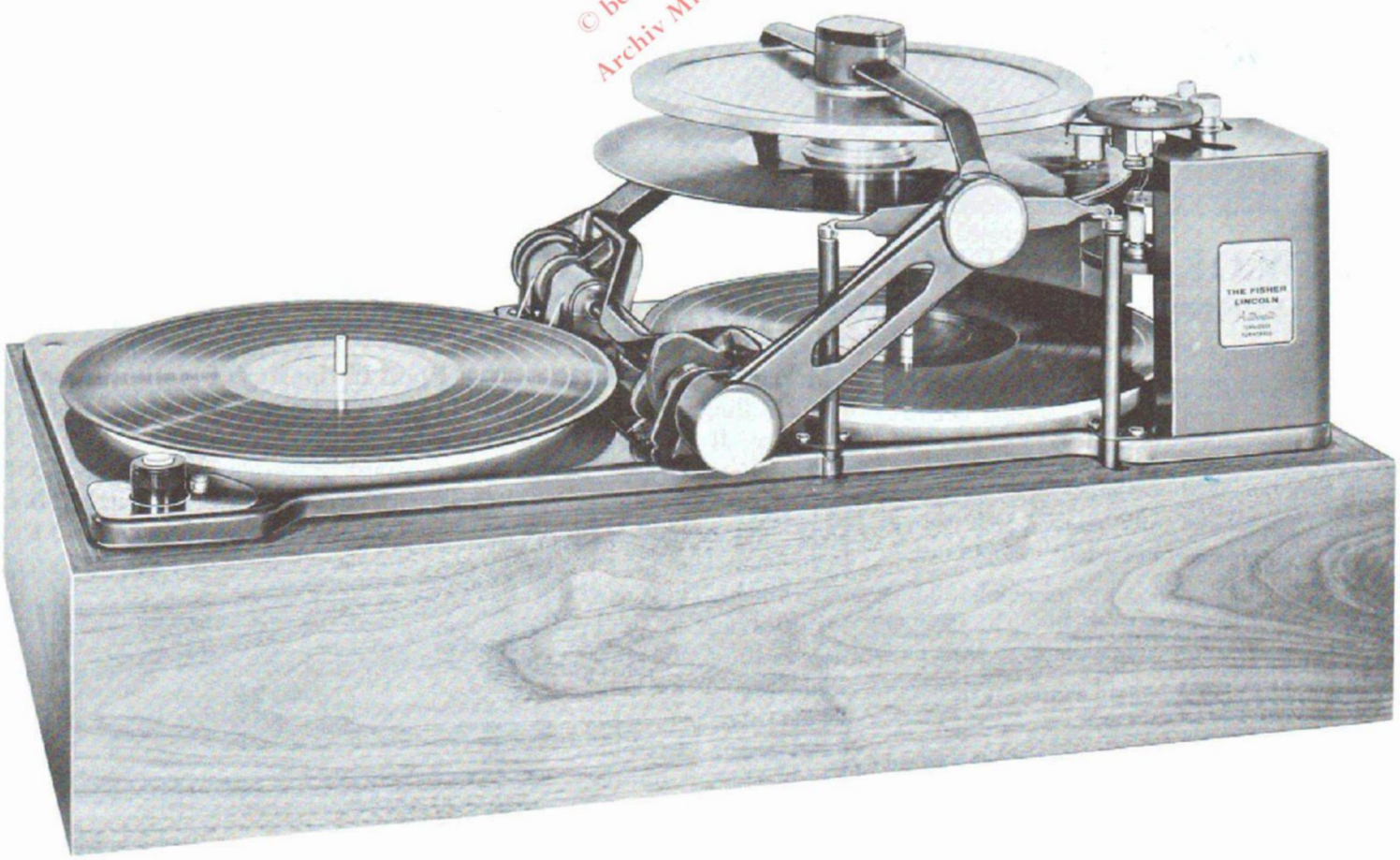
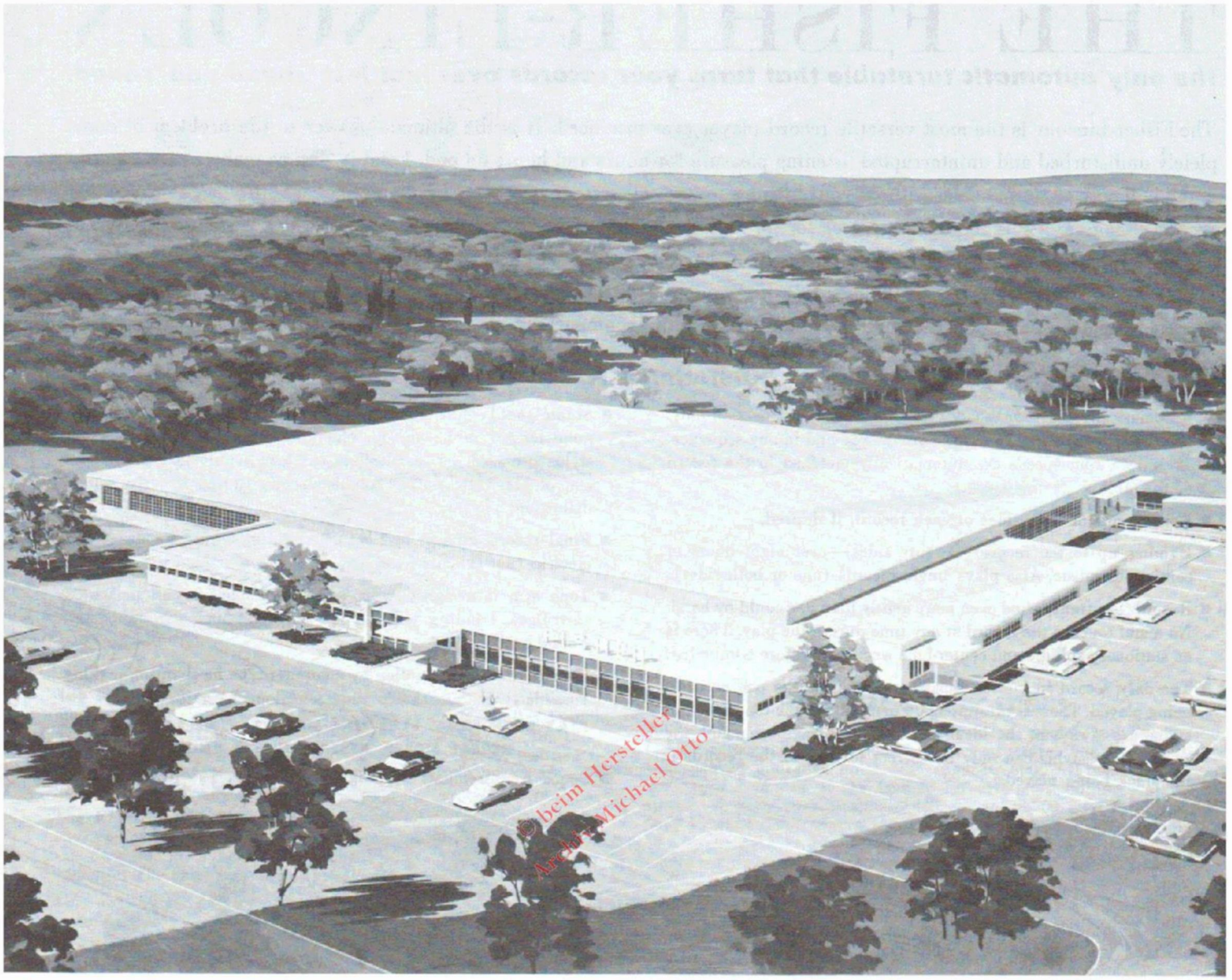
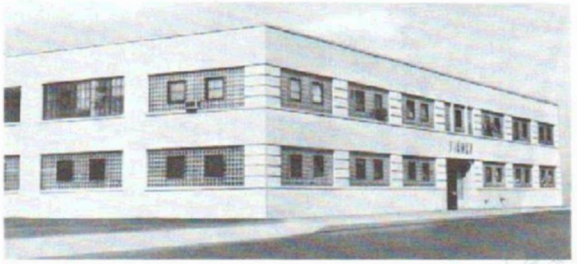
Archiv Michael Ott





VIEW OF THE NEW FISHER RADIO CORPORATION PLANT
SITUATED IN TWENTY-ACRE FISHER PARK • MILROY, PENNSYLVANIA

The Largest, Most Modern New Plant In the High Fidelity Industry. In the rolling hills of Central Pennsylvania, there stands a magnificent new structure. It is Fisher Plant No. 2, located in twenty-acre Fisher Park, Milroy, Pennsylvania. Designed by Gerhard E. Karplus, A.I.A., the 62,000 square-foot structure reflects the latest techniques in industrial building, and contains facilities for the most careful production of high quality stereo equipment. There is no other like it. These new facilities are in addition to those at Fisher Plant No. 1 in Long Island City, N. Y., headquarters for Electronic Production, Administrative Offices, Engineering, Sales & Service.



Fisher Radio Corporation plant in Long Island City • New York

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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 phono-graph 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-cut-off 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 peak power indicator in high fidelity.

1955 First Master Audio Control chassis with five-posi-tion mixing facilities.

1955 First correctly equalized, direct tape-head pream-plifier with self-powered Master Audio Control.

1956 First to use Power Monitor in a home amplifier.

1956 First all-transistorized 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 stereo 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 re-cording audio level indicator.

1960 First complete stereo FM-AM Receiver with 60-watt power amplifier and new 7591 output tubes.

1960 Smithsonian Institution, Washington, D. C., re-reives 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-Stereo-Multiplex 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-alumi-num and fiber cone.

1962 First FM Tuner Kit with separate d'Arsonval meter for tuning and separate cathode ray stereo broad-cast indicator (STEREO BEAM.)

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