

OPERATING INSTRUCTIONS AND WARRANTY



THE FISHER[®]

Futura[®]

F-5593

Stereophonic Radio-Phonograph

PRICE \$1.00

WORLD LEADER IN STEREOGRAPHIC HIGH FIDELITY

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.

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| <p>1937 First high-fidelity sound systems featuring a beam-power amplifier, inverse feedback, acoustic speaker compartments (infinite baffle and bass reflex) and magnetic cartridges.</p> <p>1937 First exclusively high-fidelity TRF tuner, featuring broad-tuning 20-20,000 cycle fidelity.</p> <p>1937 First two-unit high-fidelity system with separate speaker enclosure.</p> <p>1938 First coaxial speaker system.</p> <p>1938 First high-fidelity tuner with amplified AVC.</p> <p>1939 First dynamic range expander.</p> <p>1939 First 3-way speaker in a high-fidelity system.</p> <p>1939 First center-of-channel tuning indicator.</p> <p>1945 First preamplifier-equalizer with selective phonograph equalization.</p> <p>1948 First dynamic range expander with feedback.</p> <p>1949 First FM-AM tuner with variable AFC.</p> <p>1952 First 50-watt all-triode amplifier.</p> <p>1952 First self-powered master audio control.</p> <p>1953 First self-powered, electronic sharp-cutoff filter, system for high-fidelity use.</p> <p>1953 First universal horn-type speaker enclosure for any room location and any speaker.</p> <p>1953 First FM-AM receiver with a cascode front end.</p> <p>1954 First low-cost electronic mixer-fader.</p> <p>1954 First moderately priced professional FM tuner with two meters.</p> <p>1955 First peak power indicator in high fidelity.</p> <p>1955 First master audio control chassis with five-position mixing facilities.</p> <p>1955 First correctly equalized, direct tape-head preamplifier with self-powered master audio control.</p> <p>1956 First all-transistor preamplifier-equalizer.</p> <p>1956 First dual dynamic limiters in an FM tuner for home use.</p> | <p>1956 First performance monitor in a high-quality amplifier.</p> <p>1956 First FM-AM tuner with two meters.</p> <p>1956 First complete graphic response curve indicator for bass and treble.</p> <p>1957 First GOLDEN CASCODE FM tuner.</p> <p>1957 First MicroRay tuning indicator.</p> <p>1958 First stereophonic radio-phonograph with magnetic stereo cartridge.</p> <p>1959 First high-quality remote control system.</p> <p>1959 First complete stereophonic FM-AM receiver (FM-AM tuner, audio control, 40-watt amplifier).</p> <p>1959 First high-compliance plus high-efficiency Free-Piston loudspeaker system.</p> <p>1960 First to use MicroRay for FM tuning and as a recording audio level indicator.</p> <p>1960 Smithsonian Institution, Washington, D. C., receives for its collection America's first commercially manufactured high-fidelity radio-phonograph, made by Avery Fisher in 1937.</p> <p>1960 First reverberation device for use in high fidelity equipment—the Fisher Dynamic Spacexpander®.</p> <p>1960 First stereo tuner with MicroTune.</p> <p>1960 First front-panel antenna selector switch, 72-300 ohm, Local-Distant positions.</p> <p>1961 First FM-Stereo multiplex adapter with STEREO BEACON and automatic switching, mono to stereo.</p> <p>1961 First complete FM-multiplex stereo receivers.</p> <p>1961 First FM-stereo tuners with STEREO BEACON and STEREO BEAM.</p> <p>1961 First internal switching system to permit immediate tape playback with use of all controls and switches.</p> <p>1962 First simplified-operation control-amplifier, with infrequently used controls behind front-panel cover, yet immediately accessible.</p> | <p>1962 First loudspeaker with eddy-current-damped voice coil.</p> <p>1962 First FM tuner kit with separate d'Arsonval meter for tuning and separate cathode ray stereo broadcast indicator (STEREO BEAM).</p> <p>1963 First power amplifier to use oscilloscope-type frequency-compensated input circuit.</p> <p>1963 First amplifier kit with STRATABALANCE® visual dynamic balancing system.</p> <p>1964 First multiplex adapter with 'flywheel synchronization.' Closely approaches theoretical limit of noise rejection, and of all spurious responses.</p> <p>1964 First FM Stereo Tuner with STEREOSCAN®.</p> <p>1964 First peripherally-driven tweeter with cotton, soft dome.</p> <p>1964 First to use TUNE-O-MATIC® circuitry in an FM tuner.</p> <p>1965 First All-in-One, All-Transistor 4-Gang Front-End.</p> <p>1966 First F.E.T. front-end design with over 40 db of Automatic Gain Control (more than ten times that of the best prior solid-state techniques.)</p> <p>1966 First FM tuner with Automatic FM Antenna Signal Attenuator.</p> <p>1966 First FM tuner to achieve 0.6 db capture ratio—three times better than the best previous achievement.</p> <p>1966 First FM Tuner to use a 10-megacycle-wide Counter Detector, eliminating all distortion for the life of the tuner.</p> <p>1966 First FM Tuner with Clear Signal Indicator.</p> <p>1966 First FM Tuner to incorporate a Power Amplifier Circuit for high-quality, low-impedance headphones.</p> <p>1966 First time-division multiplex circuit to incorporate a Four-Diode Coincidence Circuit.</p> <p>1966 First all-transistor FM Receiver to use Overload Protection.</p> |
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FUTURA®

F-5593

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. Combining old-world artistry in furniture design and construction with the latest advances in electronics and electro-acoustics, it exhibits the superlative FISHER performance long praised by professional musicians and musical connoisseurs.

This unit is a complete high-fidelity stereo system featuring a transistorized AM-FM-stereo receiver, a precision four-speed automatic turntable, and two matched full-range speaker systems. (The receiver itself incorporates several design innovations, among them a revolutionary new FET front end, a multiplex decoder with exclusive STEREO BEACON*, and a power-amplifier section with the unique *Transist-O-Gard*** protective circuit.) The console's inherent flexibility permits you to play AM, FM, and FM-stereo broadcasts, mono and stereo phonograph records of any size and speed, and any one of a wide variety of auxiliary program sources of your choice. Whatever the program, you may shape its sound characteristics to suit your personal tastes and listening conditions with the console's versatile array of controls and switches. These also permit you to listen either through the console's speakers or through optionally connected stereo headphones and extension speakers. A pair of FISHER WS-2 WIDE-SURROUND™ speakers may also be connected for enhanced stereo 'spread', if desired. Special facilities are also included for tape-recording the selected program while listening, for playing *back* the recording (or any prerecorded tape) through the console at your convenience, and for adding reverberation with the FISHER K-10 DYNAMIC SPACEEXPANDER™.

The automatic turntable can be quickly adapted either for auto-

matic operation with a stack of records or for single-play manual operation. In either case, accurate tracking is assured by a counterbalanced transcription-quality tone arm with stylus-pressure and antiskating adjustments and a high-compliance diamond-stylus cartridge. The built-in cue lever may be used to lower the arm to any selected band on the record without risking stylus or record damage. If desired, the turntable will automatically shut off the console after playing the last record in a stack, permitting you to leave the set 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 the 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 set 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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INSTALLING THE CONSOLE

While installation is relatively simple, certain precautions must be observed. PLEASE KEEP IN MIND THAT OUR WARRANTY DOES NOT COVER DAMAGE CAUSED BY MISHANDLING, MISUSE, EXCESSIVE LINE VOLTAGE, OR INSUFFICIENT VENTILATION. We therefore urge you to follow the instructions in this section carefully. You may then proceed directly to *OPERATING THE CONSOLE*.

POWER REQUIREMENTS

This console will operate safely and correctly only on 60-Hz (cps) AC power between 110 and 128 volts. If the voltage in your locality is correct but the line frequency is 50 Hz, your dealer will supply a special adapter pulley to maintain correct turntable speed. If local power is DC or if its voltage is appreciably different than that specified, your dealer or a qualified technician must make the necessary modifications to prevent damage to the set.

LOCATING THE CONSOLE

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 set 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 convenient electrical outlet.

PREPARING THE AUTOMATIC TURNTABLE

(a) Turn the two shipping screws (near the left-rear and right-front corners of the turntable's baseplate) clockwise as far as they will go so that the turntable bounces up and down under hand pressure. This 'floating' suspension isolates the pickup from vibrations and jolts, minimizing 'skipping' and record damage.

(b) Remove the turntable platter from its shipping container and install it as described in the instructions provided with the platter.

(c) Remove the stylus guard (if any) from the pickup cartridge and the rubber bands that hold the pickup (tone) arm in place. Please keep the arm locked in its rest clip when not playing records. (See the turntable instructions for operating details.)

CAUTION: Should it be necessary to reship this set, lock the turntable baseplate to the cabinet by turning the shipping screws counterclockwise as far as they will go. Lock the pickup arm in its rest and remove its counterbalance. Then 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.**

ANTENNAS

Your console's built-in FM antenna (the 'T'-shaped twin-lead dipole at the rear of the set) and AM antenna (a ferrite-core loop

on the receiver chassis) should yield excellent results in most cases. However, certain urban localities with severe FM multipath interference, some steel buildings, or distant 'fringe' areas with weak-signal problems may require external antennas. If you encounter consistently poor FM or AM reception when operating the set, refer to the *ANTENNAS* section.

ACCESSORIES

The *ACCESSORIES* section provides instructions for connecting a pair of WS-2 WIDE-SURROUND® speakers to the console (for enhanced stereo effect) as well as headphones (for private listening) and a pair of remote speakers (for stereo listening in another room). Instructions are also included for connecting an auxiliary program source, a tape recorder, deck, or player, and the FISHER Model K-10 DYNAMIC SPACEEXPANDER® reverberation unit. We recommend, however, that you go on to *OPERATING THE CONSOLE* and familiarize yourself with basic operations before connecting any accessories.

OPERATING THE CONSOLE

This section—keyed to Figure 1—describes the console's controls in the order in which you would normally use them. Follow the instructions in step-by-step sequence and you'll find that, in a very short time, you will have mastered operation of the unit.

① AUTOMATIC SHUTOFF SWITCH

This switch (in the record-player compartment) determines whether you or the automatic turntable will control power to the console. **When playing program sources other than records, keep the switch OFF so that you can turn on and shut off the set without having to operate the turntable.** Occasionally, when playing records, you may want the turntable to shut off the set after

it has played the last record in a stack. In such cases, set the switch ON, *but remember to set it OFF again when playing any other program source.*

② AC POWER SWITCH AND VOLUME CONTROL

Turn this control clockwise towards 10 until it clicks. If the AUTOMATIC SHUTOFF switch (item 1) is OFF, the tuning dial and the pilot lamp near the base of the console will light immediately to indicate that the set is on. (If, however, the AUTOMATIC SHUTOFF switch is ON, the set will not turn on until you start the automatic turntable and will shut off automatically after the turntable has played the last record in a stack.) After selecting the program source you want (item 3), adjust the VOLUME control for a comfortable listening level. To shut off the entire set manually, turn the control to AC OFF.

This control incorporates a special 'loudness' circuit that prevents apparent 'thinning out' of music and speech at low VOLUME settings by automatically emphasizing low- and high-pitched tones. This overcomes the ear's naturally reduced sensitivity to such tones at low listening levels. At normal and high VOLUME settings, the emphasis tapers off gradually.

③ SELECTOR SWITCH

Select the program source you want (except tape; covered in item 4) by setting this switch to the appropriate position:

PHONO—to play phonograph records on the console's automatic turntable. *Do not 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, refer to *REPLACING THE PHONOGRAPH STYLUS* in the *MAINTENANCE* section of this manual.)

FM AUTO—to listen to radio programs on the FM-broadcast band (88-108 MHz). Broadcasts in this band are high fidelity (and, in

many cases, stereophonic) and are relatively immune to natural and man-made electrical noise. They are therefore widely used for symphonic concerts, operas, and other musical and cultural programs. Refer to item 7 for FM (and AM) tuning instructions.

AM—to listen to radio programs on the AM standard-broadcast band (510-1630 kHz). Programs in this band are monophonic only and consist chiefly of news, sports, and popular music.

AUX—to play a stereo or mono auxiliary device (short-wave or multiband tuner, TV set, sound-movie projector, etc.) through the console. Refer to the *ACCESSORIES* section before connecting any such devices.

NOTE: While listening to the selected program source, you may simultaneously record it on an external tape recorder or deck connected to the console. Refer to the *ACCESSORIES* section.

4 MONITOR SWITCH

Normally, keep this switch OFF; otherwise any program source chosen with the **SELECTOR** switch will be silenced. Set it ON only when *playing or monitoring* tapes from a tape recorder, deck, or player connected to the MON jacks. (Refer to the *ACCESSORIES* section for details.)

5 SPKRS SWITCH

Normally, keep this switch set at **MAIN** to hear the selected program through the console's built-in speakers. If you connect stereo remote speakers to the console, set the switch to **REMOTE** when you want to hear the program through them instead. The **REMOTE** position is also useful for silencing the set when listening through headphones, answering telephone calls, etc. For further information, refer to the *ACCESSORIES* section.

6 MONO/STEREO SWITCH

This switch determines whether you will hear mono or stereo

sound from your speakers or headphones. **When listening to FM broadcasts (either mono or stereo), always keep the switch set at STEREO; in most cases, the set will automatically switch between mono and stereo reproduction for you to match the type of program received.** (The STEREO BEACON lamp at the left of the tuning dial will light whenever the set is in the FM-stereo mode). For the rare exception to this rule, refer to *TUNING*.

When listening to records, tapes, or auxiliary program sources, set the switch to STEREO if the program is stereophonic (so that you actually *hear* stereo sound) **and to MONO if the program is monophonic** (to ensure that you always hear the program through both speakers—though monophonically—and to minimize objectionable rumble from older mono records). **AM broadcasts will always be heard through both speakers, whether the switch is set to MONO or STEREO.**

7 TUNING

Turn the **TUNING** control *slowly* until the dial pointer indicates either the desired station on the appropriate band scale or a coinciding number on the small 0-10 logging scale at the bottom of the dial. Use whichever scale is more convenient, but always tune each station for the highest possible reading on the tuning meter (at the left of the dial) and for clear, undistorted sound and minimum interference from adjacent stations.

If the STEREO BEACON lamp start to blink on and off during an FM-stereo broadcast, or the program sounds noisy, distorted, or erratic in quality, the station signal might be 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 in mono. Should you encounter this problem with many stations, or if you hear symptoms of overload (a strong nearby station appearing at more than one point on the dial and sounding distorted), you may be in a locality that requires a change in the antenna or its connections for

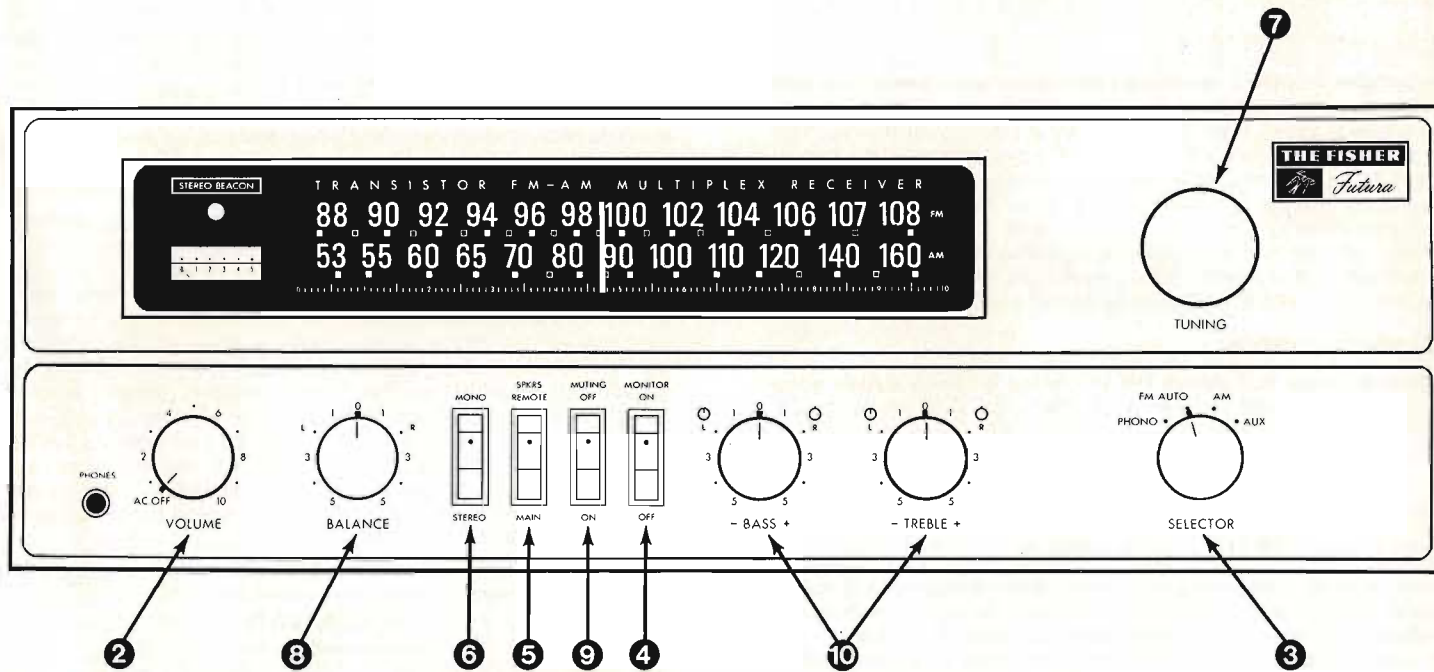


Figure 1. Control Panel of the Console

reliable reception. Please refer to *FM ANTENNAS* in the *ANTENNAS* section of this manual. Similarly, if you encounter consistently poor reception on the AM band, refer to *AM ANTENNAS*.

8 BALANCE CONTROL

Adjust the **BALANCE** control so that the volume levels from both channels sound about equal from your *listening position*. Ideally, this should occur with the control set at its normal mid-position (marked 0). 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 emphasize the sound on your right) or towards L (to emphasize the sound on your left). At the extreme settings of this control, only one channel or the other will be heard. *Do not use the BALANCE control as a substitute for the VOLUME control.*

9 MUTING SWITCH

Normally, keep this switch **ON** to silence between-station noise and extremely weak stations on the **FM band**. (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, set the switch **OFF**.

10 BASS AND TREBLE CONTROLS

In most cases—especially with modern recordings and **FM broadcasts**—keep both controls set at their normal mid-positions (marked 0) for natural tonal quality of speech and music. If, however, a particular record, broadcast, tape, or other program source has poor tone, or if the acoustical properties of your listening room, extension speakers, or headphones affect the sound unnaturally, adjust the controls as follows:

To correct for thinness in the bass-baritone voice, lower-pitched solo or orchestral instruments, low pedal notes of the organ, etc.,

turn the **BASS** control the desired amount towards +. If bass tones sound 'boomy' (or if the program material is marred by rumble, hum, or other low-pitched noise), turn towards —.

If speech sibilants, the soprano voice, and higher-pitched instruments (violin, piccolo, cymbals, etc.) sound 'muddy' or unclear, turn the **TREBLE** control the desired amount towards +. If these sound too harsh or 'wiry' (or if the program is marred by objectionable hiss, scratch, or clicks), turn towards —.

Each of these controls has two parts; the outer segment of the knob for the left channel and the inner segment for the right channel. Normally, both parts of each knob turn together as one unit, but you may adjust the tonal quality of each channel *separately* by holding one part of the knob and turning the other. You may use this feature to compensate for tonal imbalances (when using a different type of remote speaker in each channel) or to create a synthetic 'stereo' effect when playing a mono program. For the latter, simply turn the left-channel **BASS** and the right-channel **TREBLE** all the way to —. The receiver will then act like an electronic crossover, feeding only the higher-pitched tones to the left channel and the lower-pitched tones to the right channel. While this is *not* true stereo, it does produce a directional effect and imparts added clarity to older program material. Please remember to return the controls to their normal settings for conventional mono and stereo reproduction.

ANTENNAS

FM ANTENNAS

The following paragraphs provide instructions for changing the connections of the built-in antenna to reduce overload or—if necessary—for replacing it with other indoor or outdoor antennas to suit local reception conditions:

REDUCING OVERLOAD—If you are very close to a powerful FM station, its signal might be strong enough to overload the receiver's FM-tuner section, causing the station to appear at more than one point on the dial and to sound distorted. In such rare cases, switch the built-in antenna from the two FM NORM terminals to the two FM LOC terminals (Figure 2). Make sure that the antenna lugs do not touch each other, adjacent terminals, or the metal chassis. Tune in several stations including the one that was previously overloaded. If the FM LOC connections adversely affect 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' in TV pictures and can cause distortion, 'fuzziness', and reduced left-right separation in FM-stereo broadcasts.) In such cases, it may be necessary to replace the built-in antenna with a more 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 (known as a 'rabbit-ears' or telescoping-dipole type) is available at most electronic-parts dealers. Disconnect the built-in antenna from the FM NORM terminals (Figure 2) and connect the rabbit-ears antenna in its place, making sure that the antenna lugs or wires do not touch each other, adjacent terminals, or the metal chassis. Tune in several FM stations and rotate the antenna for best reception in each case. If you hear symptoms of overload (a strong, nearby station appearing at more than one point on the dial and sounding distorted), switch the antenna connections to the FM LOC terminals. If this adversely affects reception of many normal or weak-signal stations, reconnect the antenna to the FM NORM terminals.

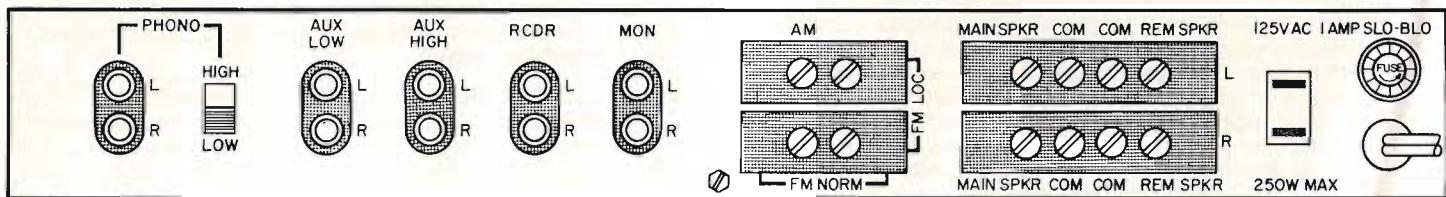
IMPROVING FRINGE-AREA RECEPTION AND REDUCING ELECTRICAL INTERFERENCE—In weak-signal 'fringe' areas, an out-

door antenna may be necessary, especially for effective, noise-free FM-stereo reception. If you already have an outdoor VHF television antenna, and most FM signals in your area come from the same general direction as the TV signals, the antenna may prove suitable for FM reception as well. To test it, disconnect the built-in antenna from the FM NORM terminals (Figure 2) and connect the TV antenna in its place, making sure that the antenna lugs or wires do not touch each other, adjacent terminals, or the metal chassis. If the results are satisfactory, obtain a two-set antenna coupler so that you can operate both the TV set and the console from the antenna simultaneously. If reception is unsatisfactory, you'll have to connect an outdoor antenna designed specifically for FM. Though an omnidirectional antenna may sometimes be satisfactory, directional antenna arrays are usually preferable. In localities where FM signals come from several different directions, a remote-control antenna rotator is a useful accessory with a directional array.

If you live near a busy thoroughfare or industrial area, and the outdoor antenna is connected to the set with conventional 300-ohm twin-lead, interference from automotive ignition systems or electrical machinery may radiate into the long lead-in, causing objectionable noises throughout the FM band. In such cases, replace the conventional lead-in with *shielded* 300-ohm twin lead (available at major electronic-parts dealers). Connect the lead-in's 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 AM reception is marred because you live in a steel-frame building, or if you want to supplement the built-in AM antenna for improved reception of weaker stations, connect 10 to 20 feet of insulated, flexible, single-conductor wire to the AM terminal (Figure 2). Run the wire in a straight line along a *non-metallic* base-



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Figure 2. Bottom-Rear View of the Receiver Chassis

board or under a rug. In some cases, reception may be further improved by draping the wire out a window or by connecting it to an outdoor whip or rod antenna.

ACCESSORIES

HEADPHONES

For private listening from all program sources, you may plug a pair of FISHER headphones (or 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, if desired.

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

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 damage the phones.

WIDE-SURROUND[®] SPEAKERS

To enhance audible left-right separation when listening to stereo program sources, you may connect a pair of FISHER WS-2 WIDE-SURROUND[®] speakers to the console. These speakers—working in conjunction with the console's 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-2 speakers may be obtained from your dealer. To install WS-2 speakers, proceed as follows:

CAUTION: Use WS-2 speakers only. Do not connect WS-1's or other types of speakers. They may cause serious damage to the receiver circuits.

- (1) Turn off the console and disconnect its power cord from the electrical outlet.
- (2) Place the speakers to the right and left of the console as described in the WS-2 Operating Instructions.
- (3) Connect the speakers to the WS jacks at the bottom-rear of the console. Make sure that the speaker to the left of your *listening* position goes to the L jack while the speaker to your right goes to the R jack.
- (4) Connect the power cord to the electrical outlet and turn on the console.

STEREO REMOTE SPEAKERS

The REMOTE SPKR and adjacent COM terminals at the bottom rear of the receiver (Figure 2) provide convenient means for connecting a pair of remote extension speakers. This arrangement will enable you to enjoy stereo sound in another room of your home when you set the SPKRS switch to REMOTE.

CAUTION: Make sure that each extension speaker's rated impedance is at least 4 ohms; a lower value may cause severe overload and distortion. (Look near its connecting terminals or in its instruction book for the value or, if necessary, consult your dealer.)

- (1) Turn off the console and disconnect its power cord from the electrical outlet.
- (2) Place both speakers against a wall or on a shelf in the remote listening area so that they face your selected listening position.

Make sure that they are equidistant from you, no more than 10 to 15 feet apart (to prevent exaggerated stereo effects) and as close as possible to ear level (for maximum clarity). Later on, you can determine optimum locations on the basis of listening tests.

(3) If the speakers are each 50 feet or less from the console, use the cables supplied with the speakers or ordinary No. 18 two-conductor lamp cord or antenna twin-lead for the connections. For longer distances, use heavy-duty cable (at least No. 16). Cut two cables to the desired length but leave some slack in case you want to change speaker locations slightly. Strip about half an inch of insulation from both ends of each conductor and twist the bare wires to gather up loose strands. Look for some sort of marking on each cable that distinguishes one conductor from another: a distinctive color, stripe, or raised ridge on one of the insulators, a thread under one of the insulators, or a different color for each wire. This will help you to 'phase' the speakers in step 4.

(4) Connect the speaker at the left of your *listening* position to the L (upper) terminal strip, making sure that its COM, GND, C, G, or black terminal goes to the receiver's appropriate COM terminal while its 4 OHMS, 8 OHMS, 16 OHMS, or red terminal goes to the appropriate REMOTE SPKR terminal. Connect the speaker at your right to the R (lower) terminal strip in the same manner. **Both speakers must be connected the same way ('in phase') for correct stereo perspective and good bass response.** Check that the bare wires at the ends of the cables do not touch each other, adjacent terminals, or the chassis.

(5) Connect the power cord to the electrical outlet and turn on the console. Set the SPKRS switch to REMOTE and the MONO/STEREO switch to MONO and play a record or FM program. If the deep bass tones sound normal, the speakers are 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 and listen for normal bass.

(6) Set the MONO/STEREO switch to STEREO and play a *stereo* record or FM program. Experiment with speaker placement until you find the permanent location that best suits your personal tastes and listening conditions.

AUXILIARY PROGRAM SOURCES

You may increase the versatility of your console by playing an additional mono or stereo program source through its AUX LOW or AUX HIGH jacks (Figure 2). Moreover, if the extra source normally plays through its own low-fidelity speakers and amplifiers, playing it through the console instead will improve its sound quality noticeably.

The auxiliary source may be an AM short-wave or multiband tuner or receiver, the audio output of a TV set or sound-movie projector, an electronic organ, or any other similar device *so long as it has at least one medium-or high-impedance output jack providing about 410 mV to 2.5 volts of signal.* This type of jack is often marked CATHODE FOLLOWER, LINE OUTPUT, EXTERNAL AMPLIFIER (*not* EXTERNAL SPEAKER), TAPE RECORDER, or the like. If the device does not have the required jack, a qualified service technician can install one and, if necessary, add provisions for switching off its built-in speakers. **If the device is an AC/DC or 'transformerless' type, make sure that the technician eliminates shock hazard and hum caused by a 'hot' (electrically unisolated) chassis. If you are in doubt about the safety characteristics of the device, do not connect it to the console.**

Please note that you may use the AUX LOW or AUX HIGH jacks but not both sets of jacks at the same time. The following procedure gives instructions for determining which set of inputs to use:

(1) If the auxiliary device is monophonic (single channel), connect its single output jack to the console's AUX LOW L jack; use a shielded cable with the appropriate connector at each end. If the auxiliary device is stereophonic, it will have *two* such output jacks, one with the additional marking LEFT, L, A, or 1 and the other

with the marking RIGHT, R, B, or 2. Using two shielded cables, connect the left output to the console's AUX LOW L jack and the right output to the AUX LOW R jack.

(2) Connect the auxiliary device's power cord to a standard electrical outlet. Keep the power cord as far as possible from all shielded cables.

(3) Turn on the auxiliary device. Set the console's SELECTOR switch to AUX. If the auxiliary device is monophonic, set the console's MONO/STEREO switch to MONO; if the device is stereophonic, set the switch to STEREO. 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 compare the relative volume levels of the two program sources; they should be approximately equal *without you having to readjust the VOLUME control drastically each time you switch*. If the auxiliary device has any controls that affect auxiliary volume as heard through the *console*, adjust them, if necessary, to equalize the volume levels.

(5) If you can't reduce auxiliary volume sufficiently in step 4, or if the auxiliary program sounds distorted on loud passages, switch the connection(s) at the rear of the console from AUX LOW to AUX HIGH. (Make sure that the left and right cables go to the correct jacks.) Once again, turn the SELECTOR switch back and forth between AUX and FM AUTO and make any possible adjustments on the auxiliary device until the volume levels are about equal. Adjust all other console controls as usual.

TAPE RECORDERS, DECKS, AND PLAYERS

The console has provisions for connecting an external tape recorder or tape deck so that you may record any program source to which you are listening and then play *back* the recording (or any previously recorded tape) through the console at your convenience. If you wish playback *only* (of commercially prerecorded

tape), you may connect a tape player (having self-contained pre-amplifiers) instead of the recorder or deck. In any event, the tape unit may be a reel, cartridge, or cassette type.

CONNECTING THE TAPE UNIT—Use the following instructions and Figure 2 to connect the tape unit to the console. *When connecting a player, ignore step 1.*

(1) If the recorder or deck is monophonic (single channel), it may have a single high-level recording input marked HIGH LEVEL, LINE INPUT, PHONO, P.U., GRAM, or the like. Using a shielded cable with the appropriate connector at each end, connect this input to the console's RCDL L jack. If the recorder or deck is equipped to make stereo recordings, it will have *two* such high-level inputs, one with the additional marking LEFT, L, A, or 1 and the other with the marking RIGHT, R, B, or 2. Using two shielded cables, connect the left input to the console's RCDL L jack and the right input to the console's RCDL R jack. **Never connect the console to any input(s) on the tape unit marked MIC., MICROPHONE, RADIO, or DIODE; the resultant recordings will be severely overloaded and distorted.**

(2) If the recorder, deck, or player is monophonic (single channel) it may have a single playback output marked CATHODE FOLLOWER, LINE OUTPUT, MONITOR, EXTERNAL AMPLIFIER (*not* EXTERNAL SPEAKER), or the like. Using a shielded cable with the appropriate connector at each end, connect this output to the console's MON L jack. If the tape unit is equipped for stereo playback, it will have *two* such playback outputs, one with the additional marking LEFT, L, A, or 1 and the other with the marking RIGHT, R, B, or 2. Using two shielded cables, connect the left output to the console's MON L jack and the right output to the console's MON R jack.

(3) Connect the tape unit's power cord to a standard electrical outlet. Keep the power cord as far as possible from any shielded cables that connect to the console.

RECORDING AND MONITORING—Use the following instructions as a general guide to recording (and—if your recorder is properly equipped as described in step 3—to monitoring the tape while recording). The tape unit's Instruction Manual will provide specific recording instructions.

(1) As usual, choose the desired program source with the console's SELECTOR switch; *the source to which you are listening 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), set the receiver's MONO/STEREO switch to STEREO. If the program source or tape unit (or both) are monophonic, or if you want to record a stereo source on a stereo machine *monophonically*, set the MONO/STEREO switch to MONO. This will blend the signal from a stereo source into a complete, balanced mono signal; it will also assure that signals from a mono source are heard through both channels.

(2) Follow the tape unit's Instruction Manual for specific recording instructions. The SELECTOR and MONO/STEREO switches are the only console controls that have any effect on the recording; you may therefore adjust all other controls in the usual manner to suit your personal tastes and listening conditions.

(3) If you are absolutely certain that your tape unit has *true* tape-monitor facilities (different circuits and heads for recording than for playback), you may monitor the tape — while recording — to compare its sound quality with that of the original program material from which it is being derived. To do this, alternate the console's MONITOR switch between OFF (to hear the original program material as usual) and ON (to hear the same material, a fraction of a second later, *as it sounds on tape*). You may repeat this as often as you like without affecting or interrupting the recording process in any way. **When you've finished recording, remember to set the MONITOR switch OFF; otherwise, any program chosen with the SELECTOR will be silenced.**

PLAYBACK — To play back tapes from your recorder, deck, or

player, simply set the console's MONITOR switch ON. If the tape is stereophonic, set the console's MONO/STEREO switch to STEREO; if either the tape or tape unit is monophonic, set the switch to MONO. Adjust all other console controls in the usual manner to suit your personal tastes. **When you've finished playing tapes through the console, remember to set the MONITOR switch OFF; otherwise, any other program source chosen with the SELECTOR switch will be silenced.**

NOTE: If the tape unit is stereophonic and you wish to listen to a monophonic tape that has more than one track recorded on it, the tape unit must have track-selection facilities (to prevent playback of more than one track at a time); 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.

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 this device may be obtained at your dealer. To connect a SPACEEXPANDER to the console, proceed as follows:

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

(2) Connect *one* of the SPACEEXPANDER's channel A INPUTS to the console's RCDR L jack.

(3) Connect *one* of the SPACEEXPANDER's channel B INPUTS to the console's RCDR R jack.

NOTE: If you had to disconnect a tape recorder or deck from the console in steps 2 and 3 to accommodate the SPACEEXPANDER, reconnect the recorder's high-level inputs to the SPACEEXPAND-

ER's extra channel A and B INPUTS. This will permit you to record from the console while still using the SPACEEXPANDER. (The recordings, however, will not have reverberation since this effect is added *after* the point at which the recorder is connected.) Refer to the SPACEEXPANDER manual for details.

(4) Connect the SPACEEXPANDER's channel A OUTPUT to the console's MON L jack.

(5) Connect the SPACEEXPANDER's channel B OR C OUTPUT to the console's MON R jack.

NOTE: If you had to disconnect a tape recorder, deck, or player from the console in steps 4 and 5 to accommodate the SPACEEXPANDER—and you still wish to play tapes through the console—connect the output(s) of the tape unit to the console's AUX LOW or AUX HIGH jacks (if they are presently not in use) and use the AUX position of the SELECTOR switch; this will permit tape playback but not monitoring. As an alternative, you may obtain a switchbox that will permit you to feed the outputs of either the tape unit or the SPACEEXPANDER to the console's MON jacks. This type of switch is available at many electronic-parts dealers.

(6) Set the console's MONITOR switch ON and keep it in this position whenever you use the SPACEEXPANDER. **When the SPACEEXPANDER is turned off or disconnected, set this switch OFF; otherwise, all program sources (except tape) played through the console will be silenced.** Adjust all other console controls in the usual manner and operate the SPACEEXPANDER as described in its Instruction Manual.

MAINTENANCE

CAUTION: Turn off the console and disconnect its power cord from the electrical outlet whenever instructed to do so in the

following procedures. **Do not attempt any maintenance not listed in this section. For further service, consult your dealer.**

PRESERVING THE CONSOLE'S FINISH

Your console's fine-grain surfaces and rich satin finish are indications of the care and craftsmanship that have gone into its construction. To preserve its appearance, we recommend that you dust the console regularly and that you polish it occasionally with a cream-type product such as OZ or GUARDSMAN.

CLEANING THE CONTROL PANEL

The beautiful gold-bordered control panel will retain its 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 moistened 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) Turn off the console and disconnect its power cord from the electrical outlet.

(2) *Gently* pull each control knob upwards and off its control shaft. **Do not attempt to remove the rocker switches.**

(3) The control panel is held to the rest of the receiver chassis by hex nuts on some of the control-shaft bushings. Remove the hex nuts and lift off the panel.

(4) If there are two foam-cushion strips fastened to the retaining clips at the ends of the dial glass, detach them from the clips.

(5) Loosen (do not remove) the screws that hold the dial-glass retaining clips. Swing the clips aside and lift off the dial glass. (The glass is held from behind by adhesive rubber strips; it may therefore be necessary to apply a gentle prying force at the ends.)

(6) Remove dust with a soft, dry, lint-free cloth. If you wish to clean more thoroughly, moisten the cloth with *plain lukewarm water* and wipe the glass back and forth gently until it is clean and free of streaks. **Do not use any household or industrial cleaning agents; they 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 *front 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 (if removed previously), control panel, hex nuts, and control knobs by reversing the procedures in steps 2 through 4. Connect the power cord to the electrical outlet and turn on the console.

REPLACING DIAL LAMPS

The tubular dial lamps are spring-clip mounted at the ends of the dial glass under the control panel. Should they burn out, you may obtain exact replacements (Part No. I-50441-1) from your authorized FISHER dealer or from: Parts Department, Fisher Radio Corporation, 11-40 45 Road, Long Island City, New York 11101. Remove the control panel and replace the lamps as follows:

(1) Turn off the console and disconnect its power cord from the electrical outlet.

(2) *Gently* pull each control knob upwards and off its control shaft. **Do not attempt to remove the rocker switches.**

(3) The control panel is held to the rest of the receiver chassis by hex-nuts on some of the control-shaft bushings. Remove the hex nuts and lift off the panel.

(4) Gently pull the burned-out lamp out of its clip and snap the replacement lamp into place. Make sure 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 in steps 2 and 3. Connect the power cord to the electrical outlet and turn on the console.

SERVICING OTHER LAMPS

The STEREO BEACON and tuning-meter lamps under the dial glass and the pilot lamp near 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 service technician.

REPLACING THE PHONOGRAPH STYLUS

The stylus assembly is an integral part of the color-coded plastic block at the front of the pickup cartridge. Should it be necessary to replace a worn or damaged LP-stereo stylus, use this color as a guide in obtaining an exact replacement (gold block with brush, Part No. G3511). To play old 78-RPM shellac records, you will need an additional, interchangeable stylus with a larger tip (blue block, Part No. G3509). Either stylus may be purchased from: Parts Department, Fisher Radio Corporation, 11-40 45 Road, Long Island City, New York 11101. To replace or interchange styli, proceed as follows:

(1) If the console is on, turn down the VOLUME control to prevent objectionable noises while changing the stylus.

(2) Unlock the pickup (tone) arm from its rest clip and raise the arm slightly; *do not force it.*

(3) Grasp the plastic block between the tips of the thumb and forefinger of your free hand and *gently* pull it away from the main body of the pickup cartridge. Insert the new stylus in its place and lock the pickup arm in its rest.

CAUTION: Never play LP, LP-stereo, or 45-RPM records with the 78-RPM stylus (blue block); the larger stylus tip will damage the

fine-groove records. Always make sure that the appropriate stylus is in place before playing records.

REPLACING THE POWER FUSE

The power fuse at the rear of the console protects it against abnormal power-line surges and overloads. If the set fails to operate when plugged in and turned on or if it suddenly becomes completely inoperative while playing (i.e., all dial and pilot lamps go off, turntable stops, and both channels are silent regardless of program source), the fuse may have blown.

NOTE: Before attempting to replace the fuse, make sure that other factors aren't causing these symptoms. Check that the **AUTO-MATIC SHUTOFF** switch is **OFF** when you are not using the record player as the program source. Also make sure that the power cord is firmly in the electrical outlet. If these measures don't clear up the malfunction, proceed as follows:

(1) Turn off the console and disconnect its power cord from the electrical outlet.

(2) The power fuse is in the black receptacle marked **1 AMP SLO-BLO** at the bottom-rear of the receiver chassis (Figure 2). Turn the fuseholder cap counterclockwise (in the direction of the arrow on the cap) until it disengages from the receptacle and remove the fuse from the cap.

(3) The spare fuse supplied with the console has a short spiral coil of wire inside its glass envelope (identifying it as a slow-blow type). One of its metal ends is marked **1A**. Use only this fuse (or an exact commercial equivalent) as a replacement.

(4) Insert the replacement fuse in the fuse cap. Push the cap into the receptacle and turn it clockwise (against the direction of the arrow on the cap) until it is firmly in place. Connect the power cord to the electrical outlet and turn on the console.

CAUTION: If the console still does not operate or if it becomes inoperative within a short time, do not attempt to replace the fuse again. Consult your dealer or a qualified service technician.

TECHNICAL DATA

Music Power Output (IHF standard, both channels)	55 watts	FM Sensitivity (IHF)	2.5 μ V
Instantaneous Peak Power Output	110 watts	AM Sensitivity	10 μ V
Total Harmonic Distortion At full rated output	Less than 1.0%	FM-Multiplex Stereo Separation (at 400 Hz)	35 db
At normal listening levels	Less than 0.5%	Speaker Complement (each channel)	One 10" woofer One 5 $\frac{1}{4}$ " midrange One 3" tweeter
Frequency Response	Uniform throughout audible range as an integrated system	Automatic Turntable	DUAL
Input Sensitivity for Rated Output		Cartridge	Pickering V-15
Auxiliary Low	410 mV	Power Consumption at Rated Output	110 watts, 115 VA; automatic turntable extra
Auxiliary High	800 mV		
Monitor	240 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.

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.

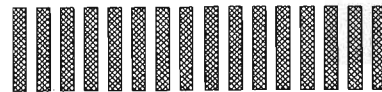
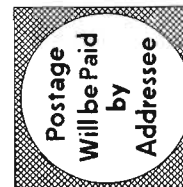
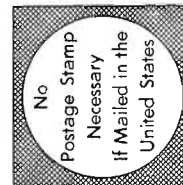
This warranty is in lieu of all other warranties, express or implied, and all other obligations or liabilities on the part of FISHER. No person, including any dealer, agent or representative of FISHER, is authorized to assume any liability for FISHER except to refer purchasers to this warranty.

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



BUSINESS REPLY MAIL
FIRST CLASS PERMIT No. 493, LONG ISLAND CITY, N. Y.

FISHER RADIO CORPORATION

11-40 45th Road

Long Island City, N.Y. 11101



PROTECT YOUR PURCHASE!

Please complete and return this

WARRANTY CARD

PLEASE PRINT

USER'S LAST NAME		FIRST NAME	INITIAL
USER'S HOME ADDRESS			
CITY		STATE	
MODEL NO.	DATE OF PURCHASE	SERIAL NO.	
F-5593	.	29208A	

Name of Dealer _____

City _____ State _____

I first heard of THE FISHER through (check one box only)

- Advertising Friend Dealer

If purchased because of advertising, please give name of publication: _____

Have you seen The Fisher Handbook? Yes No

I chose THE FISHER because: _____

What I think of my FISHER equipment: _____

You may quote me.

I also own these additional hi-fi units and speakers: _____

WARRANTY VOID UNLESS COMPLETED AND RETURNED
WITHIN 10 DAYS AFTER DATE OF PURCHASE



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.