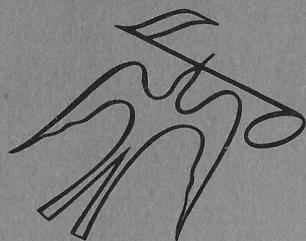


OPERATING INSTRUCTIONS AND WARRANTY



# THE FISHER<sup>®</sup>

**Custom Electra**  
MODEL E-492  
**Stereophonic Radio-Phonograph**

PRICE \$1.00

WORLD LEADER IN STEREOPHONIC HIGH FIDELITY

(c) [www.fisherconsoles.com](http://www.fisherconsoles.com)

# CONGRATULATIONS!

With your purchase of a FISHER instrument you have completed a chain of events that began many months ago, in our research laboratories. For it is there that the basic concept of the equipment you have just acquired came into being—its appearance, its functions, its quality of performance, its convenience of use.

But the end step—your purchase—is merely a beginning. A door has now opened, for you and your family, on virtually unlimited years of musical enjoyment. Recognizing that one of the keys to pleasurable ownership is reliability, we have designed this instrument to give long and trouble-free service. In fact, instruments we made over twenty-seven years ago are still in use today.

Remember always that we want this equipment to give you the best performance of which it is capable. Should you at any time need our assistance toward that objective, please write me personally.

## AN IMPORTANT SUGGESTION

Many hours have been spent by our engineers and technical writers to create this instruction book for your guidance and enjoyment. If you want the **most** out of your FISHER, there is only one way to obtain it. With the equipment before you, please read this booklet carefully. It will be time well spent!

*Avery Fisher*

Founder and President

## 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. | 1956 | First dual dynamic limiters in an FM tuner for home use.   | 1961 | First complete receivers with Multiplex.   |
| 1937 | First exclusively high fidelity TRF tuner, featuring broad-tuning 20,000 cycle fidelity.   | 1956 | First Performance Monitor in a high quality amplifier for home use.  | 1961 | First FM-Stereo-Multiplex tuners with STEREO BEAM.   |
| 1937 | First two-unit high fidelity system with separate speaker enclosure.   | 1956 | First FM-AM tuner with TWO meters.   | 1961 | First loudspeaker system with frameless woofer cone, eliminating all parasitic resonance.  |
| 1938 | First coaxial speaker system.  | 1956 | First complete graphic response curve indicator for bass and treble.   | 1961 | First internal switching system to permit immediate tape playback with use of all controls and switches.   |
| 1938 | First high fidelity tuner with amplified AVC.  | 1957 | First Golden Cascade FM Tuner.   | 1962 | First simplified-operation Control-Amplifier, with infrequently used controls behind a front-panel cover, yet immediately accessible.            |
| 1939 | First 3-Way Speaker in a high fidelity system.   | 1957 | First MicroRay Tuning Indicator.   | 1962 | First loudspeaker with eddy-current-damped voice coil.   |
| 1939 | First Center-of-Channel Tuning Indicator.  | 1958 | First Stereophonic Radio-Phonograph with Magnetic Stereo Cartridge.  | 1962 | First bass speaker with combined serrated-aluminum and fiber cone.   |
| 1945 | First Preamplifier-Equalizer with selective phonograph equalization.   | 1959 | First high-quality Stereo Remote Control System.   | 1962 | First FM Tuner Kit with separate d'Arsonval meter for tuning and separate cathode ray stereo broadcast indicator (STEREO BEAM).                  |
| 1948 | First Dynamic Range Expander with feedback.  | 1959 | First complete Stereophonic FM-AM Receiver (FM-AM tuner, audio control, 40-watt amplifier).  | 1962 | First Stereophonic FM Tuner with TUNE-O-MATIC Motor Tuning.  |
| 1949 | First FM-AM Tuner with variable AFC.   | 1959 | First high-compliance plus high-efficiency free-piston speaker system.   | 1962 | First Supersonic Wireless Remote Control in a high fidelity component.   |
| 1952 | First 50-Watt, all triode amplifier.   | 1960 | First to use MicroRay for FM tuning and as a Recording Audio Level Indicator.  | 1963 | First to use 8417 tubes with unique cavity-anode design.   |
| 1952 | First self-powered Master Audio Control.   | 1960 | First complete stereo FM-AM receiver with 60-watt power amplifier and new 7591 output tubes.   | 1963 | First power amplifier to use oscilloscope-type, frequency compensated input circuit.   |
| 1953 | First self-powered electronic, sharp-cut-off filter system for high fidelity use.  | 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. | 1963 | First amplifier kit with STRATABALANCE, visual dynamic balancing system.   |
| 1953 | First Universal Horn-Type Speaker Enclosure for any room location and any speaker.   | 1960 | First stereo tuner with MicroTune.   | 1964 | First multiplex adaptor with 'flywheel synchronization.' Closely approaches theoretical limit of noise rejection, and of all spurious responses. |
| 1953 | First FM-AM Receiver with a Cascade Front End.   | 1960 | First FM tuner with six IF stages.   | 1964 | First AFC with strong locking on weak signals, with no pull-in from adjacent strong signals.   |
| 1954 | First low-cost electronic Mixer-Fader.   | 1960 | First FM tuner with five limiters.   |      |  |
| 1954 | First moderately-priced, professional FM Tuner with TWO meters.  | 1960 | First front panel antenna selector switch, 72-300 ohm, local-Distant positions.  |      |  |
| 1955 | First Peak Power Indicator in high fidelity.   | 1960 | First Multiplex units with STEREO BEACON and automatic switching from mono to stereo.  |      |  |
| 1955 | First Master Audio Control Chassis with five-position mixing facilities.   |      |  |      |  |
| 1955 | First correctly equalized, direct tape-head master audio controls and self-powered preamplifier.   |      |  |      |  |
| 1956 | First to use Power Monitor in a home amplifier.  |      |  |      |  |
| 1956 | First All-Transistorized Preamplifier-Equalizer.   |      |  |      |  |



**CUSTOM ELECTRA**  
**MODEL E-492**  
**Stereophonic Radio-Phonograph**

Your new console is an outstanding example of the bold imagination, sound design and care in manufacture which have made the FISHER name synonymous with leadership in high fidelity for over a quarter-century. Incorporating major advances in electronics and electro-acoustics, it exhibits the superlative FISHER performance long praised by professional musicians and musical connoisseurs alike.

This unit is a complete high-fidelity system featuring a completely transistorized AM-FM-stereo receiver, a precision four-speed Automatic Turntable, and two matched, full-range speaker systems.

The receiver comprises an AM-tuner section, a sensitive FM-tuner section with a revolutionary new FET front end and a multiplex decoder with exclusive STEREO BEACON\*, a low-noise preamplifier-control section, and a wideband, low-distortion power amplifier employing the Fisher **Transist-O-Gard** circuit that protects it against overload or short-circuit damage. The receiver's controls and switches provide complete control of the mode, volume, balance and tonal characteristics of the selected program material as well as a choice of listening to this material through the console's own speaker systems or through conveniently connected extension speakers. A control-panel jack offers the added option of private listening through headphones while a pair of jacks at the rear of the console provides means for connecting a pair of FISHER WS-1 WIDE-SURROUND® speakers for enhanced stereo separation. Tape recorders (or other high-level sources) can be played through the system by connecting them to the appropriate jacks at the rear of

the console. Additional facilities are provided for making tape recordings of any program source played through the console as well as adding reverberation to any source with the FISHER Model K-10 DYNAMIC SPACEEXPANDER®.

The Automatic Turntable, equipped with a diamond-stylus magnetic stereo cartridge, can automatically shut off the entire console after playing the last record. This feature permits you to leave the console unattended when playing records.

Each of the compound speaker systems contains separate speakers for the various segments of the audible spectrum and a specially designed low-loss crossover network. All speakers—custom-built to exacting standards with large-diameter voice coils and massive magnet assemblies—are precisely matched for smoothest overall response and minimum distortion.

As with any FISHER instrument, the most important advantages of this console will become increasingly apparent with the passage of time. These are the craftsmanship in construction, the use of costly, more durable materials, and the rigid test procedures behind every FISHER unit which receives the final stamp of approval. Before leaving the factory, your console had to pass a comprehensive series of stringent examinations. In this way, we endeavor to maintain our long-established, world-wide reputation for the very highest standards in performance and reliability.

\*The trademark, STEREO BEACON\* signifies this model has the exclusive convenience feature that automatically switches to the stereo mode, signals the presence of the stereo broadcast, and automatically switches back to mono again—according to the type of program being received.      \*Patent Pending

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### INSTALLATION GUIDE FOR THE MAN IN A HURRY

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We realize that you are anxious to play your new FISHER console but, at the same time, we must warn you that a few precautionary measures are in order; those few extra minutes spent in installing the unit correctly now will avoid needless disappointment later on and will assure years of trouble-free listening. PLEASE KEEP IN MIND THAT OUR WARRANTY DOES NOT COVER DAMAGE CAUSED BY MISHANDLING, MISUSE, EXCESSIVE LINE VOLTAGE, OR INSUFFICIENT VENTILATION. Follow the instructions in this section exactly in the sequence in which they are presented; you may then proceed directly to the next section, OPERATING GUIDE FOR THE MAN IN A HURRY.

#### POWER REQUIREMENTS

Before you do anything else, look at the chassis layout card on the console's rear panel. It indicates the AC voltage range for which your unit was wired. Make certain that the electrical power in your

home is 60 Hz (cps)\* AC (*not* DC) and that its voltage lies within the range marked on the card. If you are not sure about the type of power in your home or about the voltage range of your console, consult your local utilities company or dealer. Do not connect the power cord to an electrical outlet or turn on the unit yet.

**\*NOTE:** The AC line frequency in almost all areas of the United States is 60 Hz (cps), but in the event that you have 50 Hz (cps) AC in your locality, you will need a special adapter pulley so that the Automatic Turntable will revolve at the correct speed. This pulley can be obtained from your authorized FISHER dealer.

#### LOCATION

Place the console in any convenient location that suits both your listening requirements and room decor *but make sure that it is away from radiators, warm-air ducts, or other sources of heat.* Leave at least 2 inches clearance between the rear of the console and the wall (or other obstruction) for ventilation. If the electrical power in your home satisfies the requirements in item 1, connect the console's power cord to a conveniently located electrical outlet.

#### THE AUTOMATIC TURNTABLE

The console has been shipped with the Automatic Turntable held firmly to its mounting board by means of two shipping screws and — in some instances — with the turntable platter packed in a separate container supplied with the console. Prepare the turntable for operation as follows:

- (a) Turn the two shipping screws (one in the left rear corner of the baseplate and the other near the right front corner, next to the control levers) clockwise as far as they will go. The baseplate will then 'float' above the board and should bounce up and down under hand pressure. This shock-mounting prevents vibrations and jolts from causing the stylus to skip record grooves.
- (b) If the turntable platter is not already in place, remove it from its shipping container and install it as described in the installation instructions provided with the platter.

(c) Remove the rubber bands that hold the pickup (tone) arm and overarm (if used on your turntable) but keep the pickup arm locked temporarily with the pickup rest clip until you are ready to play records. **Always remember to lock the arm with this clip when not using the turntable.**

(d) Remove the plastic stylus guard from the pickup cartridge and see the turntable instructions sheet for operating details.

**CAUTION: If it should be necessary to reship this instrument, first fasten the pickup arm with the pickup rest clip and— if your turntable uses an overarm — swing the overarm towards the center spindle until it drops into its locked position. Then lock the turntable baseplate to its mounting board by turning the shipping screws counterclockwise as far as they will go. In addition, if your set incorporates a DUAL Model 1014 Automatic Turntable, remove the turntable's spindle, spring clip, and platter and pack them for shipment as described in the CAUTION card packed with the console. FAILURE TO OBSERVE THESE PRECAUTIONS WILL VOID ALL WARRANTIES ON THIS INSTRUMENT.**

## **SPEAKERS**

To augment the console's own built-in speaker systems, provisions have been included for connecting a pair of FISHER WS-1 WIDE SURROUND® speakers (for enhanced stereo separation in the main listening room) and a pair of remote extension speakers (for stereo listening in a second room). Please refer to the paragraphs entitled *WIDE-SURROUND SPEAKERS* and *EXTENSION SPEAKERS* in the *ACCESSORIES* section of this manual for detailed information.

## **AUXILIARY PROGRAM SOURCES**

The *ACCESSORIES* section of this manual contains complete instructions for connecting an additional auxiliary program source (tape recorder or tape player, short-wave tuner, television receiver, sound-movie projector, etc.) as well as the FISHER Model K-10 SPACEEXPANDER reverberation unit to this console. We recommend, however, that you complete this section first, go on to the

*OPERATING GUIDE FOR THE MAN IN A HURRY*, and familiarize yourself with the basic operations of the console before connecting any such components.

## **ANTENNAS**

Your console is equipped with its own built-in AM and FM antennas; the AM antenna is a ferrite-core loop mounted on the receiver chassis while the FM antenna is a dipole (made of 300-ohm twin-lead antenna wire) stapled to the rear of the console. These antennas should yield excellent results in most cases, except in those urban localities having severe FM-multipath problems or in distant 'fringe' areas with weak-signal problems. Regardless of where you live, proceed to the *OPERATING GUIDE FOR THE MAN IN A HURRY*, tune in a number of AM and FM stations and determine whether or not the antennas are adequate for your locality. If they are not, the *ACCESSORIES* section contains pointers on improving AM and FM reception.

## **OPERATING GUIDE FOR THE MAN IN A HURRY**

This section describes your console's controls and contains complete information on how to use them. Please note that the controls are called out in Figure 1 and described in the order in which you would normally operate them. Use the first six items as a handy step-by-step guide for the basic operations (turning on the unit, selecting the desired program source, operating mode, speakers, and—when listening to AM or FM—tuning to the desired station). Once you have become familiar with these operations, you can experiment with the remaining controls and adjust them to suit your personal tastes and listening conditions. You'll find that, in a very short time, you will have mastered operation of the unit.

### **1 AUTO SHUTOFF SWITCH**

This switch determines whether you or the Automatic Turntable will

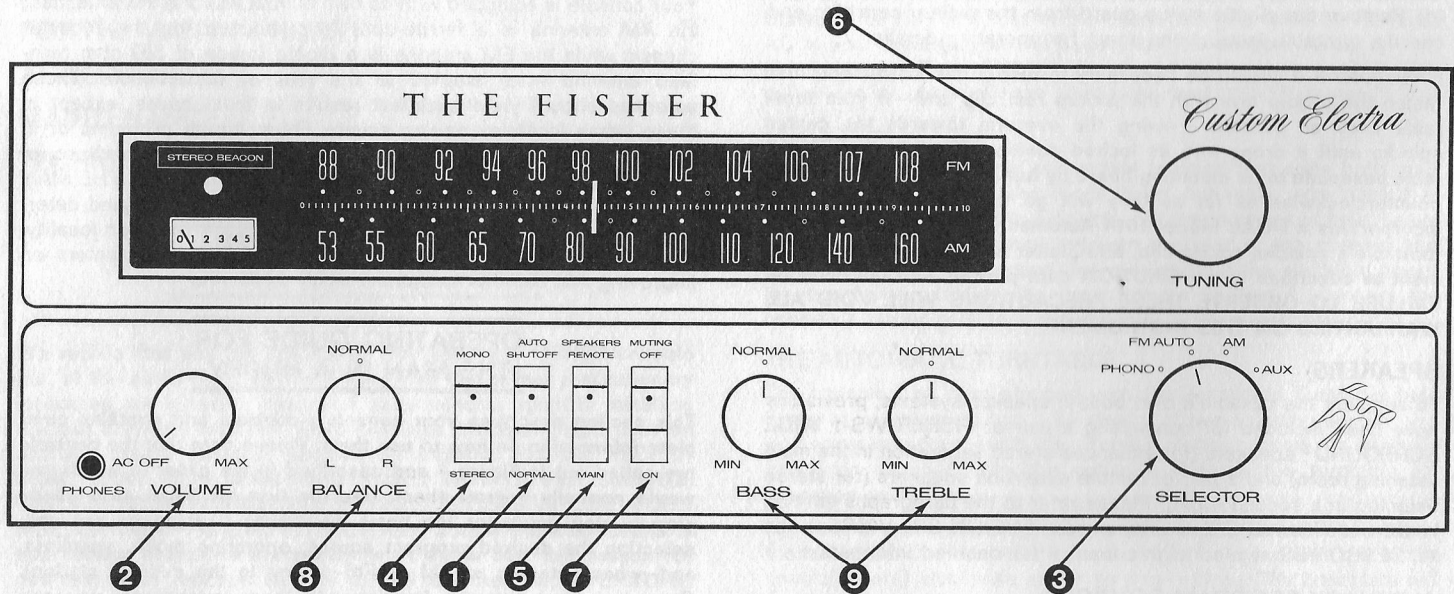


Figure 1. Control Panel of the Console

turn on and shut off the entire unit. When playing phonograph records on the console's built-in Automatic Turntable (SELECTOR switch set to PHONO) you may want to set this switch to AUTO SHUTOFF so that the turntable assumes control; this feature permits you to leave the console unattended when playing records. For all *other* program sources (FM AUTO, AM, AUX), set this switch to NORMAL so that you control power to the entire unit.

## 2 AC POWER SWITCH AND VOLUME CONTROL

Turn this control clockwise (towards MAX) until it clicks. If the AUTO SHUTOFF switch (item 1) is set to NORMAL, the tuning dial, tuning meter, and pilot lamp (at the base of the console) will light immediately to indicate that the entire unit is on. If, **however, the AUTO SHUTOFF switch is set to AUTO SHUTOFF, the unit will not turn on until you start the Automatic Turntable and will turn off automatically after the turntable has played the last record in a stack.**

Once you have selected the program source, mode, and speakers of your choice (items 3 through 5), turn the VOLUME control further clockwise to adjust speaker volume levels to suit your personal tastes. To shut off the entire unit manually, turn the control to AC OFF until it clicks.

**NOTE:** To compensate for certain inadequacies of the human ear at low listening levels, this control incorporates a loudness-compensation circuit that automatically emphasizes bass and treble by a predetermined amount at low VOLUME settings, thus restoring apparent tonal balance. At higher VOLUME settings, the effect of this circuit tapers off gradually.

## 3 SELECTOR SWITCH

Select the desired program source with this switch. Its positions and their functions are as follows:

**PHONO**—Selects phonograph records\* played on the built-in Automatic Turntable. Standard RIAA tonal compensation (equalization) for modern stereo and mono recordings is automatically provided in this position.

**\*CAUTION: Do not attempt to play 78-RPM records on this turntable with the stylus supplied; objectionable distortion will result. For information on ordering and installing an optional 78-RPM stylus, please refer to the paragraph entitled REPLACING THE PHONOGRAPH STYLUS in the MAINTENANCE section of this manual.**

**FM AUTO**—Selects FM programs (mono and stereo) transmitted on the 88- to 108-MHz (Mc) FM-broadcast band. Refer to item 6 for tuning instructions.

**AM**—Selects AM programs (mono only) transmitted on the 510- to 1630-kHz (kc) AM standard-broadcast band. Refer to item 6 for tuning instructions.

**AUX**—Selects any stereo or mono auxiliary program source—tape recorder or tape player, short- or long-wave tuner, television receiver, sound-movie projector, etc.—connected to the AUX IN jacks at the rear of the unit. Please read the **ACCESSORIES** section of this manual before connecting any such auxiliary devices.

**NOTE:** While listening to the selected program source, you may also record it on an external tape recorder or deck connected to the RCDR OUT jacks at the rear of the console. Please read the **ACCESSORIES** section before attempting to make tape recordings from this unit.

## 4 MONO/STEREO SWITCH

This switch determines whether you will hear mono or stereo sound from the speakers. **As a general rule of thumb, when listening to FM broadcasts (either mono or stereo), set this switch to STEREO; this will ensure that you actually hear stereo sound when tuned to a station broadcasting in stereo. (In almost all cases, the FM-tuner circuits will automatically switch between mono and stereo reception for you.)** For the rare exception to this rule, refer to the paragraph entitled **TUNING** (item 6).

For *other* program sources such as PHONO or AUX, set this switch to STEREO only if the program material is stereophonic; for *mono-phonics* records or auxiliary program sources, set the switch to

MONO. This will ensure that you always hear the program material through both speakers; it will also minimize objectionable rumble or distortion from older mono records. For AM broadcasts, the program material will always be heard through both speakers, whether the switch is set to MONO or STEREO.

## 5 SPEAKERS SWITCH

To hear the selected program source through the unit's built-in speakers, set this switch to MAIN. To hear the same material through remote extension speakers (connected to the REMOTE SPKR terminals at the rear of the unit), set the switch to REMOTE. If there are no extension speakers presently connected to the unit, you may use the REMOTE position as a convenient means of silencing the unit momentarily without shutting it off or changing the VOLUME control setting. For further information on using remote speakers—as well as headphones—with this unit, refer to the ACCESSORIES section of this manual.

## 6 TUNING

Turn the TUNING control slowly until the dial pointer indicates the station of your choice (either AM or FM, depending on which band you selected). The large scales on the dial glass indicate the actual frequencies of the stations in the 88- to 108-MHz (Mc) FM band and the 510- to 1630-kHz (kc) AM standard-broadcast band; the small (logging) scale shows numbers ranging from 1 through 100 and can be used in place of either large scale. Use whichever scale is more convenient for you, but always tune for the maximum tuning-meter indication obtainable for each station to obtain clear, undistorted reception (and, in the case of FM-stereo broadcasts, maximum audible stereo separation). The actual value of the meter reading in each case will depend on the signal strength of the station.

If you have followed our rule of thumb in item 4 and set the MONO/STEREO switch to STEREO whenever listening to FM broadcasts, the tuner will automatically switch between mono and stereo reception for you as you tune from station to station; the STEREO BEACON lamp (directly above the tuning meter) will light

whenever you come to a station broadcasting in stereo.

This lamp should remain lighted so long as the station you're listening to keeps broadcasting in stereo. If the lamp starts to blink on and off, or if the program sounds noisy, distorted, or erratic in quality, this is an indication that the signal is weak or marred by transmission or reception problems. In this case, set the MONO/STEREO switch to MONO; the blinking and interference should stop and you can listen to the program monophonically. In the event that you encounter this problem with a number of stereo stations, the chances are that you live in a locality that may require a different antenna for reliable reception; please refer to the paragraphs entitled FM ANTENNAS in the ACCESSORIES section of this manual. Similarly, if you encounter consistently poor reception on the AM band, refer to AM ANTENNAS in the ACCESSORIES section.

**NOTE:** In some rare cases, you may be so close to an FM transmitter that the signal overloads the FM-tuner section of the receiver, causing the station to be received at more than one point on the dial. In such cases, refer to FM ANTENNAS in the ACCESSORIES section.

## 7 MUTING SWITCH

This switch is effective on FM only; set it ON to silence between-station noise (hiss and static) or extremely weak stations. (These stations are difficult to tune in, almost impossible to listen to in stereo, and do not provide the noise-free reception possible only with stronger signals.) However, should you want to search for and listen to such stations—even under high noise conditions—set the switch OFF.

## 8 BALANCE CONTROL

Adjust this control so that the volume levels from both speakers sound about equal from your listening position. Ideally, this should occur with the control set at NORMAL. However, imbalances in the program source, unusual room layout, or your position with respect to the speakers may make it necessary to turn the control either towards R (to increase the sound level on your right and decrease



the sound level on your left) or towards L (to increase the left and decrease the right). At the extreme settings of this control, only one speaker or the other will be heard. *Do not use the BALANCE control as a substitute for the VOLUME control.*

## 9 BASS AND TREBLE CONTROLS

These controls affect the tonal quality of the music and speech to which you are listening. *In most cases, keep them set at or near NORMAL*; under normal conditions—especially with modern recordings and FM broadcasts—these settings should reproduce sound very close to that of the original live performance. Sometimes, tonal quality may be altered by a number of factors at the recording or broadcasting studio (unusual microphone placement, non-standard bass and treble equalization, restricted-fidelity equipment, etc.) or in the home by the acoustical properties of certain extension speakers, headphones, and listening rooms. In such cases, adjust these controls for the sound that seems natural and pleasing to you as follows:

The BASS control affects the relative prominence of the lower-pitch tones such as those of the bass viol or tuba or the low pedal notes of the organ. To increase bass, turn the control towards MAX; to reduce bass, turn the control towards MIN.

The TREBLE control, in turn, affects the relative prominence of the higher-pitch tones such as the audible overtones of the violin, piccolo, or cymbal. To increase treble, turn the control towards MAX; to reduce treble, turn the control towards MIN.

## ACCESSORIES

### FM ANTENNAS

The built-in dipole antenna is connected to the receiver's FM NORM terminals at the rear of the console (Figure 2). If listening tests reveal that the receiver is being overloaded by a nearby FM transmitter or that the built-in antenna is not adequate for your locality, reception can be greatly improved by changing antenna connections or by replacing the antenna as described in the following paragraphs:

**ELIMINATING OR REDUCING OVERLOAD**—If you are located very close to an FM transmitter, the signal might be so strong that it overloads the FM-tuner section of the receiver, causing the station to be received at more points on the dial than just its assigned frequency. In such rare cases, turn off the console temporarily and switch the antenna spade lugs at the rear of the console to the two terminals marked FM LOC; if necessary, bend the lugs up so that they do not touch other terminals or the chassis. If this has an adverse effect on reception of many normal or weak-signal stations, reconnect the antenna to the FM NORM terminals.

**REDUCING MULTIPATH INTERFERENCE** — In some strong-signal localities, pronounced signal reflections from surrounding buildings, towers, or hills may cause severe multipath interference. (This phenomenon is similar to 'ghosts' encountered in TV pictures and can cause objectionable distortion and reduced left-right separation in FM-stereo broadcasts.) In such cases, it may be necessary to disconnect the built-in antenna completely and replace it with an adjustable, directional indoor antenna that can be rotated for best reception of the desired signal and maximum rejection of the unwanted reflections. This type of antenna, often referred to as the 'rabbit-ears' or telescoping-dipole type, is usually available commercially in localities where such problems exist. When connecting such an antenna, use the FM NORM terminals first; if listening tests reveal an overload problem, connect the antenna to the FM LOC terminals as described in the previous paragraph. In either case, make sure that the antenna lugs or wires do not touch other terminals or the chassis.

**IMPROVING FRINGE-AREA RECEPTION AND REDUCING ELECTRICAL INTERFERENCE**—In weak-signal 'fringe' areas, an outdoor antenna may be necessary, especially for receiving FM-stereo broadcasts. Though an omnidirectional antenna may sometimes be satisfactory, directional antenna arrays are usually preferable. In localities where FM broadcast signals come from several different directions, a remotely-controlled antenna rotator is a useful accessory with a directional array. If you already have an outdoor VHF

television antenna, it may be suitable for FM reception as well. Connect the TV antenna temporarily to the console's FM NORM terminals—if the results are satisfactory, obtain a two-set coupler so that you can operate both the TV set and your FISHER console from the antenna simultaneously. In any event, make sure that the antenna lugs or wires do not touch other terminals or the chassis.

If your outdoor antenna is located near a busy thoroughfare or in an industrial area, and the antenna is connected to the console with conventional 300-ohm twin lead, interference from automotive ignition systems or electrical machinery may radiate into the long lead-in, causing objectionable noises. If this is true in your case, replace the conventional lead-in with *shielded* 300-ohm twin-lead (available at major electronic parts dealers). Connect the two signal conductors to the console's FM NORM terminals in the usual manner; connect the shield to the hex-head machine screw just to the left of these terminals.

## AM ANTENNAS

If listening tests reveal that the built-in ferrite-loop antenna is not adequate for AM reception in your locality, connect 10 to 20 feet of flexible, single-conductor wire to the AM terminal at the rear of the console (Figure 2). Run the wire in a straight line along a *non-metallic* baseboard or under a rug; in some cases, reception may be improved even further by draping the antenna wire out a window.

## WIDE-SURROUND® SPEAKERS

To enhance stereo separation in your main listening room, you may connect a pair of FISHER WS-1 Wide-Surround® speakers to the console. These speakers—working in conjunction with the console's built-in speaker systems—will augment the stereo sound pattern to a startling degree; they are equally effective in monophonic operation as well. Further details about the WS-1 may be obtained from your dealer.

**NOTE:** To prevent any confusion when placing and connecting the speakers, use the following definitions: the left speaker is always

the one to your left as viewed from your listening position; conversely, the right speaker is always the one to your right. Proceed as follows:

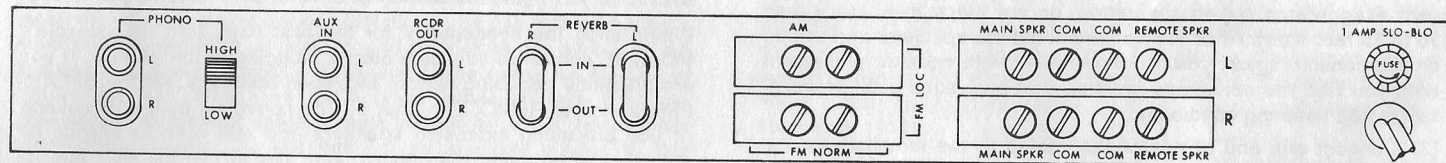
- (1) Turn off the console and disconnect its power cord from the electrical outlet.
- (2) Place the WS-1 speakers to the right and left of the console as described in the WS-1 Operating Instructions.
- (3) There are two WS-1 jacks (marked L and R respectively) bracket-mounted at the rear of the console (Figure 2). Connect the plug on the left speaker's cable to the jack marked L and the plug on the right speaker's cable to the jack marked R.
- (4) Connect the console's power cord to the electrical outlet and turn on the unit.

## EXTENSION SPEAKERS

The REMOTE SPKR terminals at the rear of the console (Figure 2) provide convenient means for connecting a pair of remote extension speakers. This arrangement will enable you to enjoy stereophonic sound in another room of your home whenever you set the SPEAKERS switch on the control panel to REMOTE.

**CAUTION:** Make sure that each extension speaker has a rated impedance of not less than 4 ohms; a lower value may cause overloading. (Many speakers have their rated impedances marked on—or near—their connecting terminals; if you are in doubt about the impedance of your speakers, consult the dealer from whom they were purchased.)

To connect the extension speakers to the console, you will need a pair of two-conductor cables cut to the desired length. If the speakers are each 50 feet or less from the console, use ordinary lamp cord; for longer distances, use heavy-duty cable. Strip about half an inch of insulation from both ends of each conductor and twist the bare wire to gather up loose strands. **To prevent any confusion when placing and connecting the speakers, use the following definitions: the left speaker is always the one to your left as viewed from**



INS 427

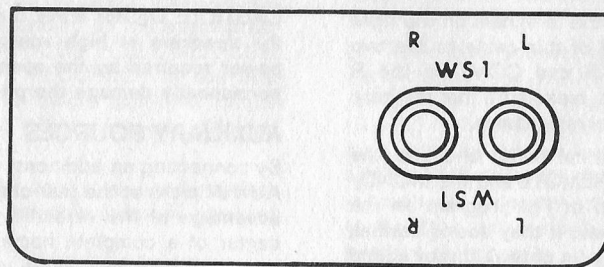


Figure 2. Bottom-Rear Panel of Receiver and WS-1 Bracket.

**your listening position; conversely, the right speaker is always the one to your right.** Proceed as follows:

- (1) Turn off the console and disconnect its power cord from the electrical outlet.
- (2) Initially, place both speakers in the remote listening area against or next to a wall so that they are equidistant from your listening position, facing you, and as close as possible to ear level. To prevent exaggerated stereo separation, do not place them more than 10 to 15 feet apart. After you've connected the speakers and turned on the console again, you can experiment with speaker placement until you find the permanent location that best suits your personal tastes and listening conditions.
- (3) Connect one end of one of the cables to the terminals on the left extension speaker; connect the other end of this cable to the two unused terminals (marked REMOTE SPKR and COM) on the L terminal strip of the receiver chassis. In both cases, make sure that the bare wires do not touch each other or the chassis.
- (4) Connect one end of the *other* cable to the terminals on the right extension speaker; connect the other end of this cable to the two unused terminals (marked REMOTE SPKR and COM) on the R terminal strip of the receiver. In both cases, make sure that the bare wires do not touch each other or the receiver chassis.
- (5) Connect the power cord to the electrical outlet and turn the console on. Set the SPEAKERS switch to REMOTE and the MONO/STEREO switch to MONO; play a record or FM program on the unit. **Listen carefully to the deep bass tones; if they sound normal, the speakers have been connected properly (in phase). If they sound weak or 'tinny', the speakers are out of phase; in this case, turn off the console and carefully reverse the connections at ONE of the speakers.** Turn on the console again and listen for normal bass response.
- (6) Set the MONO/STEREO switch to STEREO and play a stereo record or FM program on the unit; experiment with speaker placement until you find the permanent location that best suits your

personal tastes and listening conditions.

## HEADPHONES

For private listening from all program sources, you may plug a pair of FISHER headphones (or any other similar high-quality low- or medium-impedance devices) into the PHONES jack on the control panel. FISHER headphones are available from your dealer, who will assist you in the installation of several pairs, should you desire.

When using the headphones for the first time, turn the console's VOLUME control to minimum *before* plugging in the phones. If you are presently not using remote extension speakers, set the SPEAKERS switch to REMOTE to shut off the console's built-in speakers. (If you are using extension speakers and still wish to silence all speakers when using the phones, your dealer can install a special external switch for this purpose.) Readjust the VOLUME control for a comfortable *headphone* listening level and use this control setting as a reference for future use.

**CAUTION: Do not leave the headphones plugged in when playing the speakers at high volume levels; the large amounts of audio power required by the speakers at these levels can overload and permanently damage the phones.**

## AUXILIARY SOURCES

By connecting an additional *high-level* stereo or mono source to the AUX IN jacks at the rear of the console (Figure 2), you may take full advantage of the versatility of this unit and use it as the control center of a complete home entertainment system; in most cases, there will be a noticeable improvement in the sound quality of the auxiliary source. The following are examples of the types of devices that can be connected to these jacks:

- Tape recorders or tape decks (for playing back recordings previously made from this unit or for playing prerecorded tapes).
- Tape players *with built-in preamplifiers* (for playing prerecorded tapes only).

- AM short-wave or AM-multiband (medium-wave, long-wave, short-wave) tuners or receivers.
- Audio outputs of television receivers.
- Sound-movie projectors.
- Electronic organs.

**CAUTION:** If the auxiliary device does not have high-level output jacks intended specifically for use with external high-fidelity equipment, consult a qualified service technician; he can make the simple modifications required as well as add provisions for switching off the auxiliary device's built-in speakers. If the set is an AC/DC or 'transformerless' type have the service technician take adequate precautions to prevent shock or hum caused by a 'hot' (electrically unisolated) chassis. Do not connect an auxiliary device to this console if you are in doubt about the safety characteristics of the device.

(1) If the auxiliary device is stereophonic, connect its left-channel (A or 1) and right-channel (B or 2) high-level outputs to the console's AUX IN L and R jacks, respectively. Depending on the specific device, these outputs may be marked CATHODE FOLLOWER, LINE OUTPUT, EXTERNAL AMPLIFIER, TAPE RECORDER or the like. If the device is monophonic, connect its single high-level output to the console's AUX IN L jack only. In either case, use shielded cable for the connections.

(2) Connect the auxiliary device's power cord to a standard electrical outlet; keep this cord as far as possible from all shielded cables that connect to the console.

(3) Set the SELECTOR switch on the console's control panel to AUX. If the auxiliary device is stereophonic, set the MONO/STEREO switch to STEREO; if the device is monophonic, set the switch to MONO. Turn on the auxiliary device and adjust the console's VOLUME control for a comfortable listening level.

(4) Turn the console's SELECTOR switch back and forth between AUX and FM AUTO and listen to the relative volume levels of the

two program sources—they should be approximately equal *without you having to readjust the VOLUME control each time you switch*. If the auxiliary device has any volume or level controls that affect auxiliary volume *as heard through the console*, adjust them, if necessary, to equalize the volume levels. Adjust all other controls on the console in the usual manner.

**NOTE:** If the auxiliary device is a stereophonic tape recorder, deck, or player and you wish to listen to a *monophonic* tape, the tape machine must have track-selection facilities; otherwise, an external track-selector switch must be used. To obtain a diagram of such a switch, write to: Mr. Richard Hamilton, Customer Relations Department, Fisher Radio Corporation, 11-40 45 Road, Long Island City, New York 11101.

## MAKING TAPE RECORDINGS FROM THIS UNIT

Your FISHER console has provisions for connecting a tape recorder or tape deck (stereo or mono) so that you may record any program source to which you are listening. Use Figure 2 as a guide and proceed as follows:

(1) If the tape recorder or deck is equipped to make stereo recordings, connect the RCDR OUT L and R jacks (at the rear of the console) to the tape unit's left-channel (A or 1) and right-channel (B or 2) *high-level* inputs, respectively. Depending on your specific tape unit, these high-level inputs may be marked HIGH LEVEL, LINE INPUT, PHONO, P.U., GRAM or the like. If the tape unit is monophonic, connect only the RCDR OUT L jack on the console to the tape unit's single high-level input. **In either case, do not connect the console to any input on the tape unit marked MIC., MICROPHONE, RADIO or DIODE; the recordings will be severely overloaded and distorted.**

(2) Connect the tape unit's power cord to a standard electrical outlet; keep this cord as far as possible from all shielded cables that connect to the console.

(3) As usual, choose the desired program source with the console's SELECTOR switch; *whatever source you listen to is the source that*

will be recorded. If both the program source and the tape unit are stereophonic and you intend to make a stereo recording, make sure that the console's MONO/STEREO switch is set to STEREO. On the other hand, if the program source or tape unit (or both) are monophonic, always set the MONO/STEREO switch to MONO while recording; this will provide a full, blended monophonic signal to the recorder as well as permit you to hear the program source through both speakers.

(4) Follow the Instruction Manual included with the tape unit to make the recording. The SELECTOR and MONO/STEREO switches are the only controls on the console that have any effect on the recording; you may therefore adjust all other controls to suit your personal tastes and listening conditions as you would during normal operation. To play this—or any other—tape recording through the console, refer to the paragraph entitled *AUXILIARY SOURCES*.

### **DYNAMIC SPACEEXPANDER®**

The FISHER Model K-10 DYNAMIC SPACEEXPANDER® is a unique reverberation device that can be used in conjunction with this console to recreate the acoustical environment of a large concert hall or theater in your listening room. Further details about the SPACEEXPANDER may be obtained at your dealer. To connect a SPACEEXPANDER to this console, proceed as follows:

(1) Install the SPACEEXPANDER in a suitable location as described in its Instruction Manual.

(2) Remove the jumper wires that connect each set of REVERB IN and OUT jacks together at the rear of the console (Figure 2), but keep them for reuse in case you decide to disconnect the SPACEEXPANDER in the future. *Either these wires or the SPACEEXPANDER must be connected to the IN and OUT jacks; otherwise, all program sources played through the console will be silenced.*

(3) Connect the console's left-channel (L) OUT jack to the SPACEEXPANDER'S channel A OUTPUT jack.

(4) Connect the console's right-channel (R) OUT jack to the SPACEEXPANDER's channel B OR C OUTPUT jack.

(5) Connect the console's left-channel (L) IN jack to one of the channel A INPUTS on the SPACEEXPANDER.

(6) Connect the console's right-channel (R) IN jack to one of the channel B INPUTS on the SPACEEXPANDER.

(7) Operate the SPACEEXPANDER as described in its Instruction Manual; adjust all console controls in the usual manner to suit your personal tastes and listening conditions.

**NOTE:** If you are recording from the console while using the SPACEEXPANDER, the completed recording will also contain re-verberation.

## **MAINTENANCE**

**CAUTION:** Turn off the unit and disconnect its power cord from the electrical outlet before performing any of the following maintenance or replacement procedures.

### **PRESERVING THE CONSOLE'S FINISH**

The fine-grain surfaces and smooth satin finish of your new FISHER console are indications of the care and craftsmanship that have gone into its construction. To maintain their rich highlights and deep luster for years to come, we recommend that you dust all wood surfaces regularly with a soft, clean, lint-free cloth and that—when polishing—you use a high-quality cream-type polish such as OZ or GUARDSMAN.

### **CLEANING THE CONTROL PANEL**

The beautiful chrome-plated borders of the control panel as well as the inserts inside these borders will retain their color and brilliance permanently. However, it is possible that, over a period of time, a film from atmospheric contamination may dull the surfaces. Simply use a soft, *freshly-laundered* cloth dampened with *plain*

lukewarm water and the panel will look new again. **Do not use any household or industrial cleaning agents or any cloth that has been used to apply such agents.**

### CLEANING THE DIAL GLASS

- (1) Make certain that the unit is turned off and that its power cord is disconnected from the electrical outlet.
- (2) Remove all control knobs from the control panel by grasping each knob in turn and pulling it toward you *gently*. **Do not remove the four rocker switches.**
- (3) Remove the hex nuts (on the control-shaft bushings) that hold the control panel to the rest of the chassis; lift off the panel.
- (4) There are two foam-cushion strips fastened to the retaining clips at either end of the dial glass; detach both strips.
- (5) Loosen (do not remove) the screws that hold the dial-glass retaining clips; swing the clips aside and lift off the dial glass. Because the glass is held from behind by adhesive rubber strips, it may be necessary to apply a gentle prying force at the ends.
- (6) Remove dust with a soft, dry cloth. If you wish to clean more thoroughly, use a mild soap-and-water solution only; a stronger cleaning agent may damage the markings on the glass.
- (7) Replace the dial glass. Make certain to reset it in its original position by placing it firmly against the *lower left-hand* corner of the plastic end frame. Swing the retaining clips back into place and tighten the retaining-clip screws.
- (8) Replace the foam-cushion strips, control panel, hex nuts, and control knobs by reversing the procedures in steps 2 through 4.

### REPLACING DIAL LAMPS

- (1) Make certain that the unit is turned off and that its power cord is disconnected from the electrical outlet.
- (2) Remove all control knobs from the control panel by grasping each knob in turn and pulling it towards you *gently*. **Do not remove the four rocker switches.**

(3) Remove the hex nuts (on the control-shaft bushings) that hold the control panel to the rest of the chassis; lift off the panel.

(4) The tubular dial lamps are spring-clip mounted at either end of the dial glass. To remove either lamp, gently pull it out of its clip mount. Replace it with the new dial lamp (Part Number 150441-1\*) making certain that the *unpainted* side of the lamp faces *towards* the edge of the dial glass.

(5) Replace the control panel, hex nuts, and control knobs by reversing the procedures given in steps 2 and 3.

**\* NOTE: Replacement lamps may be ordered from your authorized FISHER dealer or from: Parts Department, Fisher Radio Corporation, 11-40 45 Road, Long Island City, New York 11101.**

### SERVICING THE TUNING-METER, STEREO BEACON, AND PILOT LAMPS

The tuning-meter and STEREO BEACON lamps and the pilot lamp at the base of the console are long-life devices that should not require replacement in normal use. However, in the rare event that they should, do not attempt to replace them yourself; they *are not* customer serviceable. Consult your dealer or a qualified technician for further information or service.

### REPLACING THE POWER FUSE

The AC power input of the receiver chassis in this console is fused to protect it against abnormal power-line surges and other adverse conditions sometimes encountered by electronic equipment. If the unit suddenly becomes completely inoperative (i.e., all dial, meter, and console lamps go out and all speakers are silent at all settings of SELECTOR, AUTO SHUTOFF, and SPEAKERS switches and VOLUME control), this is an indication that the power fuse may have blown. This fuse is in the black receptacle marked 1 AMP SLO-BLO on the bottom panel of the receiver chassis and is accessible from the rear of the console; to replace it, proceed as follows:

- (1) Make certain that the unit is turned off and that its power cord is disconnected from the electrical outlet.
- (2) Push the fuseholder cap in and turn it *counterclockwise* until it disengages; extract it from the receptacle and remove the fuse from the cap.
- (3) The spare fuse supplied with the set has a short spiral coil of wire inside its glass envelope. (This coil identifies it as being a slow-blow type.) One of its metal ends will be marked **1 A, 125 V**. Use only this fuse (or an exact commercial equivalent) as a replacement for the blown power fuse.
- (4) Insert the replacement fuse in the fuse cap. Line up the flanges on the cap with the notches inside the receptacle; push the cap and fuse into the receptacle and turn the cap *clockwise* until it engages. Plug the power cord into the electrical outlet and turn on the unit.

**CAUTION:** If the receiver still does not operate or if the replacement fuse blows immediately, do not attempt to replace the fuse again. Consult your dealer or a qualified technician.

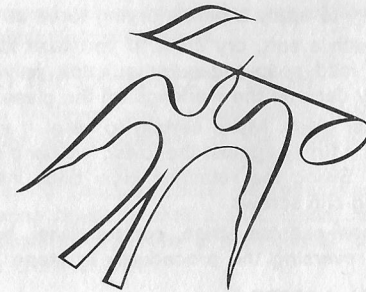
### REPLACING THE PHONOGRAPH STYLUS

- (1) Make certain that the unit is turned off.
- (2) The removable pickup head of your turntable may be unlocked from the pickup arm in one of three ways:
  - (a) If there is a ribbed or fluted collar directly *behind* the head, turn this collar clockwise (as viewed from the front) and *gently* pull the head away from the arm.
  - (b) If there is a circular slotted disc directly *above* the head, turn this disc counterclockwise (with a coin or screwdriver) and slide out the head.
  - (c) If the pickup head has neither a collar nor a disc, push the fingerlift at the *side* of the head away from you and slide out the head.
- (3) Hold the pickup head upside down (stylus pointing up). The

stylus assembly is an integral part of the color-coded plastic block that surrounds it; note the color and *gently* pull the plastic block away from the main body of the pickup cartridge. Replace it with either an exact-replacement LP-Stereo stylus (red block—FISHER Part No. G3507; gold block without brush—Part No. G3506; gold block with brush—Part No. G3511)\* or a 78-RPM stylus (blue block—Part No. G3509)\* as required.

- (4) Reposition the pickup head on the arm and reverse the appropriate procedure in step 2 to lock it in place. Turn on the unit.

**\* NOTE:** Replacement styli may be ordered from Parts Department, Fisher Radio Corporation, 11-40 45 Road, Long Island City, New York 11101.





## TECHNICAL DATA

<b>Music Power Output (IHF standard, both channels)</b>	45 watts	<b>FM Sensitivity (IHF)</b>	2.5 $\mu$ V
<b>Instantaneous Peak Power Output</b>	90 watts	<b>AM Sensitivity</b>	10 $\mu$ V
<b>Total Harmonic Distortion</b>		<b>FM-Multiplex Stereo Separation (at 400 Hz)</b>	Better than 30 db
<b>At full rated output</b>	Less than 1.0%	<b>Speaker Complement (each channel)</b>	One 8" woofer One 5" midrange unit One 3" tweeter
<b>At normal listening levels</b>	Less than 0.5%	<b>Automatic Turntable</b>	DUAL
<b>Frequency Response</b>	Uniform throughout audible range as an integrated system	<b>Cartridge</b>	Pickering V-15
<b>Input Sensitivity for Rated Output</b>		<b>Power Consumption at Rated Output</b>	60 watts, 80 VA; turntable extra
<b>PHONO</b>	4.5 mV		
<b>AUX IN</b>	370 mV		

Hertz (Hz), Kilohertz (kHz), and Megahertz (MHz) have been used in this material to conform to the standards established by the IEEE. They replace cycles per second (cps), kilocycles (kc), and Megacycles (Mc), respectively.

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

# LOGGING CHART

FM			AM	
STATION	MPX	LOGGING SCALE NUMBER	STATION	LOGGING SCALE NUMBER

NOTE: This chart may be used as a handy guide for quick tuning to the stations in your area.

# WARRANTY TO OWNER

The warranty on a product reflects the confidence of its maker in the quality of materials and workmanship that go into it. The unique FISHER warranty protects your investment. Please read it carefully.

All FISHER equipment is fully guaranteed to the original using purchaser against defects in materials and workmanship, subject to the following:

All parts are guaranteed for two years, except tubes, record changers and tape recorders which are guaranteed for one year. Any defective part will be repaired or replaced without charge, including parts of record changers and tape recorders. For the first ninety days there is no charge for warranty labor.

All service on FISHER Radio Phonographs will be provided by the FISHER franchised dealer from whom the unit was purchased.

The warranty is void if our inspection shows that the equipment has been tampered with, or installed, altered or repaired at variance with factory-designated procedures, subjected to negligence, misuse or accident, damaged by excessive line voltage or insufficient ventilation, or had its serial number altered, defaced or removed.

This warranty is in lieu of all other warranties, express or implied, and all other obligations or liabilities on the part of FISHER. No person, including any dealer, agent or representative of FISHER, is authorized to assume any liability for FISHER except to refer purchasers to this warranty.

This warranty takes effect only if the warranty-registration card has been fully and properly filled out and returned to FISHER RADIO CORPORATION within ten (10) days from the date of purchase.

## **Be Sure to Register Your FISHER Equipment and Enjoy the Following Advantages:**

- Full benefits of the FISHER warranty. ■ Prompt handling of correspondence with our Customer Service Department. ■ Assistance in finding your equipment or establishing its value in case of loss through theft, fire, etc.
- News bulletins on important developments in high fidelity equipment.

**FOR WARRANTY SERVICE, CONSULT YOUR DEALER**



## THE MAN BEHIND THE PRODUCT

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

Twenty-seven years ago, Avery Fisher introduced America's first high fidelity radio-phonograph. That instrument attained instant recognition, for it opened a new era in the faithful reproduction of records and broadcasts. Some of its features were so basic that they are used in all high fidelity equipment to this day. One of these models is now in the permanent collection of the Smithsonian Institution as an example of the earliest high fidelity instruments commercially available in this country.

The engineering achievements of Avery Fisher and the world-wide reputation of his products have been the subject of descriptive and biographical articles in *Fortune*, *Time*, *Pageant*, *The New York Times*, *Life*, *Coronet*, *High Fidelity*, *Esquire*, *The Atlantic*, and other publications. Benefit concerts for the National Symphony Orchestra in Washington and the Philadelphia Orchestra, demonstrating recording techniques, and the great advances in the art of music reproduction, used FISHER high fidelity instruments both for recording and playback, to the enthralled audiences. FISHER equipment formed the key part of the high fidelity demonstration at the American National Exposition in Moscow, July 1959. FISHER FM and FM-AM tuners are the most widely used by broadcast stations for monitoring and relay work, and by research organizations—under conditions where absolute reliability and maximum sensitivity are a 'must.'

The FISHER instrument you have just purchased was designed to give you many years of pride and enjoyment. If you should desire information or assistance on the installation or performance of your FISHER, please write directly to Avery Fisher, President, Fisher Radio Corporation, Long Island City 1, New York.