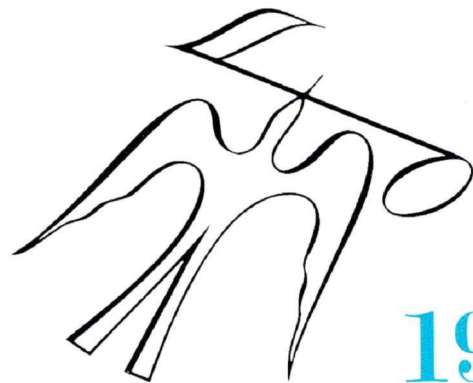


\$1.00

# THE FISHER HANDBOOK

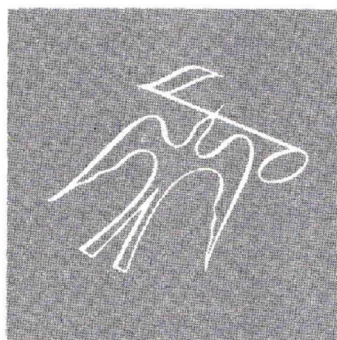


1962

AN AUTHORITATIVE GUIDE TO CUSTOM STEREO



AVERY FISHER, *Founder and President*, Fisher Radio Corporation



## 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 to serve their own needs, 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. He also has 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.)

Today, in the new age of stereo, Fisher components built in 1937 are still in use—and the 1962 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 nearly 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—for it has become an international synonym for high-quality sound reproduction. None of this, however, gives Avery Fisher nearly as much satisfaction as the fact that many of the world'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 its most demanding patron and he is pleased to find himself in authoritative company.

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 other 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*.

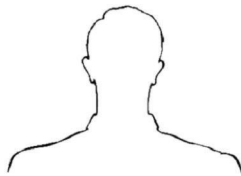
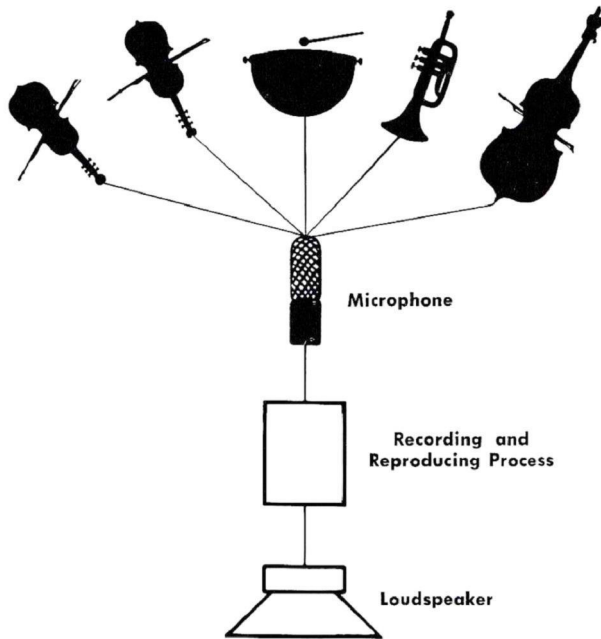
# What is stereo?

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.

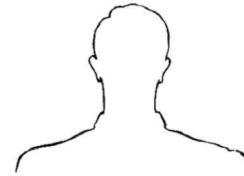
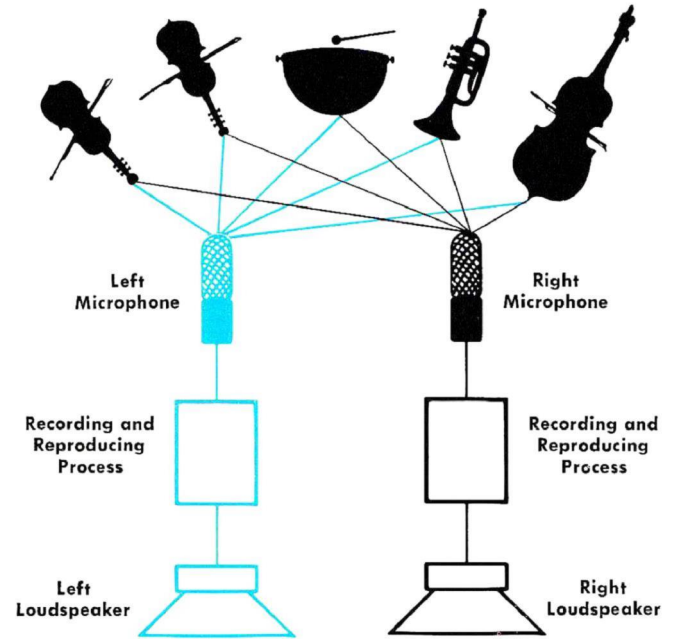
This is a somewhat oversimplified summary of how we hear sounds *in space*, but the important thing to remember is that the entire process is based on *differences* occurring *simultaneously*. Now, there can exist a difference only between two or more things — and that's where all methods of sound reproduction

## MONOPHONIC REPRODUCTION



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.

## STEREOPHONIC REPRODUCTION



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.

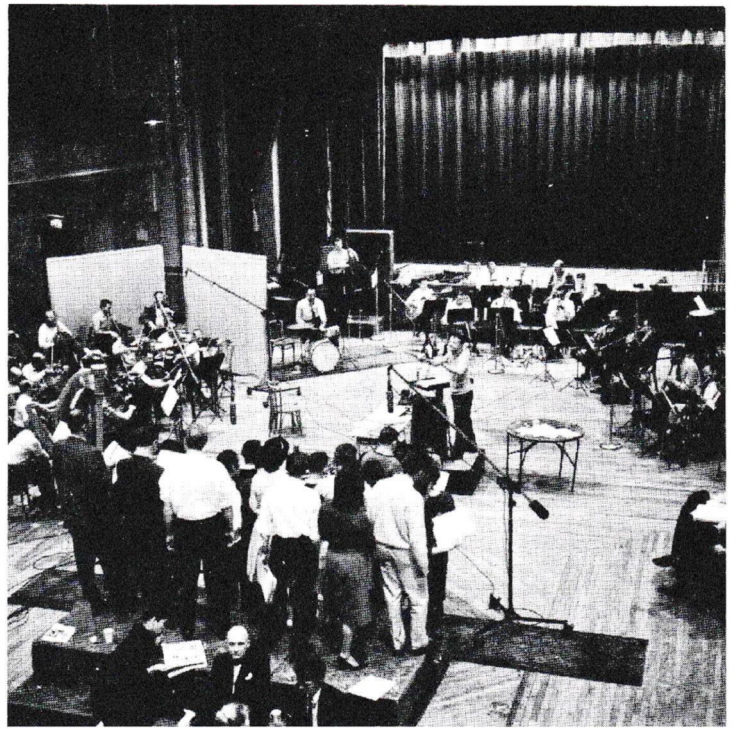
before stereo were inadequate. They gave us only a single pattern of sound: just one spiral pattern of wiggles on a phonograph record, just one magnetic track on a recorded tape, just one optical track on a sound film, just one signal transmitted by a radio station. It did not matter how many microphones 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 precisely 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 were 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 pre-stereo 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?

Until approximately four 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

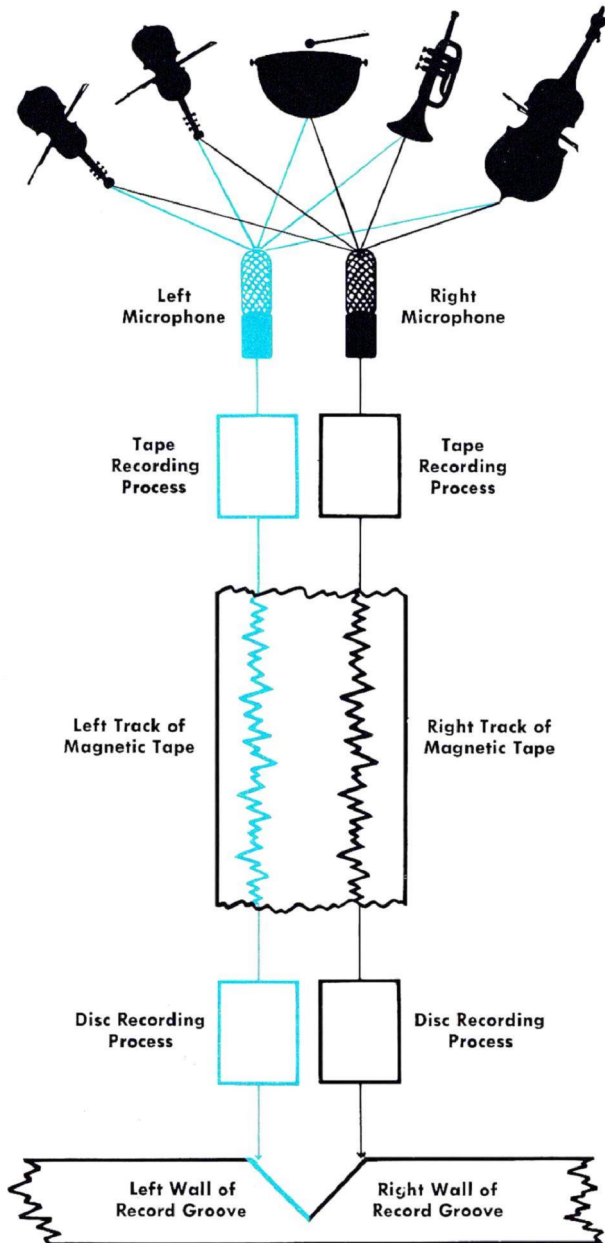
outlets, and they are very close in sound quality to the original master tape. The big problem that remained to be solved was to adapt stereo to the most widely used high-fidelity medium—the phonograph record.

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



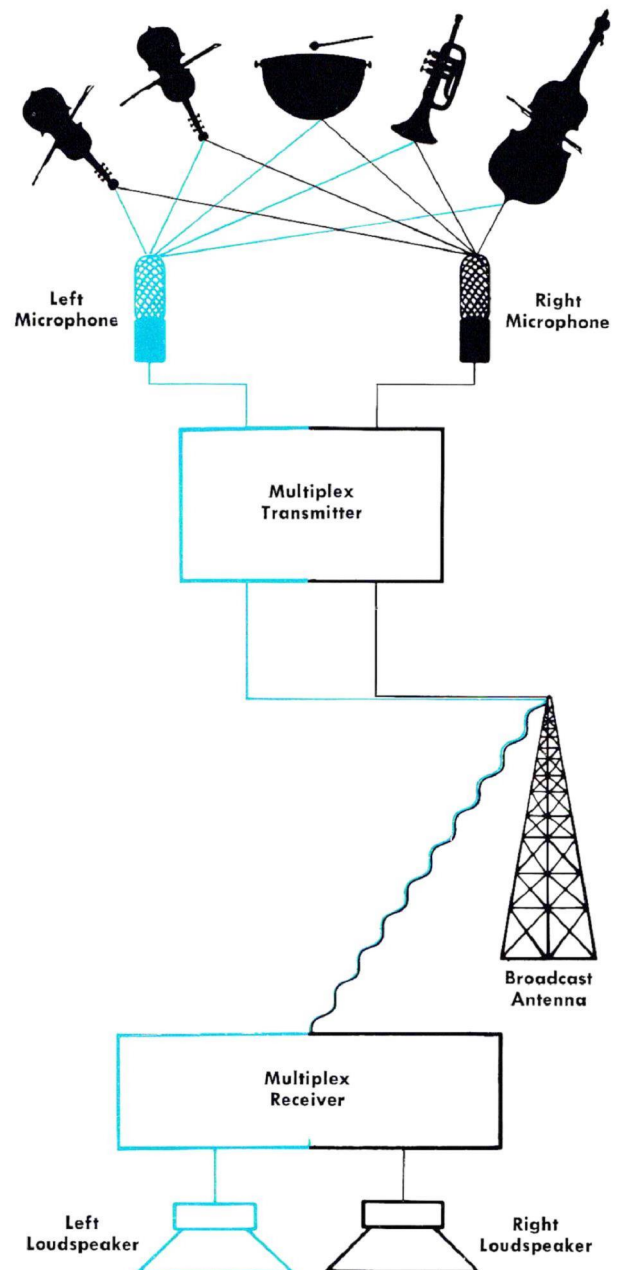
Left-hand and right-hand information are kept separate throughout the recording process, on tape and on disc. The stereo pickups designed for playback of the 90° V-shaped groove have the ability to distinguish between left wall and right wall.

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.

## 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.



# 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, double-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 pre-stereo 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.

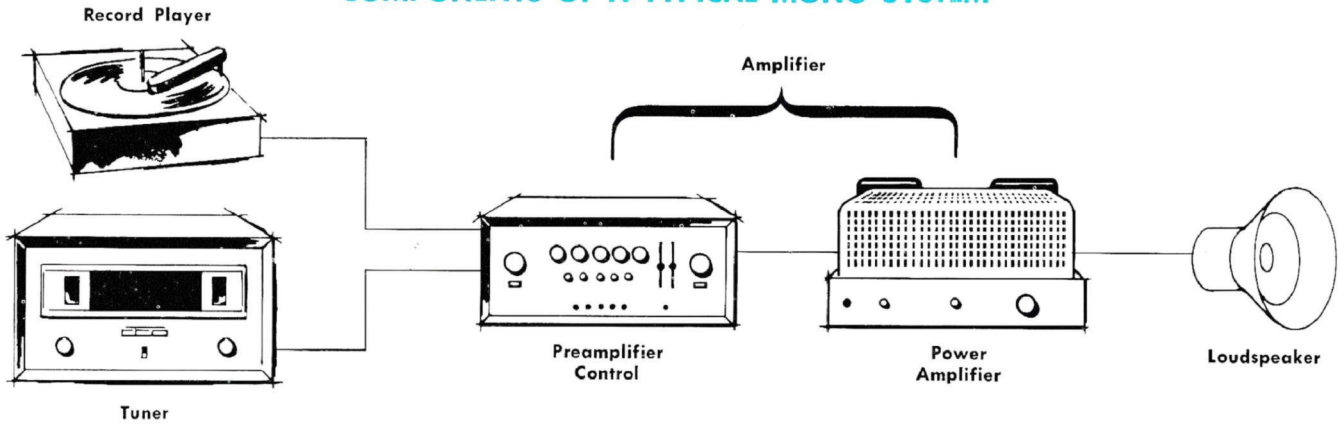
Another function of the Amplifier is to compensate for tonal imbalances (too little bass, too strong high tones, and the like) in the program sources and to make these and other adjustments easily controllable by the listener. This is accomplished by means of various controls and switches, as is the 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.

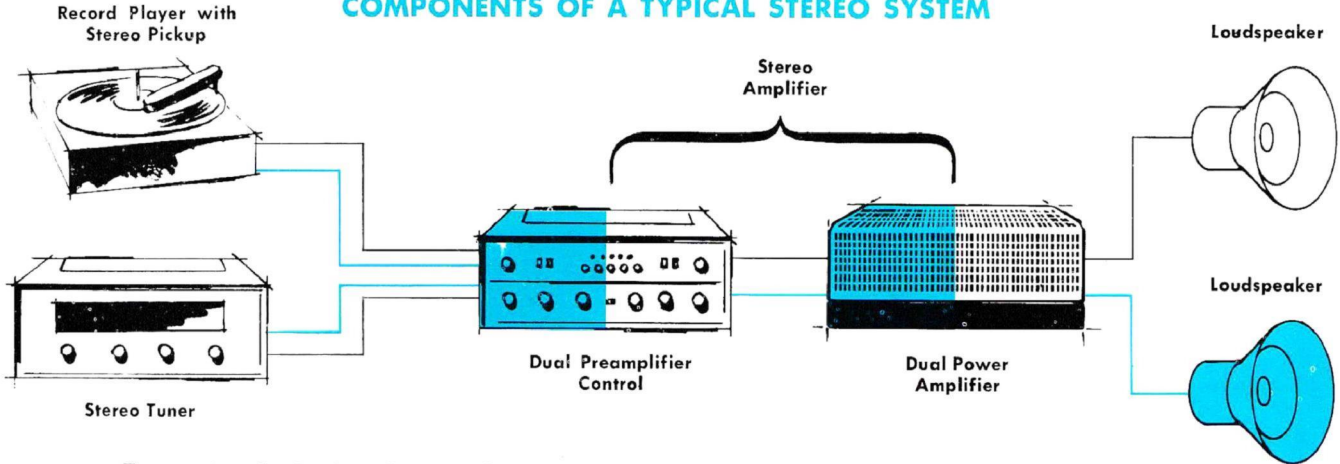
The **RECORD PLAYER** can be either a record changer with a pickup cartridge or a single-play turntable with separately mounted pickup arm and cartridge. The stylus (or, less correctly, ‘needle’) of the cartridge traces the vibrations engraved in the record groove and translates them into tiny electric 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

## COMPONENTS OF A TYPICAL MONO SYSTEM



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.

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.

The output side of the amplifier, where the current has 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, powerful one for the very hard-working low tones; a small and very precise one 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

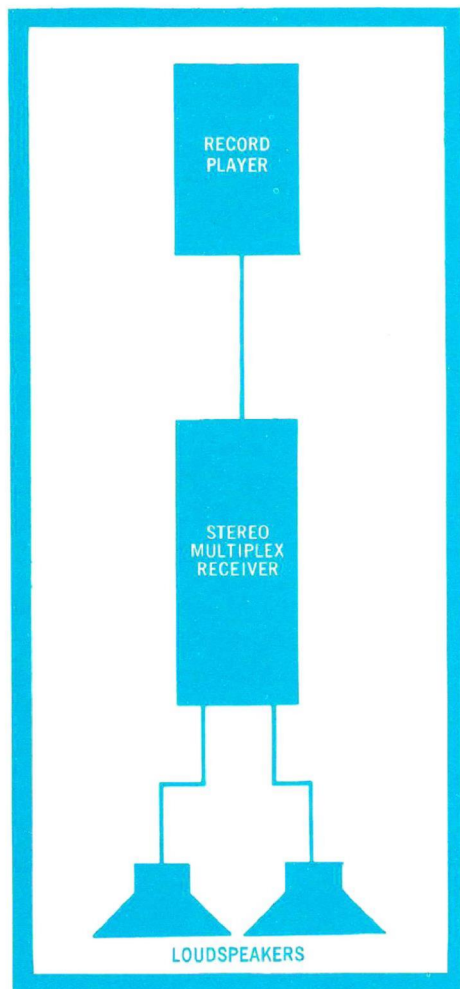
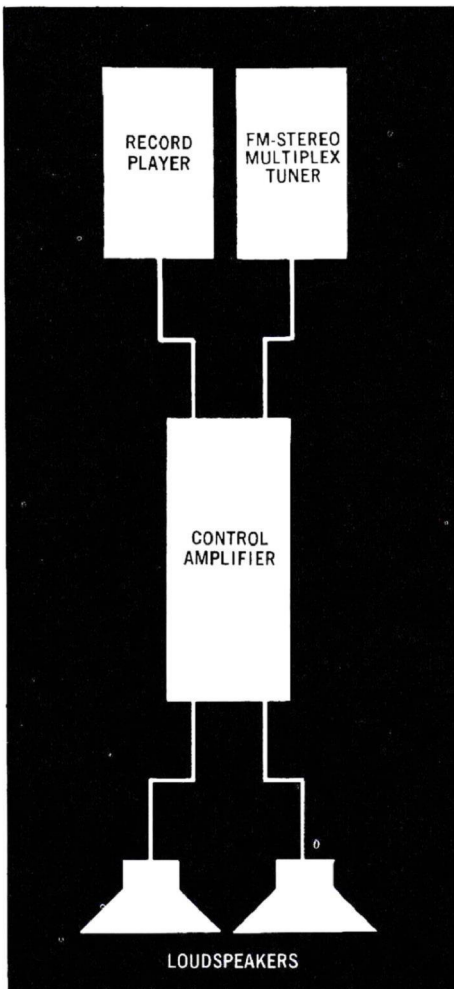
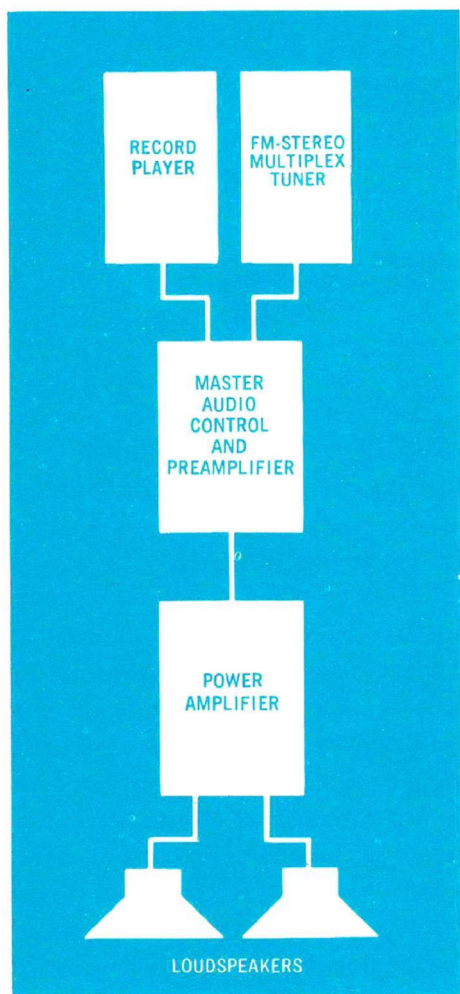
forced into eclipse the monster speaker systems of pre-stereo days; two of the latter are too much for the average home, and the more sophisticated smaller designs of the stereo era do just as well; often better. One should invest as much of the stereo budget as possible in the very best loudspeaker 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.

# THREE BASIC PLANS

## FOR YOUR FISHER CUSTOM STEREO SYSTEM



# It's Easy To Understand Technical Specifications!

The only way to protect your investment in high fidelity is to know what you are buying. That is why we always publish full details on FISHER instruments. These details are your yardstick, revealing just what you are getting when you buy a FISHER component, and how it compares with other products. Here is a simple explanation of the most important terms.

**CAPTURE RATIO** The *lower* the figure, the finer the tuner. This indicates the ability of the tuner to reject undesired stations and interference of all types even though these signals may occur on the *same channel* as the desired station.

**CASCADE** A type of circuit used for extremely low-noise radio-frequency amplification. The maximum advantage of this circuit, however, can be attained only with a high-gain frame-grid tube such as the FISHER Golden Cascade.

**CROSSOVER NETWORK** A circuit that separates low tones from high, feeding them separately to bass and treble speakers, respectively.

**DAMPING FACTOR** A figure obtained by dividing the impedance of a loudspeaker by the internal impedance of the amplifier driving it. Generally speaking, the higher the damping factor the closer control the amplifier has over the motion of the loudspeaker.

**DECIBEL (DB)** A unit of measure to indicate increase or decrease in sound level, voltage or power. A volume change of 3 db is the practical minimum amount discernible to the average ear.

**ENCLOSURE** This is the loudspeaker cabinet. It must be rigidly built and acoustically matched to the loudspeaker units.

**EQUALIZATION** The correction of the imbalances between low and high tones on broadcast or recorded material (record or tape). These imbalances are deliberately introduced by the engineers during the recording process or broadcast for valid technical reasons.

**FEEDBACK** A circuit feature, widely applied, to reduce all types of distortion. The amount used is measured in decibels.

**FREQUENCY RESPONSE** The range of signals, measured in vibrations-per-second, that a system is capable of handling.

**GAIN** An increase in sound or signal level. In audio systems, it is regulated by the volume control.

## HARMONIC DISTORTION

**HUM** Undesired droning sound, consisting of the power-line frequency of 60 cycles and its harmonics, usually caused by insufficient filtering.

**I.F. STAGES AND LIMITERS** With all other factors equal, the more of these there are, the finer the FM tuner. IF (Intermediate Frequency) stages provide the high amplification of the signal needed to make the noise-eliminating limiters function with maximum efficiency.

**IMPEDANCE** The value, expressed in ohms, of alternating current resistance. Output and input impedances of audio components connected to each other must be closely matched.

**INTERMODULATION DISTORTION** Spurious tones created by the interaction of two pure tones.

**LOUDNESS CONTROL** A type of volume control that compensates for the ear's relative insensitivity to low and high tones, particularly evident at low or moderate volume levels.

**MICROTUNE** A FISHER invention, designed to assure precise FM tuning and to take full advantage of wide-band tuner design. MicroTune automatically finds and locks in on the exact center of the desired channel. All errors in tuning — both minor and major in degree — are automatically corrected.

**NOISE** Unwanted, random sound created by improperly functioning equipment.

**PEAK** In voltage or power, the maximum instantaneous amount available.

**POWER OUTPUT** The maximum amount of power the amplifier can deliver.

**REVERBERATION** The spatial effect created by the repetitive reflection of sound from the walls of the room. This element in sound helps convey the apparent size of the studio or concert hall.

**SELECTIVITY** This reflects the ability of a tuner or receiver to bring in a weak station without interference, even in the presence of powerful stations on channels that are adjacent to the one desired. The greater the number of tuned IF circuits, the finer and more selective the tuner.

**SENSITIVITY** The lower the figure, the finer the tuner, and the greater its ability to bring in distant or weak stations.

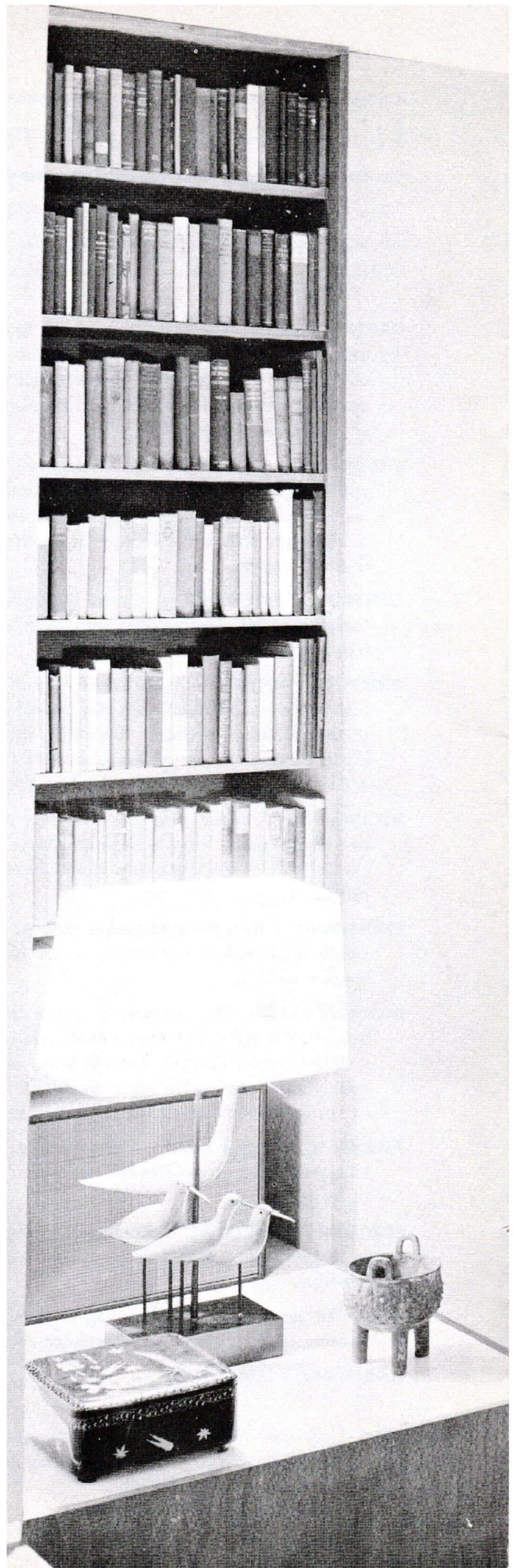
**SEPARATION** In stereo, the degree of isolation between channels. Insufficient separation appears as cross-talk in the signal. The stereo effect depends on the prevention of sound leakage from one channel to the other.

**Y**OU 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. Break-fronts, 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-four 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.

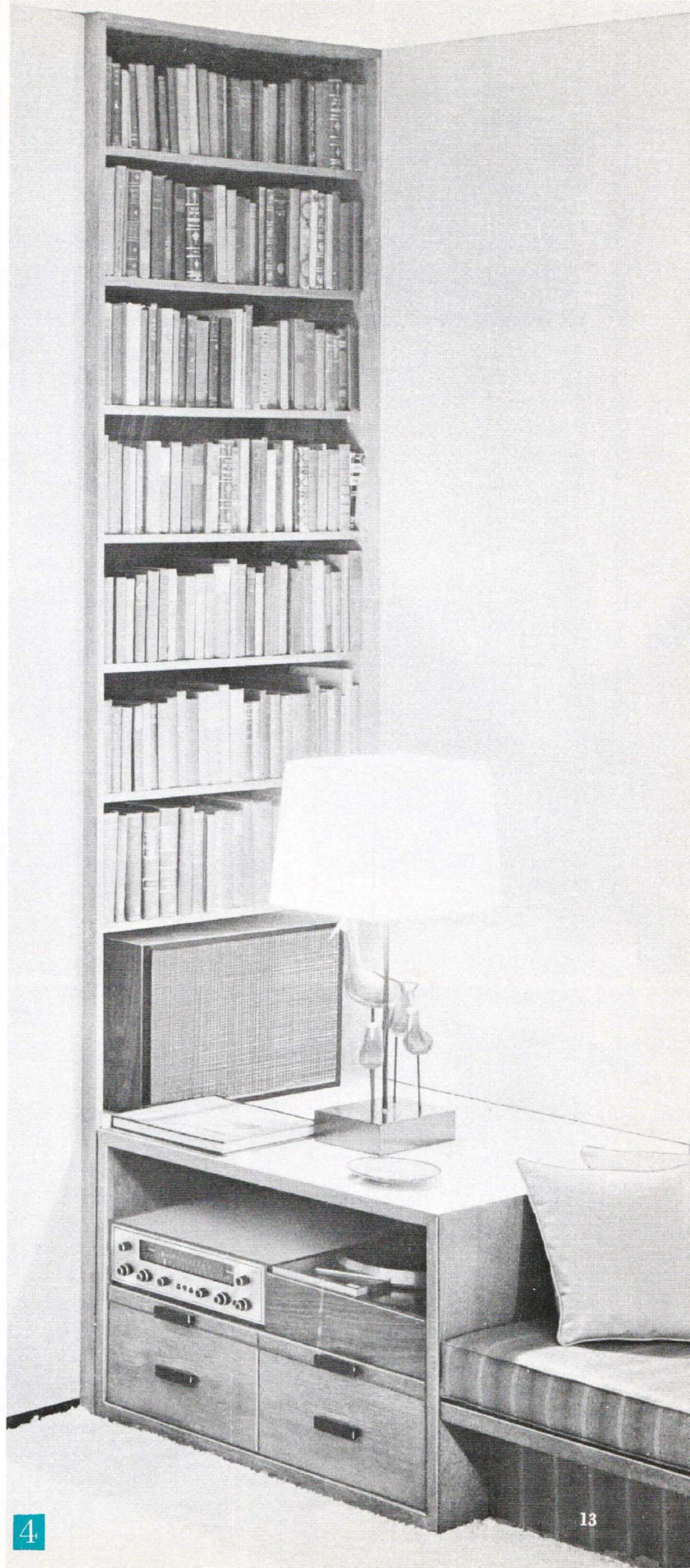
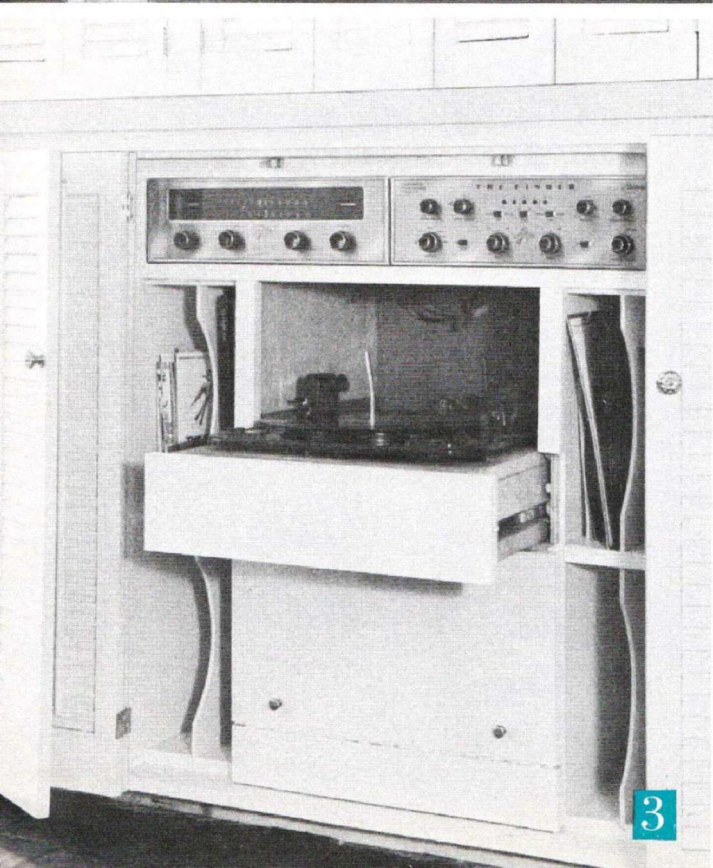
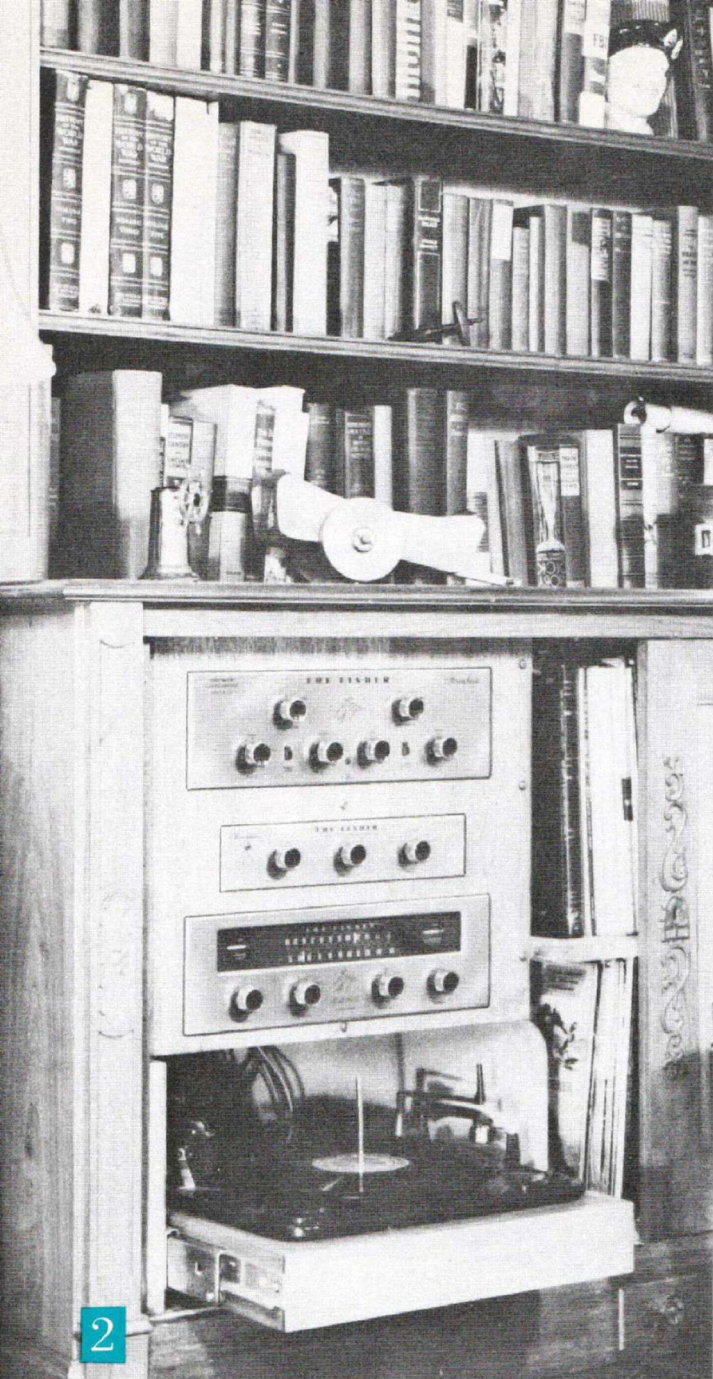
**1** STEREO PHONOGRAPH INSTALLATION IN BOOKCASE, COMPRISING FISHER CONTROL-AMPLIFIER AND TWO FISHER BOOKSHELF XP-1 SPEAKER SYSTEMS (NOT SHOWN IN PHOTOGRAPH).

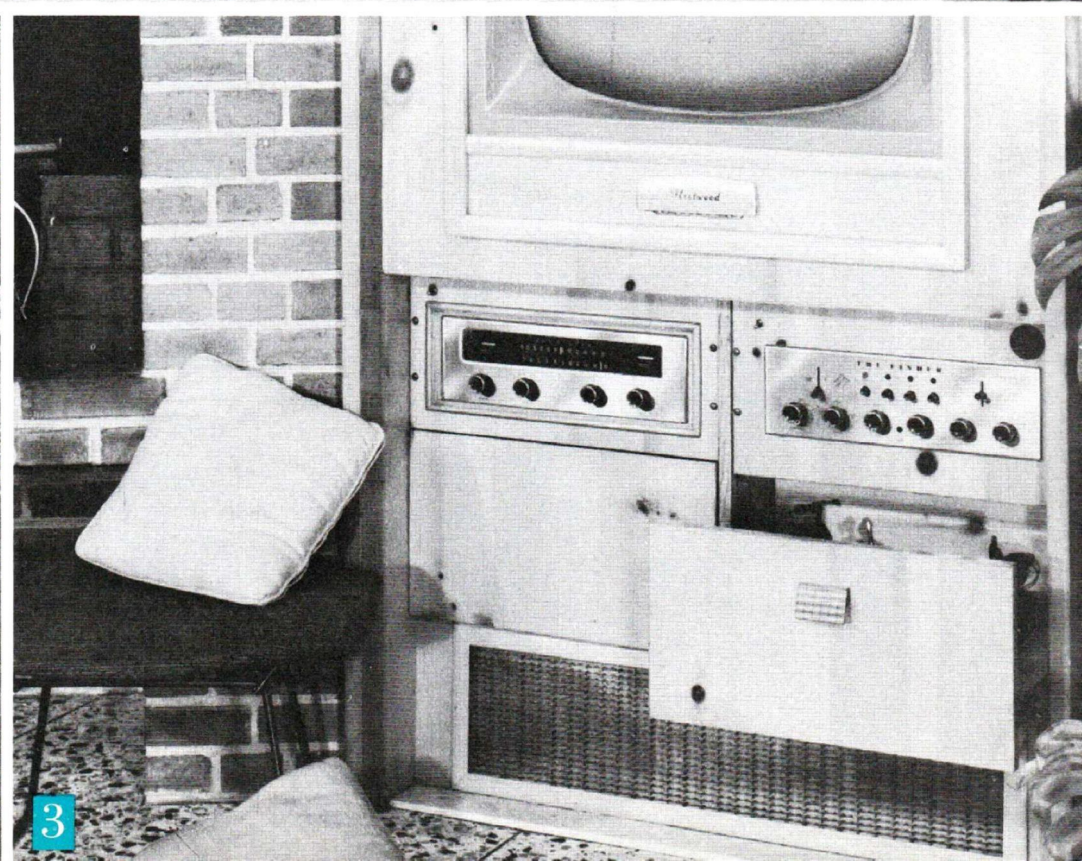
**2** FISHER TUNER WITH STEREO CONTROL-AMPLIFIERS AND AUTOMATIC RECORD CHANGER, INSTALLED IN BOOKCASE CUPBOARD.

**3** FISHER TUNER, FISHER STEREO CONTROL-AMPLIFIER AND AUTOMATIC RECORD CHANGER, BEAUTIFULLY CONCEALED.

**4** HOW A FISHER RECEIVER, INCORPORATING TUNERS, CONTROLS AND STEREO AMPLIFIERS ON ONE COMPACT CHASSIS, CAN BE EASILY INSTALLED IN AN END TABLE. *Courtesy, LIVING*







# How to keep components

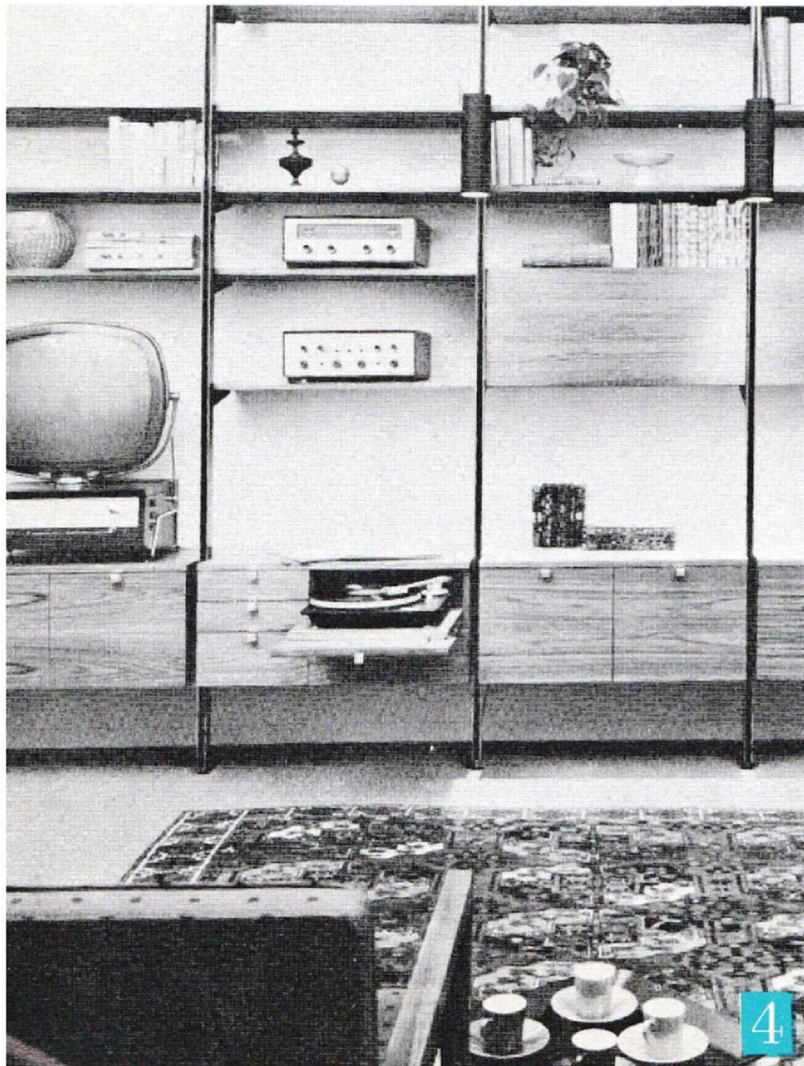
WHEN you plan your stereo installation, always remember two basic requirements:

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 4 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.

# in their place



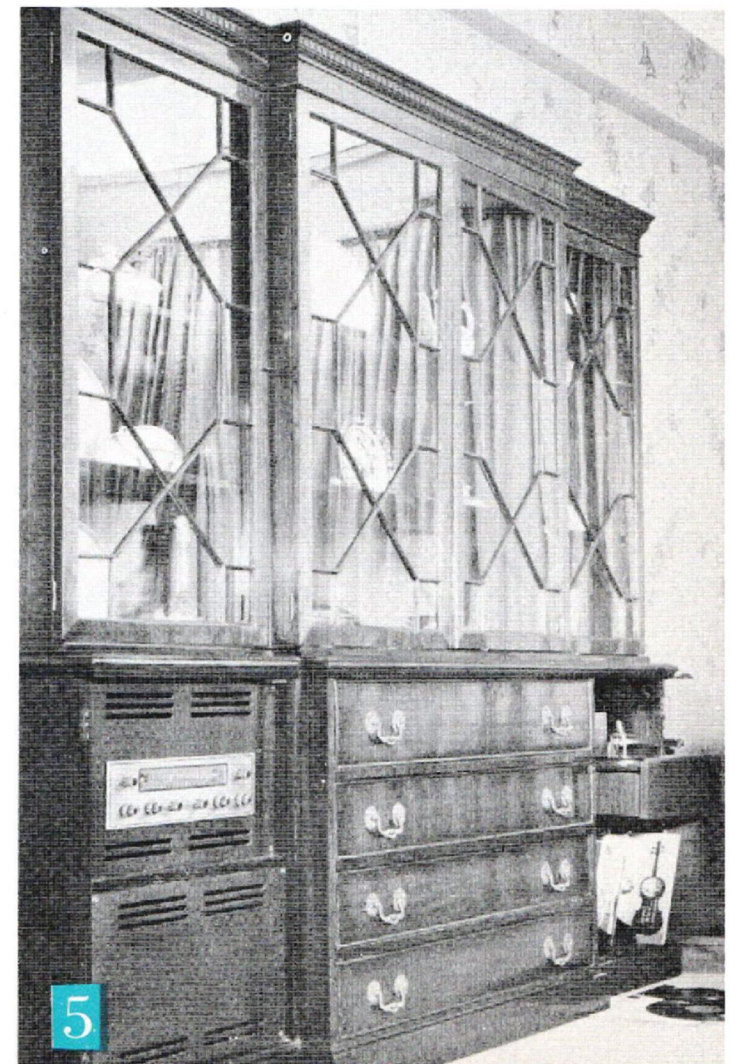
**1** MAGNIFICENT STEREO INSTALLATION IN BAR CABINET, UTILIZING FISHER TUNER AND SEPARATE CONTROL-AMPLIFIER. USES ADDITIONAL SIDE-SPEAKERS.

**2** INGENIOUS USE OF A CORNER CLOSET, FOR INSTALLATION OF FISHER FM-AM STEREO RECEIVER, AND AUTOMATIC AND MANUAL RECORD PLAYERS.

**3** FISHER TUNER, FISHER STEREO MASTER AUDIO CONTROL AND STEREO AMPLIFIER, WITH TELEVISION, IN BEAUTIFUL FIRE-SIDE PLAYROOM INSTALLATION.

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

**5** STEREO INSTALLATION IN A BREAK-FRONT CABINET, UTILIZING A FISHER TUNER WITH CONTROLS. A PAIR OF FISHER XP-1 SPEAKER SYSTEMS DO NOT APPEAR IN THE PHOTO.



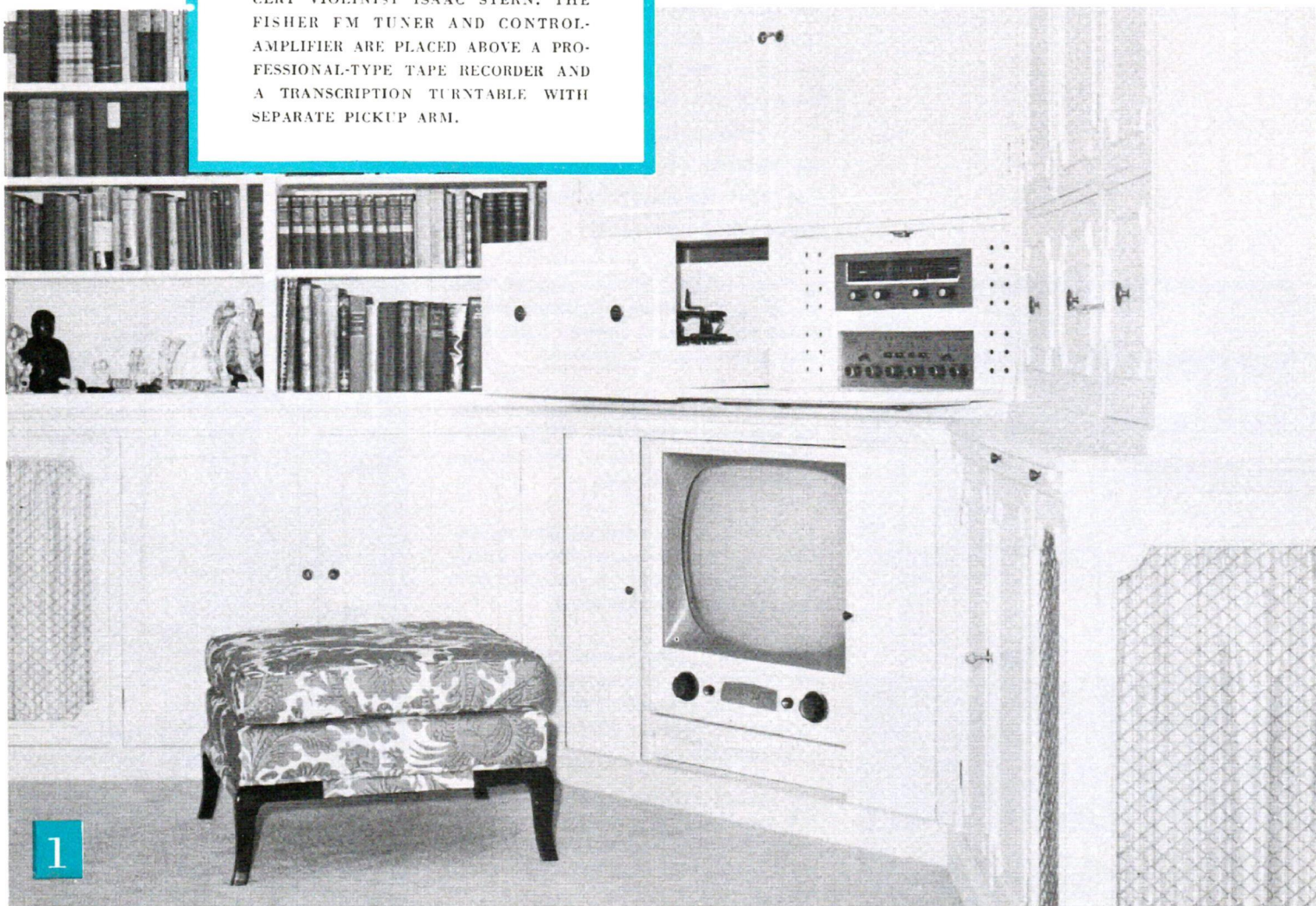
# Special Problems... Special Solutions!

**1** UNUSUAL WALL INSTALLATION INCORPORATING FISHER TUNER AND MASTER AUDIO CONTROL, PLUS RECORD CHANGER, ALL AT CONVENIENT HEIGHT ABOVE CUSTOM TELEVISION CHASSIS. FISHER POWER AMPLIFIER AND LOUD-SPEAKERS ARE HIDDEN.

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

**3** FISHER FM TUNER, STEREO CONTROL-AMPLIFIER AND AUTOMATIC RECORD CHANGER IN SELF-CONTAINED CABINET FOR CLOSET INSTALLATION.

**4** STUDIO-QUALITY INSTALLATION IN THE APARTMENT OF FAMED CONCERT VIOLINIST ISAAC STERN. THE FISHER FM TUNER AND CONTROL-AMPLIFIER ARE PLACED ABOVE A PROFESSIONAL-TYPE TAPE RECORDER AND A TRANSCRIPTION TURNTABLE WITH SEPARATE PICKUP ARM.



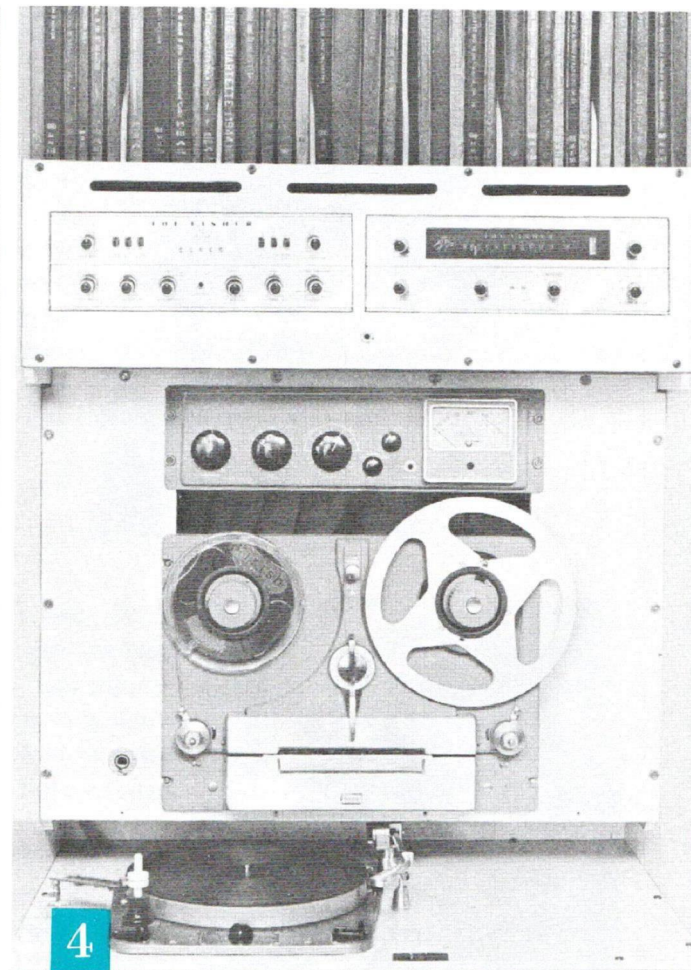


## EXPERT GUIDANCE AVAILABLE ON CUSTOM STEREO INSTALLATIONS

Do you need help in planning the installation of your stereo system? If so, the services of our Mr. Richard Hamilton are available to you without cost.

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.





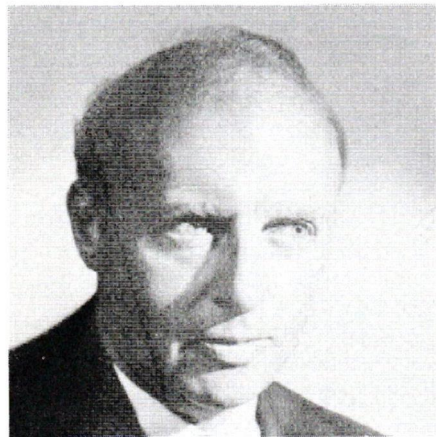
■ “I have just purchased my third FISHER, and it is giving me the same fabulously true reproduction of my phonograph records, and in the reception of high fidelity broadcasts, as do the others. It is a constant source of enjoyment and relaxation to me.”

—ISAAC STERN,  
*Concert Violinist*

## From the Distinguished Roster of FISHER Owners

■ “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*



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

—ANDRE KOSTELANETZ,  
*Conductor*



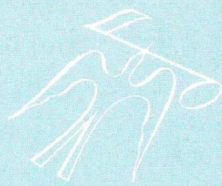
■ “I was thrilled and fascinated by the life-like reproduction, not only of my own recordings but those of other artists with whom I have sung at the opera. Many subtle shadings and nuances that I had not realized were in the recordings were fully and beautifully expressed.”

—VICTORIA DE LOS ANGELES,  
*Soprano, The Metropolitan Opera Company*



■ “My new FISHER instrument 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*



# INTRODUCING THE FISHER 1962 STEREO COMPONENTS

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.

# The professional approach to amplifiers

**A**N amplifier has two basic functions—to boost the signal to a strength sufficient to drive the loudspeaker and to control the signal with respect to volume, frequency response and other characteristics. When these two basic functions are completely separated, individual units can be designed on separate chassis to perform one function only, with the ultimate degree of perfection and flexibility, without regard to size, space, layout of parts, or any other consideration. The world's finest professional amplification systems have always been designed on this basis, and that is the design philosophy behind the three FISHER components described here.



## THE FISHER 400-CX STEREO MASTER AUDIO CONTROL

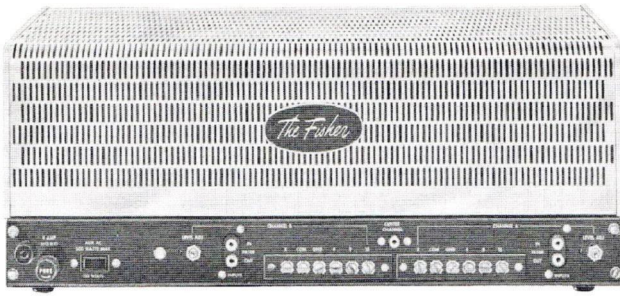
Designed from the outset to meet every possible audio control requirement, the 400-CX has twenty-eight controls and eighteen inputs, all so simply arranged that even a novice can operate them easily. The exclusive full-range stereo dimension control widens or narrows the apparent acoustic distance between stereo speakers. This invention compensates for recordings with insufficient channel separation and for speakers placed too close together or too far apart. Jewel light system, visible from any listening position, indicates exact setting of mode selector switch. Center channel output is provided for the connection of an additional amplifier and speaker to improve stereo sound distribution. In addition, a center channel output, unaffected by volume or tone controls, is included. Special jacks allow for quick connection of the FISHER RK-1 Remote Control and the FISHER K-10 Dynamic Spacexpander. A new tape switching system permits the utilization of *all* audio controls during tape playback.

### OUTSTANDING FEATURES

**CONTROLS:** Stereo Dimension, Master Volume (On-Off), Eight-Position Low-Level Equalizer, Stereo Balance, Dual Bass and Treble, Mono-Stereo Mode Selector, Center-Speaker Volume. ■ **FIVE-POSITION PUSH BUTTON PROGRAM SELECTOR.** ■ **SWITCHES:** Low Filter, High Filter, Tape Monitor, Loudness Contour, Phase Reverse. **REAR APRON,** 24 Input and Output Jacks, plus provision for Remote Control and Spacexpander, outputs for Center-Channel Amplifier, five AC outlets. ■ Walnut and Mahogany cabinets, Models 10-UW, 10-UM. Metal Cabinet in simulated leather, Model MC-2.

### TECHNICAL SPECIFICATIONS

■ **FREQUENCY RESPONSE:** 10-25,000 cps, within 1 db ■ **RATED OUTPUT:** 2.5 volts RMS. ■ **HARMONIC DISTORTION:** 0.04%. ■ **HUM AND NOISE:** 80 db below rated output. ■ **CHANNEL SEPARATION:** 67 db at 1 Kc. ■ **SENSITIVITY (Low Level Inputs):** Mag 1 & 2, 1.5 Millivolts; Tape Head, 3.0 Millivolts; Microphone, 1.8 Millivolts. ■ **SENSITIVITY (High Level Inputs):** Tuner 0.2 Volts for 2.5 Volts output; Tape 1.0 Volts for 2.5 Volts output. ■ **CHASSIS DIMENSIONS:** 15 $\frac{1}{8}$ " wide, 4 $\frac{3}{16}$ " high, 12" deep. ■ **WEIGHT:** 18 pounds.



## THE FISHER SA-300-B

### 90-WATT STEREO POWER AMPLIFIER

Consisting of two fully identical basic amplifier channels for both stereophonic or monophonic reproduction, the SA-300-B offers true laboratory quality at a mere fraction of the usual cost of equipment of this calibre. You can depend on it for distortion-free audio power at *all* listening levels. Hum and noise content is less than 1/1000th of 1% of full rated output! A center channel output is included for connection to a third amplifier and loudspeaker system to fill the center of the stereophonic sound pattern. When using low-efficiency, high-compliance speaker systems, the high power of the SA-300-B is an absolute prerequisite for obtaining professional sound reproduction at both ends of the audible spectrum. Moreover, with the SA-300-B you will find that the choice of speaker enclosures is less critical, since you can obtain the exact damping factor required for whatever speaker system you choose.

#### OUTSTANDING FEATURES AND SPECIFICATIONS

- Power Rating: 90 watts music power (IHFM standard) ; 45 watts per channel.
- Two input jacks in each channel. One is of the controlled frequency-type, for electrostatic speakers.
- Center-Channel output.
- Frequency Response: Uniform, within ½ db, over entire audible range, 20-20,000 cycles.
- Only 0.8 volts input required at 1,000 cycles for rated output in each channel.
- Hum and Noise: 100 db below rated output.
- Harmonic Distortion: 0.5% at rated output.
- Speaker Connections: 4, 8 and 16 ohm impedances, plus terminals for adding a resistor to match the recommended speaker damping factors.
- 10 tubes.
- Dimensions: 16¾" wide, 7¼" deep, 6½" high.
- Weight: 32 pounds.



## THE FISHER SA-100

### 50-WATT STEREO POWER AMPLIFIER

The SA-100 is a truly remarkable instrument. It has been equipped with features found only in the costliest of dual-channel amplifiers. With the SA-100, for example, you are free to choose any speaker system you desire. Its advanced circuitry guarantees optimum results with high *and* low-efficiency speakers. Equipped with 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. There are controls for two-speaker monophonic operation, input level, bias and other adjustments. Exemplifying the great attention paid even to the smallest detail, in true FISHER tradition, the SA-100 even has external test point terminals! In its class, it is without an equal.

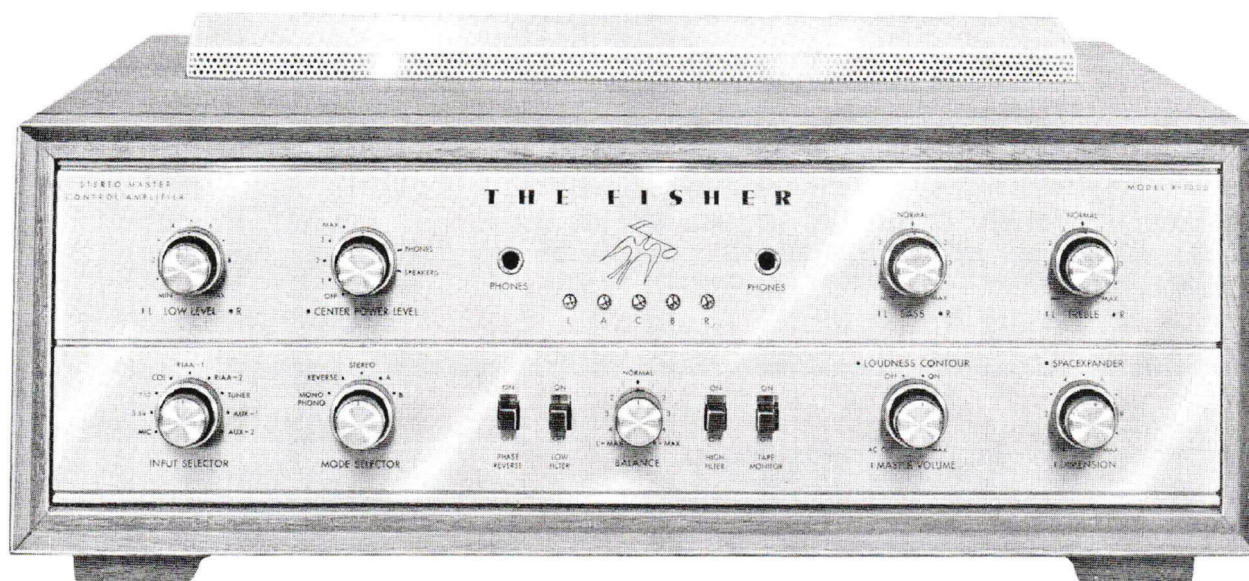
#### OUTSTANDING FEATURES AND SPECIFICATIONS

- Power Rating: 50 Watts music power (IHFM Standard) ; 25 Watts per channel.
- Frequency Response: 20 to 20,000 cps, +0 db, -½ db.
- Sensitivity: 1.0 volts for full rated output.
- Harmonic Distortion: 0.1% at 20 watts music power; only 0.8% at 25 watts music power.
- Intermodulation Distortion: 0.3% at rated power.
- Hum and Noise: 90 db below rated output.
- Speaker Outputs: 4, 8 and 16 ohms for each channel.
- Speaker damping factor has unlimited range and will match any speaker.
- Center-channel output for connection to third amplifier.
- Nine controls.
- Mono-Stereo switch.
- Input level adjustments.
- Phase Inverter Balance.
- Dimensions: 6¾" high, 12¾" wide, 7½" deep.
- Weight: 24½ pounds.

# Power and control ...all in one!

SINGLE-CHASSIS INTEGRATED CONTROL AMPLIFIERS

Combining the power amplifier section and the 'front-end' audio controls on one chassis not only saves space but also avoids costly duplication of parts. When executed with the touch of genius that distinguishes FISHER engineering, this design approach gives the purchaser the most performance for his investment. The most advanced FISHER Control Amplifiers are in the class of perfectionist equipment formerly available only as two-chassis systems; the less ambitious models are merely the world's finest for their size and price.



## THE FISHER X-1000

110-WATT STEREO MASTER CONTROL AMPLIFIER

**T**HE 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. It incorporates a 110-watt 'no-compromise' stereo power amplifier *on the same chassis* with an ultrasophisticated, professional-quality preamplifier and control system. Equipment of this caliber has previously been available only in two separate units, occupying considerably more space and significantly higher in cost. A special feature is the exclusive FISHER tape monitoring system, which permits the monitoring of tapes and the use of all tone controls and switches during playback *without changing cable connections*. The center channel output for a third speaker can be switched by a front panel control. An additional center channel output is provided for remote operation. Precise blending of the two stereo channels is accomplished by the Stereo Dimension Control. A special control permits operation of the FISHER (K-10 Spacexpander) reverberation system from the front panel. A rear-panel input is provided for the RK-1 remote control and personal listening is made possible through an earphone jack.

**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, Spacexpander and Stereo Dimension, High and Low Filter Switches, Phase Reverse and Tape Monitor Switches. Five jewel indicator lights provide a visual indication of the Mode Selector Switch position and light in different sequences depending on the type of circuit in operation.

**TECHNICAL SPECIFICATIONS** Music Power Output 110 Watts (IHF Standard, both channels.) Harmonic distortion (at rated output) 0.5%. Hum and noise 95 db below rated output. Frequency response 20-20,000 cps, within ½ db. SENSITIVITY: low level inputs 3.3 mv; high level inputs 230 mv. High filter 16 db/octave above 5 Kc. Low filter 12 db/octave below 50 cps. DIMENSIONS: 16<sup>15</sup>/<sub>16</sub>" wide, 4<sup>3</sup>/<sub>16</sub>" high, 13<sup>3</sup>/<sub>4</sub>" deep. WEIGHT: 44 pounds. Architectural brass-finish control panel. Walnut Cabinet (Model 20-UWX), Metal Cabinet in simulated leather (Model TA-10X.)

## THE FISHER X-202-B 80-WATT STEREO MASTER CONTROL AMPLIFIER

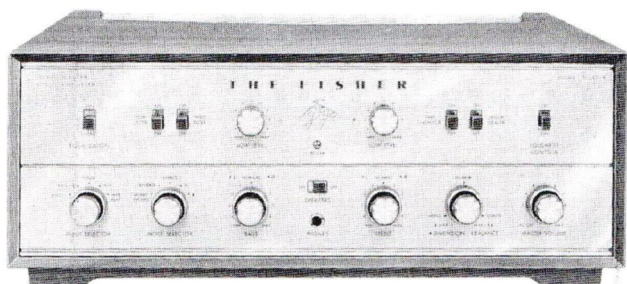


The X-202-B is the combination of a remarkably flexible Master Audio Control, incorporating all the features normally found on the most elaborate separate control units, plus a high-powered, dual-channel amplifier. The exclusive FISHER internal tape switching system permits monitoring followed by the immediate use of all controls and switches during tape playback—*without changing cable connections*. A special jack for the FISHER K-10 Space Expander is provided so that reverberation can be added to all program sources. The center channel loudspeaker output will provide drive for a third speaker *without the addition of an extra amplifier*. Front panel earphone jack. Connection for Remote Control, Model RK-1.

**OUTSTANDING FEATURES** CONTROLS: Stereo Dimension, Balance, Dual Bass and Treble, Center Speaker Switch, Five-Position Mode Selector, Nine-Position Program Selector (Mic, 3 $\frac{3}{4}$ , 7 $\frac{1}{2}$ , Col, R1AA-1, R1AA-2, Tuner, Aux, Tape Play), High and Low Filter Switches, Loudness Contour. Architectural brass-finish control panel. Wood cabinets available in Walnut (Model 10-UW), Mahogany (Model 10-UM), Metal Cabinet in simulated leather, Model MC-2.

**TECHNICAL SPECIFICATIONS** Music Power Output (IHFM Standard, both channels) 80 Watts. Harmonic distortion (at rated output) 0.5%. Hum and noise 90 db below rated output. Frequency response 20-20,000 cps, within 1 db. Sensitivity: low level inputs 3.5 mv; high level inputs 280 mv. High filter 16 db/octave above 5 Kc. Low filter 12 db/octave below 50 cps. 12 tubes, 4 diodes. DIMENSIONS: 15 $\frac{1}{8}$ " wide, 4 $\frac{13}{16}$ " high, 12 $\frac{1}{2}$ " deep. WEIGHT: 30 pounds.

## THE FISHER X-101-B 56-WATT STEREO MASTER CONTROL AMPLIFIER



The X-101-B is easily the most powerful and versatile Master Control Amplifier in its range. It has ample reserve power to drive even the most inefficient of speaker systems. With the X-101-B's center channel power output you can enjoy the special pleasure of a center-channel speaker system *without* the added cost of an additional amplifier. The exclusive tape-switching circuit permits full use of all audio controls and switches during playback after monitoring—*without changing cable connections*. Input and output facilities for the FISHER K-10 Space Expander are located *before* the tape recorder output, so that all types of programs may have reverberation added. Earphone jack and low level input controls on front panel.

**OUTSTANDING FEATURES** CONTROLS: Stereo Dimension, Balance, Dual Bass and Treble, Center Channel Switch, Five Position Mode Selector, Five-Position Program Selector (Mag-1, Mag-2, Tuner, Aux, Tape Play), High and Low Filter Switches, Loudness Contour. Architectural brass-finish control panel. Wood cabinets available in Walnut (Model 10-UW), Mahogany (Model 10-UM), Metal Cabinet in simulated leather, Model MC-2.

**TECHNICAL SPECIFICATIONS** Music Power Output (IHFM Standard, both channels) 56 watts. Harmonic Distortion (at rated output) 0.5%. Hum and noise 90 db below rated output. Frequency response 20-20,000 cps, within 1 db. SENSITIVITY: low level inputs, 3.5 mv; high level inputs, 300 mv. High filter 12 db/octave above 5 Kc. Low filter 12 db/octave below 50 cps. 11 tubes. DIMENSIONS: 15 $\frac{1}{8}$ " wide, 4 $\frac{13}{16}$ " high, 11 $\frac{7}{8}$ " deep. WEIGHT: 24 pounds.

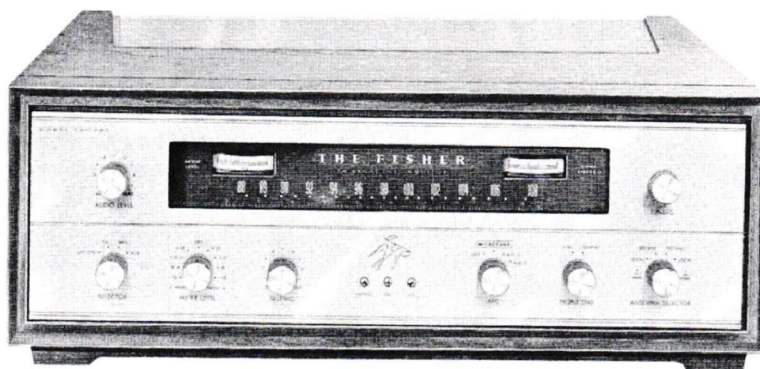
## THE FISHER X-100 36-WATT STEREO MASTER CONTROL AMPLIFIER



The FISHER X-100 provides maximum circuit flexibility with simple-to-operate controls. Maintaining the highest quality standards for which FISHER is famous, it still remains within the moderate price range. This has been achieved on a superbly engineered chassis which combines a stereophonic preamplifier and a dual-channel 36-watt power amplifier. The front panel has sixteen controls and switches to permit the widest flexibility in either monophonic or stereophonic operation. A third amplifier and loudspeaker may be connected to the switch-controlled center channel. Low level phono and tape controls on front panel, for convenience of use.

**OUTSTANDING FEATURES** CONTROLS: Balance, Dual Bass and Treble, Five-Position Mode Selector, Five-Position Input Selector including two positions for magnetic cartridges, High and Low Filter Switches and Loudness Contour. Architectural brass-finish control panel. Wood Cabinets are available in Walnut (Model 10-UW), Mahogany (Model 10-UM.) Metal Cabinet in simulated leather, Model MC-2.

**TECHNICAL SPECIFICATIONS** Music Power Output (IHFM Standard, both channels) 36 Watts. Harmonic distortion (at rated output) 0.5%. Hum and noise 90 db below rated output. Frequency Response 20-20,000 cps, within 1 db. Sensitivity (low level inputs) 3.5 mv; (high level inputs) 180 mv. High filter 12 db/octave above 5 Kc. Low filter 12 db/octave below 50 cps. 11 tubes. DIMENSIONS: 15 $\frac{1}{8}$ " wide, 4 $\frac{13}{16}$ " high, 11 $\frac{7}{8}$ " deep. WEIGHT: 22 pounds.



## THE FISHER FM-1000

### FM-STEREO-MULTIPLEX WIDE-BAND TUNER

**T**HE new FM-1000 represents the sum total of FISHER FM engineering knowledge and experience. It is strictly for the audio connoisseur seeking the absolute ultimate in FM-Stereo tuners. The tunable front end, incorporating 4 tuned circuits and 2 Nuvistor tubes, achieves what appears to be the present world's record in usable sensitivity. A total of 6 IF stages, 5 wide-band limiters and an extremely wide-band ratio detector add up to the most sophisticated FM circuitry available today, with unprecedented image and spurious response rejection. Audio distortion is as low as in the finest existing preamplifiers. The greatest possible convenience in FM Stereo reception is assured by the exclusive STEREO BEACON, the ingenious FISHER invention that automatically lights an indicator when the station received is broadcasting in Multiplex and at the same time automatically switches the tuner from mono to Stereo Multiplex operation.

### OUTSTANDING FEATURES AND TECHNICAL SPECIFICATIONS

- Stereo Beacon. ■ Separate Audio Level VU Meter. ■ RF Signal Strength Meter. ■ Exclusive IF muting circuit for stereo as well as mono. ■ CONTROLS: Station Selector with Automatic Micro-Tune AFC, Audio Level, Power On-Off, Mode Selector, (Mono, Stereo, Stereo Filter, Aux) Calibrated Audio Level Meter Range Control, Variable Muting, AFC Mode Selector, Front-End Circuit Selector (crystal and tuneable.) ■ Three jewel lights: AFC, Muting, Stereo Beacon. ■ Architectural brass-finished control panel.
- Chassis and Rear Panel Features: ■ Four output jacks. ■ Provision for adding crystal control front-end and two 600-ohm output transformers. Wood Cabinet available in Walnut (Model 20-UW.) Metal Cabinet in simulated leather. (Model TA-10.) ■ Frequency Response: 20-15,000 cps (after de-emphasis.) ■ Sensitivity (20 db quieting): 0.45 Microvolts with 72 Ohm Antenna; 0.9 Microvolts with 300 Ohm Antenna. ■ Sensitivity (IHFM Standard, 300 Ohm Antenna): 1.5 Microvolts. ■ Signal to Noise Ratio: Better than 75 db (100% Modulation.) ■ Capture Ratio: 1.5 db (IHFM Standard.) ■ Four-Gang, Golden Cascode front-end, plus two Nuvistors. ■ IF Stages: Six, wide-band. ■ Limiter: Five, wide-band. ■ Harmonic Distortion: 0.3% (100% Modulation.) ■ FM Stereo Separation: 35 db (at 1 Kc.) ■ Rated Audio Output: 2.0 Volts. ■ Chassis Dimensions: 16<sup>15</sup>/<sub>16</sub>" wide, 4<sup>1</sup>/<sub>16</sub>" high, 12<sup>1</sup>/<sub>2</sub>" deep. ■ Weight: 20 pounds.

**W**ITH the advent of FM-Stereo Multiplex, tuner sensitivity has become more important than ever before. Genuinely distortion-free reception of FM stereo broadcasts requires greater sensitivity—and generally more sophisticated circuitry—than monophonic performance of equivalent quality.

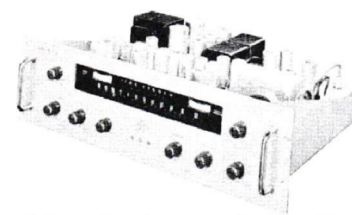
FISHER FM tuners have always been the most sensitive in the world. Previous monophonic models also have more than ample sensitivity for Multiplex and need only be connected to the FISHER Universal Multiplex Adapter to achieve brilliant stereo performance.

Even by FISHER standards, however, the new FISHER FM-Stereo tuners with *built-in* Multiplex facilities represent a significant step forward in sensitivity and advanced wide-band circuitry. They are unquestionably the most advanced FM components available today.

## THE FISHER FMR-1

### BROADCAST NETWORK FM-STEREO-MULTIPLEX TUNER FOR MONITOR AND RELAY APPLICATIONS

The FMR-1 is identical to the FM-1000 above, except for minor physical details, such as the standard 19-inch rack panel, which make it directly adaptable to broadcasting network installations. 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.





## THE FISHER FM-50-B

### FM-STEREO-MULTIPLEX WIDE-BAND TUNER

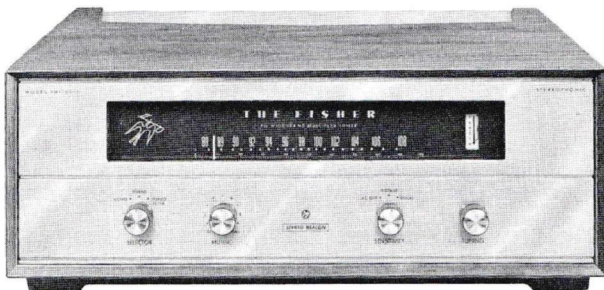
The FM-50-B was designed to provide, at moderate cost, all of the elements essential for optimum reception of FM monophonic or Multiplex stereo broadcasts. Nothing has been sacrificed to maintain the laboratory standards that distinguish all FISHER components. A high-gain triode RF amplifier stage is utilized to achieve a very high degree of sensitivity. Four IF stages are incorporated in the circuit to insure maximum gain, high selectivity, and the broad bandwidth necessary for optimum reception of Multiplex broadcasts. The last two IF stages also serve as limiters to cut off random and impulse-type noise. A wide-band ratio detector provides a high degree of AM suppression with minimum distortion. Tuning is made simple and effortless by virtue of a flywheel-loaded tuning control and a highly sensitive tuning eye. The tuning eye is another unique Fisher First, for in addition to serving as a signal strength indicator, it can also be used, with the turn of a front-panel switch, as a STEREO BEAM indicator which signals automatically the presence of a Stereo Multiplex program.

### OUTSTANDING FEATURES

- Stereo Beam (FM-Stereo-Multiplex and tuning indicator.)
  - Three-position Selector (Mono, Stereo, and Stereo Filter.)
  - Selector Switch, for tuning indicator or Stereo Beam operation.
  - Sensitivity Control: AC Off, Normal and Distant.
  - Station Selector.
  - Four output jacks on rear panel for amplifier and tape recorder.
  - Magnificent architectural brass-finish control panel.
- Wood cabinet for FM-50-B available in Walnut (Model 10-UW), Mahogany (Model 10-UM.) Metal Cabinet in simulated leather, Model MC-2.

### TECHNICAL SPECIFICATIONS

- Frequency Response (after de-emphasis): 20-15,000 cps, within  $\pm 1$  db.
- Sensitivity: 0.7 microvolts (20 db of quieting, with 72 ohm antenna.)
- Sensitivity: 2.2 microvolts (IHFM Standard.)
- Signal-to-Noise Ratio: 70 db (100% Modulation.)
- Selectivity: 55 db (alternate channel.)
- Capture Ratio: 2.5 db (IHFM.)
- Front-End Circuit: High-Gain Dual-Triode.
- I. F. Stages: Four, wide-band.
- Limiters: Three, wide-band.
- FM Harmonic Distortion: 0.5% (100% Modulation.)
- FM Stereo Separation: 35 db. (at 1 KC)
- Rated Audio Output: 2.0 Volts.
- Power Consumption: 42 watts, fused (105-120 Volts, 50/60 cycles.)
- Chassis Dimensions: 15 $\frac{1}{8}$ " wide, 4 $\frac{3}{16}$ " high, 11 $\frac{7}{8}$ " deep.
- Weight: 14 pounds.



## THE FISHER FM-100-B

### FM-STEREO-MULTIPLEX WIDE-BAND TUNER

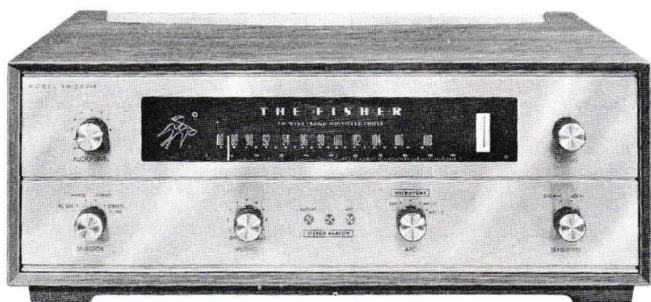
The new FM-100-B couples the finest wide-band design with *advanced* Multiplex circuitry—features that are a 'must' for low-noise FM-Stereo reception of outstanding quality. The high-gain Golden Cascode 'front-end' plus 5 IF stages and 4 limiters assure the clearest and most reliable reception of even the weakest or most distant of stations. This ability to operate perfectly on weak signals is *equally* important in large cities, where steel buildings and other man-made obstacles impair FM reception when ordinary tuners are used. The exclusive FISHER STEREO BEACON on the FM-100-B automatically shows at a glance whether or not an FM station is broadcasting in Multiplex and automatically switches the tuner to the required mode of operation, mono or stereo. From the solid 'feel' of the tuning dial control and the professional-type tuning meter, to the superb listening quality of the extremely low-distortion output, everything about the FISHER FM-100-B bespeaks quality of the highest order.

### OUTSTANDING FEATURES

- Stereo Beacon Light and Automatic Switching System.
  - Tuning Meter.
  - Linear Logging Scale.
  - Three Position Mode Selector (Mono, Stereo-Mono Automatic, and Stereo Filter.)
  - Exclusive IF muting circuit for stereo as well as mono.
  - Sensitivity Control (AC Off, Distant, Local.)
  - Station Selector with Flywheel.
  - Dual Channel Level Controls and four output jacks on rear.
- Architectural brass-finished control panel. Wood Cabinet for FM-100-B available in Walnut (Model 10-UW), Mahogany (Model 10-UM). Metal Cabinet in simulated leather, Model MC-2.

### TECHNICAL SPECIFICATIONS

- Frequency Response (after de-emphasis) 20-15,000 cps, within  $\pm 1$  db.
- Sensitivity: 0.6 microvolts (20 db quieting, with 72 ohm Antenna.)
- Sensitivity: 1.8 Microvolts (IHFM Standard.)
- Signal to Noise Ratio: 70 db (100% Modulation.)
- Selectivity: 60 db (alternate channel.)
- Capture Ratio: 2.2 db (IHFM.)
- Front-End Circuit: Golden Cascode.
- IF Stages: Five, wide-band.
- Limiters: Four, wide-band type.
- Harmonic Distortion: 0.4% (100% Modulation.)
- FM Stereo Separation: 35 db (at 1 Kc.)
- Rated Audio Output: 2.0 Volts.
- Power Consumption: 45 Watts, 105-120 Volts, 50/60 cycles, fused.
- Chassis Dimensions: 15 $\frac{1}{8}$ " wide, 4 $\frac{3}{16}$ " high, 13" deep.
- Weight: 18 pounds.



## THE FISHER FM-200-B

### FM-STEREO-MULTIPLEX WIDE-BAND TUNER

The FM-200-B is unquestionably the world's finest FM tuner intended specifically for home use. It comes within a hairsbreadth of the unsurpassed performance of the professional-standard FM-1000 (or FMR-1) design—and at substantially lower cost. In fact, the FISHER FM-200-B outclasses by a wide margin all FM tuners of other makes. Its ultra-advanced Golden Cascode front-end incorporates four tuned circuits and two of the new Nuvistor tubes plus 5 IF stages, 4 stages of limiting and a wide-band ratio detector, to achieve a degree of sensitivity, selectivity, noise suppression and general freedom from interference considered unattainable even quite recently. The exclusive FISHER MicroTune automatic frequency control feature makes incorrect tuning impossible, even by the novice. Even more remarkable is the exclusive STEREO BEACON, the FISHER invention that automatically lights a lamp on the control panel when a station is broadcasting in Multiplex and automatically switches the tuner from mono to stereo. A unique Multiplex noise filter cancels high-frequency noise without any impairment of the full frequency range of the music signal. Audio quality is limited only by that of the broadcast signal itself—the inherent distortion in the tuner circuits is so low as to be virtually unmeasurable.

### OUTSTANDING FEATURES

- Stereo Beacon and Automatic Switching System. ■ Tuning Meter. ■ Exclusive IF muting circuit for stereo as well as mono.
- Linear Logging Scale. ■ CONTROLS: Three-Position Mode Selector (Mono, Stereo-Mono Automatic and Stereo Filter), Variable Muting, Sensitivity Control (AC Off, Distant, Local), Station Selector with Automatic Micro Tune AFC. ■ Three Jewel Lights: AFC, Muting, Stereo Beacon. ■ Four rear-panel output jacks. ■ Architectural brass-finish control panel.
- Wood cabinet for FM-200-B available in Walnut (Model 10-UW), Mahogany (Model 10-UM.) ■ Metal Cabinet in simulated leather, Model MC-2.

### TECHNICAL SPECIFICATIONS

- Frequency Response: 20-15,000 cps (after de-emphasis.) within 1 db.
- Sensitivity: 0.5 Microvolts (20 db quieting, with 72 ohm Antenna.)
- Sensitivity: 1.6 Microvolts (IHFM Standard.)
- Signal-to-Noise Ratio: 74 db (100% Modulation.)
- Selectivity: 65 db (alternate channel.)
- Capture Ratio: 1.5 db (IHFM Standard.)
- Front-End Circuit: Four-gang Golden Cascode plus two Nuvistors.
- IF Stages: Five, wide-band.
- Limiter: Five, wide-band.
- Harmonic Distortion: 0.3% (100% Modulation.)
- FM Stereo Separation: 35 db (at 1 kc.)
- Rated Audio Output: 2.0 Volts.
- Power Consumption: 58 watts, fused (105-120 Volts, 50/60 cycles.)
- Chassis Dimensions: 15 $\frac{1}{8}$ " wide, 4 $\frac{13}{16}$ " high, 13" deep.
- Weight: 19 pounds.

## THE FISHER K-10

### DYNAMIC SPACEEXPANDER

TRADEMARK

EASILY INSTALLED IN MOST HIGH FIDELITY SYSTEMS

### WHAT IT DOES

Now, with the FISHER K-10 Dynamic Spaceexpander, the owner of a home music system can add a new dimension to listening—the dimension of reverberation, with one simple control. Natural reverberation is created by the reflection of sound from the walls and ceiling of an auditorium—sound which reaches the listener's ear a tiny fraction of a second later than the sound from the original source. For example, a single hand-clap is heard several times—first, as a direct sound impulse, and then (with much less intensity) as reflected sound which rapidly diminishes, or "decays." The time of this decay is a function of the size and characteristics of the auditorium. So important is reverberation as a psychological stimulus that it is the way we instinctively estimate the size of a room.

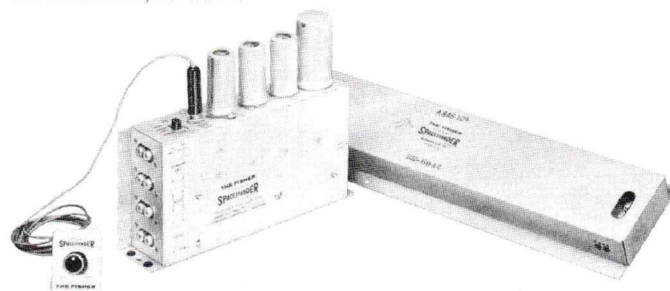
The FISHER K-10 Dynamic Spaceexpander now makes it possible for every home listener to control, to a degree never before possible, the actual character of sound produced from any source—records, tape, home recordings, or radio broadcasts. The FISHER K-10 is remarkably simple to operate (there is only *one* control) and easy to install. ONE K-10 PLAYS STEREO OR MONO PROGRAMS.

### HOW IT WORKS

A portion of the input signal is fed into the electronic unit of the FISHER K-10, sent to the reverberation unit, then recombined with the original program signal. The reverberation unit is a slender metal enclosure containing a pair of coil springs connecting two transducers. The input transducer converts the electrical signal to a turning movement which travels down the springs to the output transducer, where it is converted back to electrical energy, and fed to the power amplifier. This reverberated signal is delayed a nominal 33 milliseconds, thereby simulating the natural reverberation of a well-designed auditorium.

### ELECTRONIC UNIT AND CONTROL

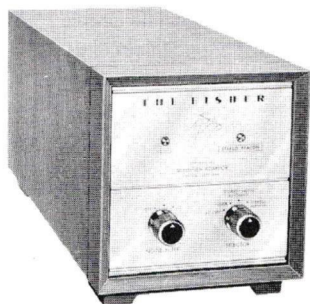
Self-powered, 105-120 V.A.C. 3 dual-purpose tubes: 1—7247, 2—7025/ECC83/12AX7. Selenium rectifier. DECAY TIME: variable, maximum 2 seconds at 300 cps. MINIMUM INPUT VOLTAGE REQUIRED, 0.2 volt; MAXIMUM ALLOWABLE INPUT VOLTAGE, 5 volts. INPUT IMPEDANCE, 250,000 ohms; OUTPUT IMPEDANCE, 2000 ohms. OUTPUT VOLTAGE, 0.2-5 volts. GAIN, unity. HUM LEVEL, 80 db below 2.5 volts. POWER CONSUMPTION, 10 watts.



**World's Finest Reverberation Unit  
For Home and Professional Use**

# UNIVERSAL MULTIPLEX ADAPTORS

Your present stereo system is *not* obsolete. You can add FM-Stereo-Multiplex and enjoy fabulous Multiplex broadcasts simply by adding a FISHER Adaptor! Both the MPX-100 and MPX-200 are *universal* models—designed for use with any FM tuner or receiver of good quality—regardless of its age, make or model. Special controls match them exactly to the electrical requirements of *your* equipment, assuring optimum results. Once set, these controls need no further attention. Simply connect a FISHER Adaptor and you can immediately start enjoying the thrilling new FM-Stereo broadcasts, tuning in FM stations exactly as before.



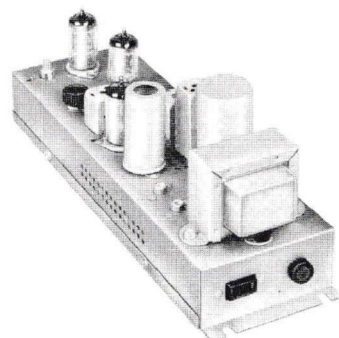
## THE FISHER MPX-100

### WITH EXCLUSIVE STEREO BEACON

The FISHER MPX-100 is equipped with STEREO BEACON, the fabulous FISHER invention that instantly tells you whether the station to which you are tuned is broadcasting standard FM or FM-Stereo-Multiplex. If the program is Stereo-FM, STEREO BEACON *automatically* lights an indicator jewel and *automatically* switches your equipment from mono to stereo operation. On monaural programs, STEREO BEACON *automatically* switches to mono operation. This FISHER exclusive makes Multiplex a *pleasure*, not a problem.

### OUTSTANDING FEATURES

- STEREO BEACON. ■ Automatic Switching, to stereo or mono operation. ■ 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. ■ Architectural brass-finish Control Panel. ■ Beautiful, wood cabinet available in Walnut (Model 40-UW) and Mahogany (Model 40-UM.)



## THE FISHER MPX-200

### FOR CONCEALED INSTALLATION

The FISHER MPX-200 has the 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 or arrangement of their present equipment. The MPX-200 is identical to the MPX-100 in quality, freedom from distortion, unusually high channel-separation, and extremely favorable signal-to-noise ratio. It can be concealed anywhere near your present tuner.

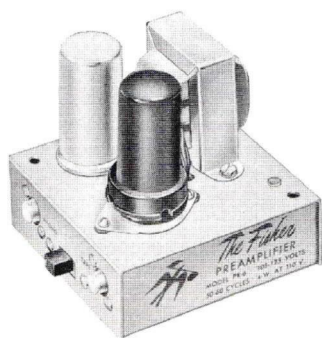
### OUTSTANDING FEATURES

- Self-Powered. ■ Compact and designed for easy installation. ■ Can be placed up to three feet from the 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, assuring maximum stereo separation. ■ Controls need be set only at time of installation. ■ Unusually effective filtering, for flawless tape recording.

### TECHNICAL SPECIFICATIONS OF THE MPX-100 AND MPX-200

- Frequency Response: 20-15,000 cps  $\pm$  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, 4 $\frac{3}{4}$ " wide, 4 $\frac{13}{16}$ " high, 12" deep.
- Weight: MPX-100, 9 pounds. MPX-200, 3 $\frac{1}{2}$  pounds.



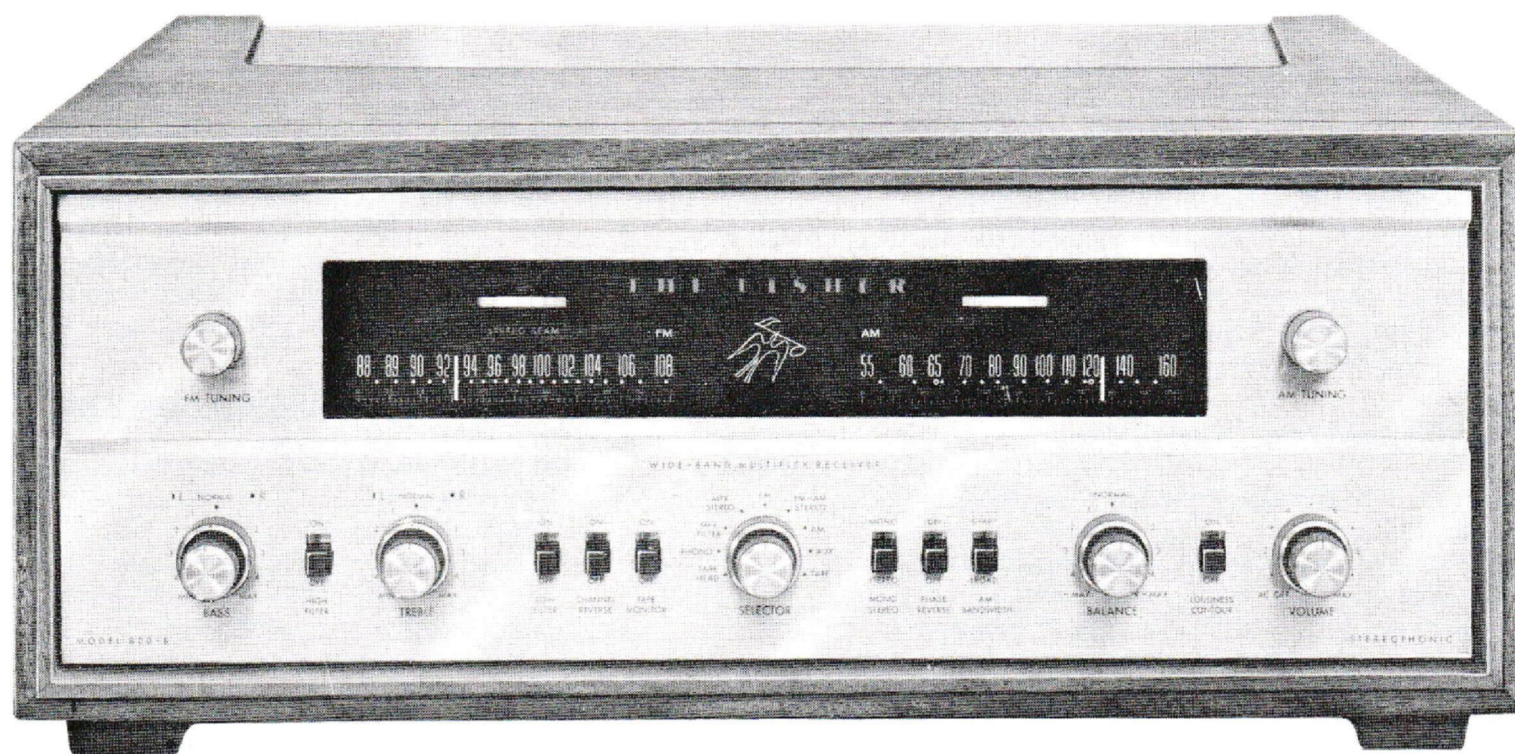
## THE FISHER PR-6

### PREAMPLIFIER

### OUTSTANDING FEATURES AND SPECIFICATIONS

- Two high gain triode stages (65C7). ■ 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:  $\pm$  2 db 30-20,000 cps. ■ Hum: Better than 60 db below 1 v for phono; better than 70 db below 1 v for microphone. ■ Equalization: RIAA for phono NARTB for tape. ■ Self-Powered (105-120 V.A.C.) ■ SIZE: 3 $\frac{3}{4}$ " x 3 $\frac{3}{8}$ " x 3 $\frac{1}{2}$ " high. ■ WEIGHT: 1 $\frac{1}{2}$  pounds.

# The totally integrated approach: simply



## 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

■ Exclusive 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.



## 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

■ Exclusive 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, 5¼" high, 13½" deep. **WEIGHT:** 31 pounds. Wood Cabinets are available in Walnut (Model 30-UW), Mahogany (Model 30-UM.)

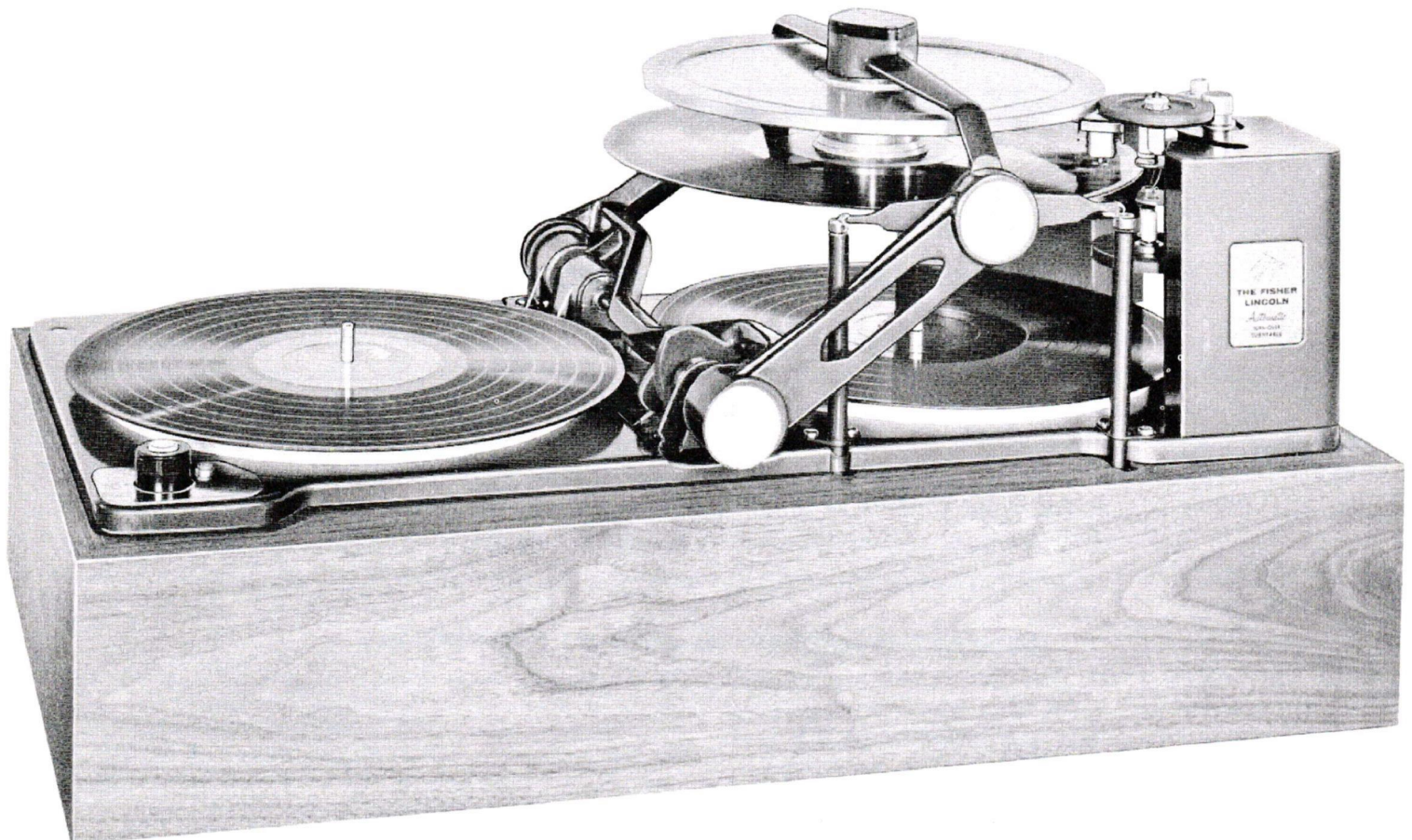
# THE FISHER-LINCOLN

**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 stylus angle can be correct only 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 this remarkable wide selection of service:  
**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.



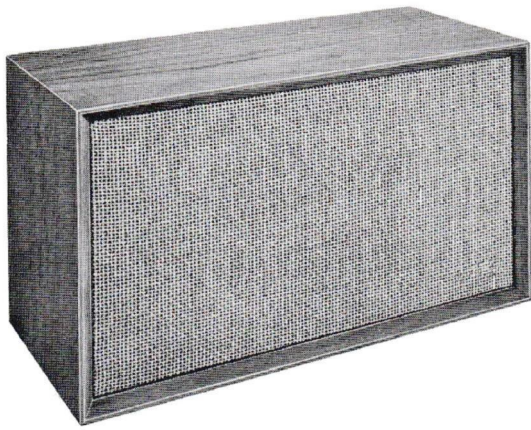
# THE INSIDE STORY ON FISHER LOUDSPEAKER SYSTEMS

**S**IGNIFICANT advances in loudspeaker design have made it possible to attain superb reproduction of sound with an enclosure of bookshelf size. Faithful reproduction of the lower frequencies no longer depends on a structure of unwieldy dimensions, but can now be obtained in a compact cabinet which will fit gracefully into modest space. The FISHER Free-Piston speaker design uses the principle known as 'high compliance' to achieve its excellent reproduction of low bass tones. Of great significance, however, is the fact that FISHER Free-Piston speakers are also *highly efficient*. Until the advent of the FISHER design, high-compliance speakers have always been notably inefficient, requiring premium-priced amplifiers to drive them. The FISHER Free-Piston speaker system, through its advanced engineering, is so much more efficient in fact, that full-range reproduction is now possible even with modest ten-watt amplifiers.

The cabinets are hermetically sealed at the factory and all joints are interlocked in the tradition of fine cabinetmaking; no nails or screws are used in their construction. The enclosures are filled with high-density AcoustiGlas, the identical material used to deaden the sound of jet aircraft engines. There is no enclosure resonance, no parasitic vibration; the reproduced sound is pure and transparent, completely free of spurious coloration of any type. In the simplest terms, the speakers add no 'tone' whatever themselves. They reproduce *the music itself*.

Cabinets are finished in Mahogany, Walnut or Cherry and are available, as well, in unstained Birch, finish-sanded ready for staining or painting.

# THE FISHER XP-1



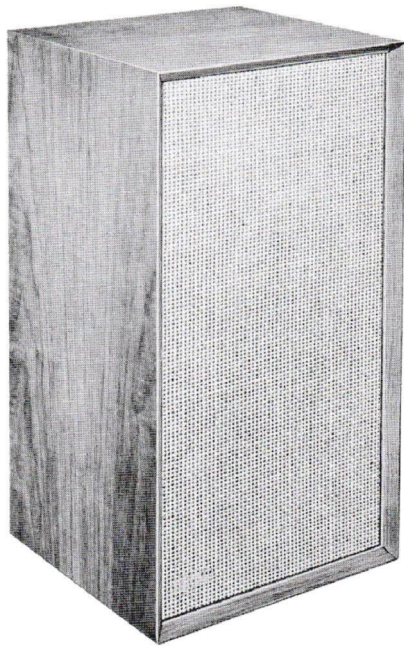
CAN BE USED HORIZONTALLY OR VERTICALLY

**OUTSTANDING FEATURES:** Total of three speakers: 12-inch woofer, 5-inch mid-range speaker, 3-inch cone tweeter of unique free-edge design. The woofer has a massive two-inch voice coil and can be used independently. Frequency response: from 30 cps to well beyond the range of audibility. Crossovers at 1800 and 5000 cps. Impedance: 8 ohms. Dimensions: 24" x 13¼" x 11¼" deep. Shipping weight: 40 pounds.

First of the remarkable XP series speaker systems by FISHER, the XP-1 is the revolutionary speaker that proved it was possible to have both high compliance *and* high efficiency in a compact enclosure. Stray magnetic fields, so wasteful of amplifier power, have been concentrated in the air gap around the voice coil by the exclusive FISHER encapsulated magnet structure. The XP-1 is a true three-way system, with a twelve-inch free-piston woofer, five-inch mid-range speaker, and three-inch free-edge cone tweeter. Inclusion of a balance control permits the user to adjust the ratio of the low and high-frequency response to suit precisely the demands of room acoustics and personal taste. When desired, the balance control may be employed to cut off the high-frequency output completely, permitting independent use of the woofer. Each of the three speakers reproduces that portion of the audio spectrum for which it was specially designed, *and that portion alone*, because no single speaker can by itself possibly cover the entire audible range with fidelity and efficiency. The XP-1's advanced design now makes it possible to obtain magnificent sound reproduction with *any* amplifier of 10 watts power or more.

AVAILABLE IN OILED WALNUT, CHERRY, MAHOGANY  
AND UNSTAINED BIRCH, SANDED FINISH

# THE FISHER XP-2



CAN BE USED HORIZONTALLY OR VERTICALLY

In the FISHER XP-2 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 XP-2 offers a remarkable transient response and an unusually high overload capacity. Frequency response is smooth and transparent throughout its range, and the low-frequency performance is of a quality heretofore associated only with larger, far more costly and bulky speakers. Two eight-inch low-frequency speakers of free-piston design, each with a 1½-inch voice coil, assure splendid reproduction of bass tones and increased efficiency at the low end of the audible range. The upper range is reproduced by a 5-inch cone capable of a truly clean response up to 15,000 cycles.

## OUTSTANDING FEATURES

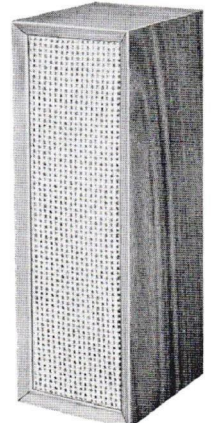
Total of three speakers: two 8-inch bass units, free-piston design, polyethylene-impregnated suspension for long-range stability, 1½" voice coils. 5-inch cone tweeter, crossover at 2000 cycles. Impedance, 8 ohms. Amplifier power required: 10 watts minimum. Dimensions: 22" x 12" x 11¼" deep. Speakers can be used horizontally or vertically. Shipping weight: 30 pounds.

AVAILABLE IN MAHOGANY, WALNUT, CHERRY AND UNSTAINED BIRCH.

# THE FISHER WS-1 WIDE-SURROUND® SPEAKER SYSTEM

A startling improvement in stereo listening can be instantly achieved by adding a pair of FISHER Wide-Surround speakers to an existing system or console. These moderately-priced, extremely compact units augment the sound from the primary speaker systems and create a breadth of music reproduction that makes every seat in the room a 'front-row-center' location. The FISHER wide-surround speaker system effectively overcomes 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. This 'wide surround' of music makes it possible for stereophonic listening to be at its best in a much greater area, and eliminates the need for limiting seating locations.

**OUTSTANDING FEATURES** 10" x 2¾" oval, Alnico V permanent magnet speaker. Impedance, 8 ohms. Frequency response, 250 to 15,000 cps, cutoff at 250 cycles. Can be attached to any speaker terminals. 4, 8, or 16 ohms. Cabinets exquisitely finished in Walnut, Mahogany, Teak, Maple or Cherry. Dimensions: 11½" wide x 3¾" high x 4½" deep. Shipping weight: 4½ pounds each.



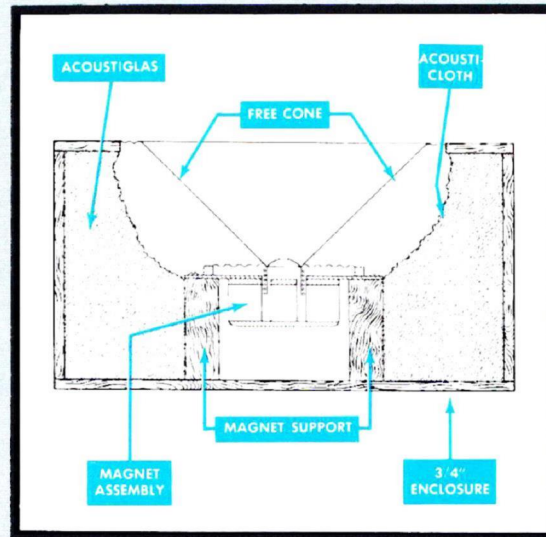
CAN BE USED HORIZONTALLY OR VERTICALLY

# NEW INVENTION GIVES TOTALLY NEW SOUND

PATENT PENDING

THE FISHER XP-4 represents a totally new approach in loudspeaker design. It is the world's first loudspeaker system in which the conventional metal frame supporting the outer edge of the bass speaker cone has been completely eliminated. This structure is often the source of undesirable reflections from the back of the cone, causing uneven frequency response and unnatural coloration of the sound. It is also a frequent source of vibration.

Now, unit construction, a principle that has revolutionized the automobile industry, has been applied to loudspeaker design. In place of the metal speaker frame, the FISHER XP-4 utilizes the heavy walls of the cabinet itself as a massive supporting structure for the bass speaker cone. Thus the bass speaker and the entire enclosure are a single inseparable unit. Reflections are eliminated by packing the space behind the bass speaker cone with AcoustiGlas. Cone breakup has been eliminated by de-



signing the cone as a rigid piston.

The combined result of these advanced design features is a low and middle-frequency sound that recreates the original in thrilling clarity, without a trace of 'speaker tone.' That fatiguing 'enclosure' tone is gone. Uneven middle-frequency 'caw' quality is gone. Excessive treble hiss is gone. In their place you will find *the music itself*, in direct, *see-through* contact with the original performance, clean and full-bodied. For only in the FISHER XP-4 are the all-important middle frequencies *totally* unaffected by reflections that are invariably generated between the back

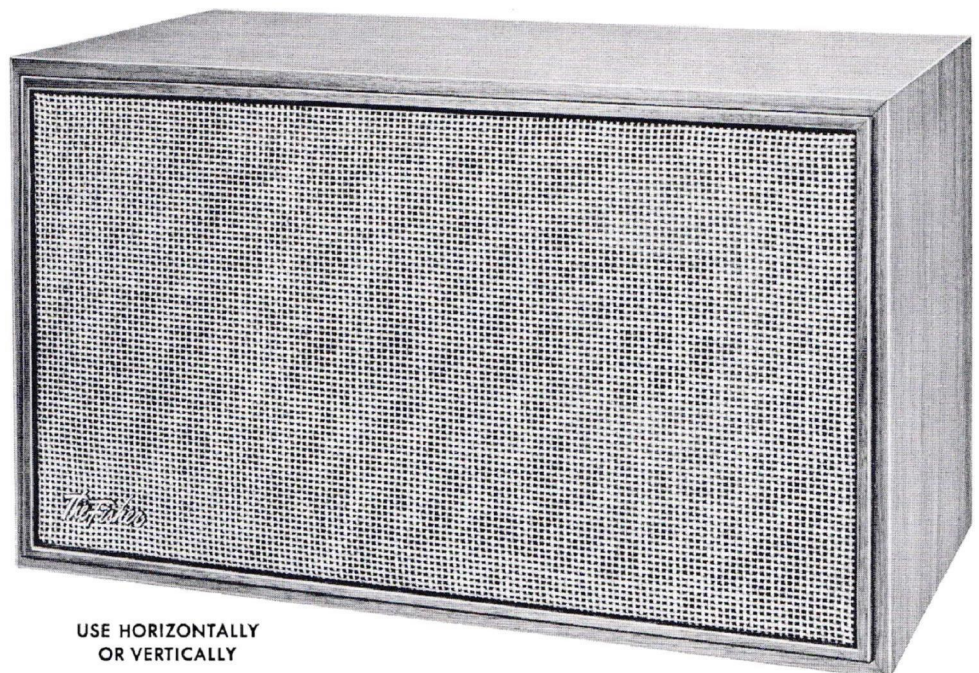
surface of the cone and the near surface of the conventional speaker frame.

The FISHER XP-4 reflects, in its every aspect, the precision engineering that brought it into being and made it possible to produce this novel design with such complete success. It will set the standard in speaker design for years to come.

## THE FISHER XP-4

### OUTSTANDING FEATURES:

Total of four speakers: 12" woofer with two-inch voice coil. Two 5" mid-range speakers (AcoustiGlas packed to eliminate cone breakup). One two-inch hemispherical high-frequency unit, covering an angle of 120°, assuring non-directional treble. Frequency response from below 30 cps to well beyond 15,000 cps. Infinitely variable Balance Controls for middle and high frequencies (may be turned off completely, if desired). Professional-type, *three-way* crossover network uses heavy air-core coils and oil-filled condensers for elimination of distortion at crossover frequencies. Impedance, eight ohms. Power handling capacity, up to 60 watts without breakup. Dimensions: 12½" front-to-back x 24½" x 14".



USE HORIZONTALLY  
OR VERTICALLY

AVAILABLE IN OILED WALNUT, CHERRY, MAHOGANY AND UNSTAINED BIRCH, SANDED FINISH

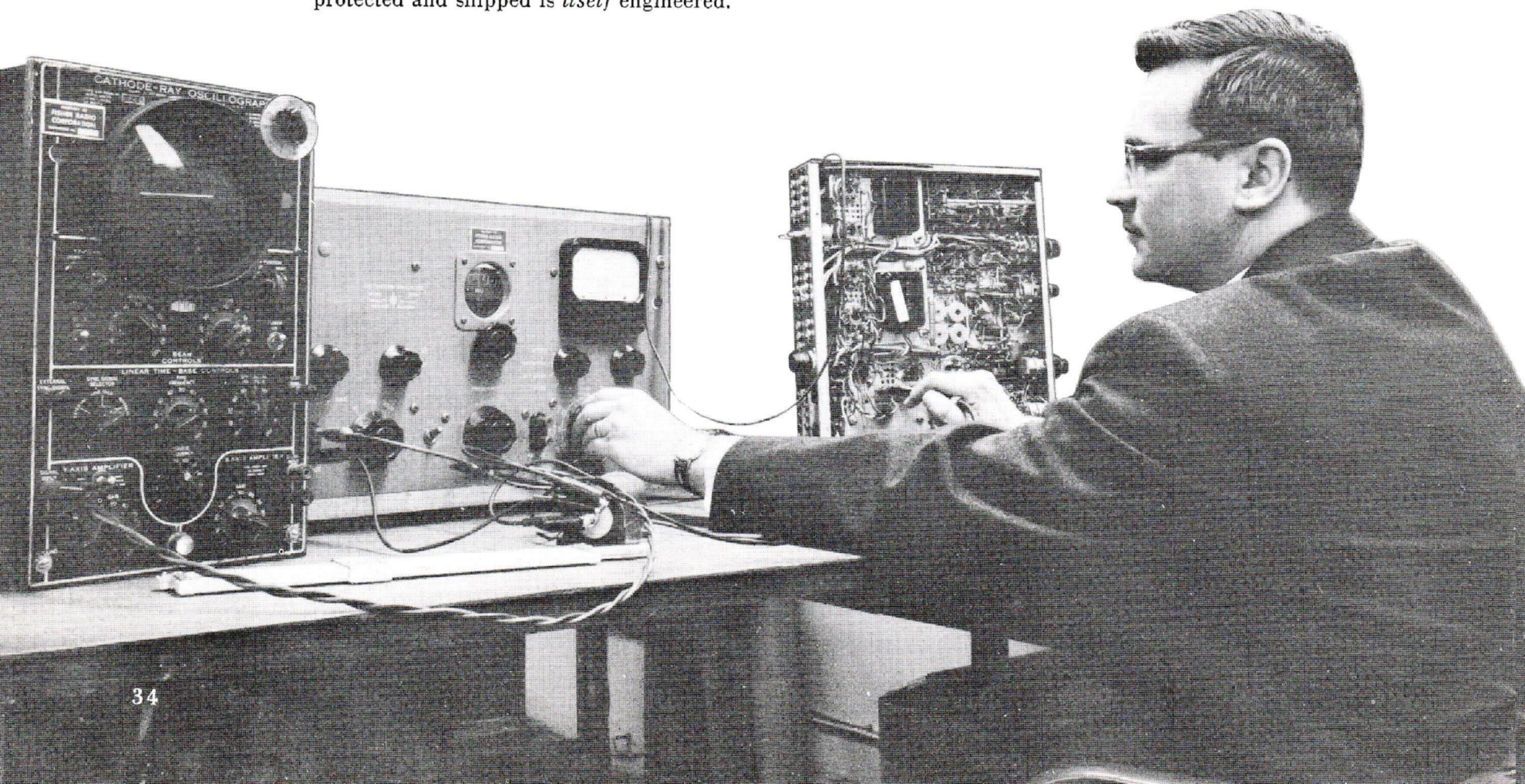
# BEFORE WE ALLOW FISHER COMPONENTS TO REACH YOUR DEALER... they must undergo:

**TEST AND INSPECTION** Every single part in a Fisher instrument, whether you can see it or not, has been selected as though it were the most important part. It is subjected to constant scrutiny and test—from the moment it arrives at our Receiving Department, to the moment the complete instrument is placed in a dust-free, moisture-free plastic bag and sealed in its container for shipment to our customers.

Every electronic test and alignment procedure to which a Fisher instrument is subjected is handled by fully automated instruments designed and built in our own laboratories by Fisher engineers. Every single piece of equipment receives the same complete and thorough tests. In this vital work all possible errors due to oversight or fatigue have been eliminated.

**RELENTLESS QUALITY CONTROL** The Quality Control Department maintains a careful check of all incoming material, as well as all outgoing instruments, to determine if all electrical and mechanical specifications meet the required standards of the Engineering Department. Units are spot-checked off the line, following standard electronic tests, and as finished packed units taken from warehouse inventory stocks. Often Fisher standards for component material are so high that there is nothing commercially available. Dual controls for stereo use with uniform tracking did not exist in practical form until Fisher engineers set up measuring and testing techniques for our control manufacturers to follow.

**IRONCLAD PACKAGING** No matter how fine a product, no matter how carefully it is made and tested, its mission cannot be accomplished unless it reaches you, the user, in the same flawless condition in which the final inspector approved it. The carton in which every Fisher instrument is protected and shipped is *itself* engineered.



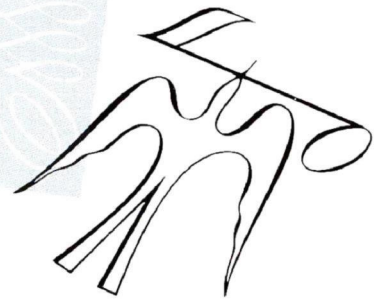
## WARRANTY TO OWNER

**THE FISHER** equipment you purchased was carefully tested and inspected before leaving our laboratories. If properly installed and operated in accordance with the instructions furnished, it should give you the finest results of which it is capable. This equipment is unconditionally guaranteed against all defects in material and workmanship for ninety days from date of sale to the original purchaser. Any part of the equipment which under normal installation and use, discloses such a defect, will be adjusted or replaced by the dealer from whom purchased.

## WARRANTY OF QUALITY

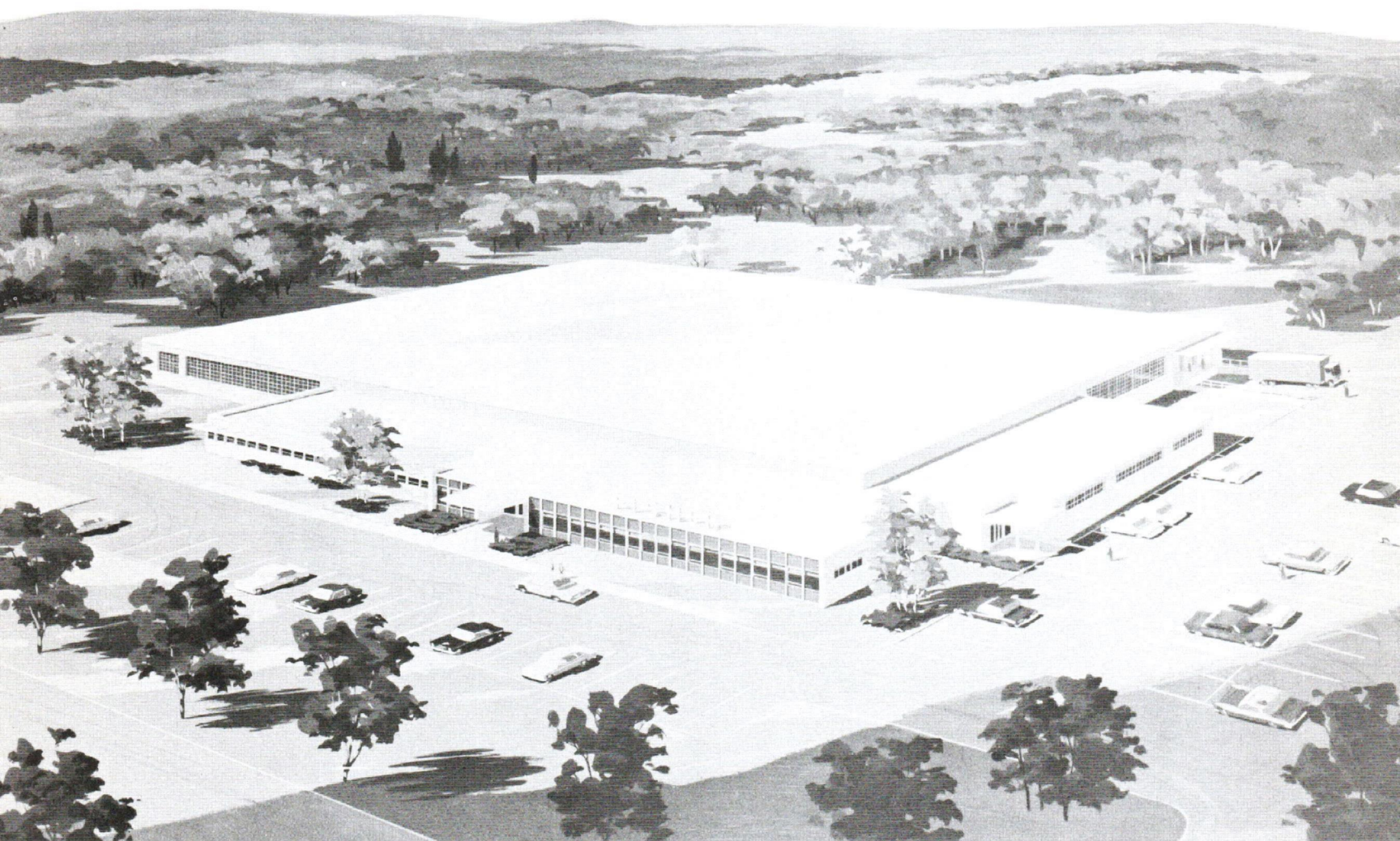
I unconditionally guarantee this Fisher instrument to equal or exceed the technical perfection of the Master Standard Sample Unit in our engineering laboratories, on which our published specifications are based.

*Avory Fisher*



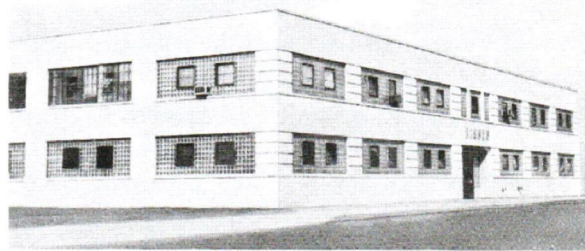
## LONG AFTER YOU HAVE PURCHASED YOUR FISHER COMPONENTS... Fisher after-sale service stays with you:

Customer satisfaction is one of the most treasured assets of the Fisher Radio Corporation. For that reason an elaborate network of service stations is maintained in key cities, to bring prompt and highly competent assistance to owners of Fisher equipment that may on occasion require adjustment. No matter where you live, you are never far from Fisher parts and service. Replacement parts, should they ever be necessary, are always available for immediate shipment from factory stock whenever—as in the case of older models—the service depot may not have them on hand. We still have parts in stock for units we made more than twenty years ago—parts that were never needed, but still wait their turn to demonstrate the true meaning of the Fisher name on the product you buy. Both in our field service depots and at the factory itself you will find highly trained technicians who are thoroughly familiar with your Fisher equipment. Their entire interest and objective is to give you, the Fisher owner, day-to-day assurance of long, trouble-free service from your Fisher equipment.



## 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

# 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 20,000-cycle fidelity.
- 1937** First two-unit high-fidelity system with separate speaker enclosure.
- 1938** First coaxial speaker system.
- 1938** First high-fidelity tuner with amplified AVC.
- 1939** First dynamic range expander.
- 1939** First 3-way speaker in a high-fidelity system.
- 1939** First center-of-channel tuning indicator.
- 1945** First preamplifier-equalizer with selective phonograph equalization.
- 1948** First dynamic range expander with feedback.
- 1949** First FM-AM tuner with variable AFC.
- 1952** First 50-watt, all-triode amplifier.
- 1952** First self-powered Master Audio Control.
- 1953** First self-powered, electronic sharp-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-position mixing facilities.
- 1955** First correctly equalized, direct tape-head preamplifier 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 FM-AM tuner with TWO meters.
- 1956** First Performance Monitor in a high-quality amplifier for home use.
- 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 recording 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., accepts 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.
- 1960** First internal switching system to permit immediate tape playback with use of all controls and switches.
- 1961** First FM-Stereo-Multiplex Adaptor 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 loudspeaker system with frameless woofer cone, to eliminate all parasitic resonance.



**FISHER RADIO CORPORATION • LONG ISLAND CITY 1, NEW YORK**

PLANTS IN LONG ISLAND CITY, N.Y. • FISHER PARK, MILROY, PA. • LEWISTOWN, PA. • BELLEVILLE, N.J.