

OPERATING INSTRUCTIONS AND WARRANTY



THE FISHER[®]

46835F

Philharmonic

P-294

Stereophonic Radio-Phonograph

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WORLD LEADER IN HIGH QUALITY STEREO

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.
- 1937 First exclusively high-fidelity TRF tuner, featuring broad-tuning 20-20,000 cycle fidelity.
- 1937 First two-unit high-fidelity system with separate speaker enclosure.
- 1938 First coaxial speaker system.
- 1938 First high-fidelity tuner with amplified AVC.
- 1939 First dynamic range expander.
- 1939 First 3-way speaker in a high-fidelity system.
- 1939 First center-of-channel tuning indicator.
- 1945 First preamplifier-equalizer with selective phonograph equalization.
- 1948 First dynamic range expander with feedback.
- 1949 First FM-AM tuner with variable AFC.
- 1952 First 50-watt all-triode amplifier.
- 1952 First self-powered master audio control.
- 1953 First self-powered, electronic sharp-cutoff filter system for high-fidelity use.
- 1953 First universal horn-type speaker enclosure for any room location and any speaker.
- 1953 First FM-AM receiver with a cascade front end.
- 1954 First low-cost electronic mixer-fader.
- 1954 First moderately priced professional FM tuner with two meters.
- 1955 First peak power indicator in high fidelity.
- 1955 First master audio control chassis with five-position mixing facilities.
- 1955 First correctly equalized, direct tape-head preamplifier with self-powered master audio control.
- 1956 First all-transistor preamplifier-equalizer.
- 1956 First dual dynamic limiters in an FM tuner for home use.
- 1956 First performance monitor in a high-quality amplifier.
- 1956 First FM-AM tuner with two meters.
- 1956 First complete graphic response curve indicator for bass and treble.
- 1957 First GOLDEN CASCADE FM tuner.
- 1957 First MicroRay tuning indicator.
- 1958 First stereophonic radio-phonograph with magnetic stereo cartridge.
- 1959 First high-quality remote control system.
- 1959 First complete stereophonic FM-AM receiver (FM-AM tuner, audio control, 40-watt amplifier).
- 1959 First high-compliance plus high-efficiency Free-Piston loudspeaker system.
- 1960 First to use MicroRay for FM tuning and as a recording audio level indicator.
- 1960 Smithsonian Institution, Washington, D. C., receives for its collection America's first commercially manufactured high-fidelity radio-phonograph, made by Avery Fisher in 1937.
- 1960 First reverberation device for use in high fidelity equipment—the Fisher Dynamic Spaceexpander®.
- 1960 First stereo tuner with MicroTune.
- 1960 First front-panel antenna selector switch, 72-300 ohm, Local-Distant positions.
- 1961 First FM-Stereo multiplex adapter with STEREO BEACON and automatic switching, mono to stereo.
- 1961 First complete FM-multiplex stereo receivers.
- 1961 First FM-stereo tuners with STEREO BEACON and STEREO BEAM.
- 1961 First internal switching system to permit immediate tape playback with use of all controls and switches.
- 1962 First simplified-operation control-amplifier, with infrequently used controls behind front-panel cover, yet immediately accessible.
- 1962 First woofer with eddy-current-damped driver.
- 1962 First FM tuner kit with separate d'Arsonval for tuning and separate cathode ray scale cast indicator (STEREO BEAM).
- 1963 First power amplifier to use oscilloscope frequency-compensated input circuit.
- 1963 First amplifier kit with STRATABALANC dynamic balancing system.
- 1964 First multiplex adapter with 'flywheel' section. Closely approaches theoretical limit rejection and of all spurious responses.
- 1964 First FM Stereo Tuner with STEREO SCALAR.
- 1964 First peripherally-driven tweeter with soft clipping.
- 1964 First FM tuner with TUNE-O-MATIC® circuit.
- 1965 First All-in-One, All-Transistor 4-Gang FM Tuner.
- 1966 First F.E.T. front-end design with over Automatic Gain Control.
- 1966 First FM tuner with Automatic RF Attenuation.
- 1966 First FM tuner to achieve 0.6 db capture times better than the best previous achievement.
- 1966 First FM Tuner to use a 10-megacycle-wide Detector, eliminating distortion for the listener.
- 1966 First FM Tuner with Clear Signal Indicator.
- 1966 First FM Tuner to incorporate a Power Circuit for high-quality, low-impedance hi-fi.
- 1966 First time-division multiplex circuit to include Four-Diode Coincidence Circuit.
- 1966 First Receiver with *Transist-O-Gard* protection circuit.
- 1967 First high-fidelity component with multi-button FM station selection.
- 1967 First to introduce high-fidelity equipment with integrated circuits (IC's).
- 1967 First loudspeaker system with 18" free-bass speaker.



THE FISHER® Stereophonic Radio-Phonographs

Your new FISHER console is a unique instrument that combines old-world artistry in furniture design and construction with the latest advances in electronics and electro-acoustics. Featuring a fully transistorized AM-FM-stereo receiver, a precision four-speed automatic turntable, and two matched full-range speaker systems, it is a complete high-fidelity stereo system that exhibits the superlative performance long praised by professional musicians and musical connoisseurs — performance that has made the FISHER name synonymous with high-fidelity leadership for over thirty years.

While quite simple to operate, the console is also extremely versatile, permitting full listening enjoyment as is, and—with the subsequent connection of suitable accessories — expansion into a complete home entertainment system. It will, by itself, play a wealth of program sources: AM, FM, and FM-stereo broadcasts, mono and stereo phonograph records of any size and speed, plus any one of a wide variety of auxiliary sources of your choice. (Special facilities are also included for tape-recording the selected program while listening and for playing *back* the recording — or any prerecorded tape — through the console at your convenience.) Whatever the program, the unit's complete array of controls and switches enable you to shape its sound characteristics to suit your personal tastes and listening conditions, while also providing selective listening through the console's speakers, optional remote speakers, or conveniently connected stereo headphones. A pair of FISHER WS-2 WIDE-SURROUND® speakers may also be connected for enhanced stereo 'spread' if desired.

The chassis incorporated in this instrument is typical of all FISHER receivers in its sensitive, noise-free radio reception, excellent channel separation on all stereo sources, wideband audio response, and ample low-distortion power reserve. Several design innovations are included, among them an FET front end, an integrated-circuit IF amplifier, a multiplex decoder with exclusive

STEREO BEACON*, and a power amplifier with the unique *Transist-O-Gard*® protective circuit.

The automatic turntable can be quickly adapted either for automatic operation with a stack of 7-, 10-, or 12-inch records or for single-play manual operation. In either case, accurate tracking is assured by a finely balanced transcription-quality tone arm and a high-compliance diamond-stylus magnetic 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 unit after playing the last record in a stack, permitting 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 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.

CAUTION: Some models are fitted with a power interlock at the

bottom of the rear cover to prevent electrical shock when the cover is removed for chassis servicing. Do not attempt to defeat or bypass this interlock.

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 above, connect the console's power cord to a convenient electrical outlet.

UNLOCKING THE SLIDE-OUT RECEIVER SHELF (SOME MODELS ONLY)

If your console has a slide-out shelf for the receiver and automatic turntable, it has been locked in place to prevent damage during shipment. To unlock the shelf, unfasten the wing nut at the center-rear of the console, open the front doors *fully* (to prevent marring them), and slide out the shelf. (The threaded hook that held the shelf in position will drop into the record-storage compartment *and should be saved, with the wing nut, for reshipment.*) Always open the front doors *fully* before sliding out the shelf.

CAUTION: Should it be necessary to reship your console, lock the shelf in position by inserting the hook in the hole on the bottom of the shelf, pulling the straight part of the hook through the hole at the rear of the console, and fastening with the wing nut.

PREPARING THE AUTOMATIC TURNTABLE

(a) Turn the two shipping screws (near the left-rear and right-front corners of the turntable's baseplate) to the right 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.

OPERATING THE CONSOLE

(b) Remove the stylus guard (if any) from the pickup cartridge and the rubber bands that hold the pickup and control arms in place. Normally, the pickup rest will hold the pickup arm locked in place until you start the turntable, whereupon it will automatically release it. (See 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 to the left as far as they will go. Lock the pickup arm in its rest and secure it with rubber bands. Then swing the control arm to the left so that it drops down, press down on the arm's pivot, and pull the arm to the *right* until it locks in place. (The arm may be released later by pressing down on the pivot and pushing to the left.) **FAILURE TO OBSERVE THESE PRECAUTIONS WILL VOID ALL WARRANTIES.**

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 stereo headphones to the console (for private listening) as well as a pair of WS-2 WIDE-SURROUND® speakers (for enhanced stereo effect) and a pair of remote speakers (for stereo listening in another room). Instructions are also included for connecting an auxiliary program source and a tape recorder, deck, or player. We recommend however, that you go on to *OPERATING THE CONSOLE* and familiarize yourself with the set before connecting accessories.

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 AUTO SHUTOFF PUSHBUTTON

This button determines whether you or the automatic turntable will control power to the console. **When playing program sources other than records, keep the button out (manual position) 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 this case, press *in* the button after starting the turntable, *but release it again when playing any other program.*

2 AC POWER SWITCH AND VOLUME CONTROL

Turn this control to the right (towards MAX) until it clicks. If the AUTO SHUTOFF button (item 1) is out (manual position), the tuning dial and meter will light immediately to indicate that the set is on. 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.

3 SELECTOR SWITCH

Select the program source you want to hear 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—to listen to *most* 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 6 for FM (and AM) tuning instructions.

FM LOCAL—only when listening to a very strong, nearby FM-stereo station that sounds objectionably noisy and distorted and appears at more than one point on the dial (and pressing in the MONO MODE pushbutton doesn't reduce interference). You shouldn't need this position very often, but when you do, remember to switch back to FM when listening to normal stations.

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

AUX—to play a stereo or mono auxiliary device (tape recorder or player, AM 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 SPKRS PUSHBUTTONS

Normally, keep the MAIN SPKRS button *in* to hear the selected program through the console's speakers. When listening through headphones, you may silence the console speakers by *releasing* the button. (Even without phones, this is a convenient way to silence the set momentarily without shutting it off or changing its Volume setting.) If you connect remote speakers, turn *them* on and off with the REMOTE SPKRS button. Use the buttons in

appropriate combinations to listen through console or remote speakers, or both sets *simultaneously*.

5 MONO MODE PUSHBUTTON

This pushbutton determines whether you will hear mono or stereo sound from your speakers and headphones. **When listening to FM broadcasts (either mono or stereo), always keep the button out (stereo position); 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 right 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 a record, tape, or auxiliary program source, keep the button out if the particular program is stereophonic (so that you actually hear stereo sound) and press it in if the program is monophonic (to ensure that you always hear the program through both channels—though monophonically—and to minimize objectionable rumble and distortion from older mono records). AM broadcasts will always be heard through both channels, whether the button is in or out.

6 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 along the middle 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 with minimum interference from adjacent stations.

If the STEREO BEACON lamp starts to blink on and off during an FM-stereo broadcast, or if 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, press in the MONO MODE pushbutton; the blinking and interference should

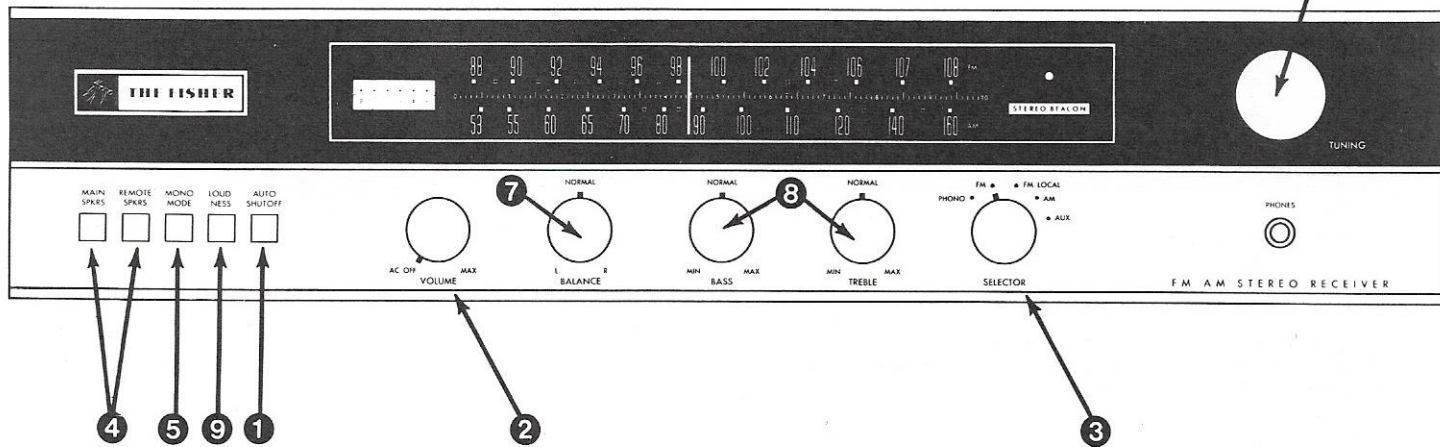


Figure 1. Control Panel of the Console

stop and you can listen to the program in mono. If this doesn't help, the interference may be caused by a strong nearby station; try setting the SELECTOR switch to FM LOCAL. Should you encounter this problem with many stations, you may be in a locality that requires a different antenna for 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*.

7 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 **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 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.*

8 BASS AND TREBLE CONTROLS

In most cases—especially with modern recordings and FM broadcasts—keep both controls set at **NORMAL** for natural tonal quality of speech and music. But if a particular record, broadcast, tape, or other program source has poor tone, or if the acoustical properties of your listening room, remote 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 **MAX**. If bass tones sound 'boomy' (or if the program material is marred by rumble, hum, or other low-pitched noise), turn towards **MIN**.

If speech sibilants, the soprano voice, and higher-pitched instru-

ments (violin, piccolo, cymbals, etc.) sound 'muddy' or unclear, turn the **TREBLE control** the desired amount towards **MAX**. If these sound too harsh or 'wiry' (or if the program is marred by objectionable hiss, scratch, or clicks), turn towards **MIN**.

9 LOUDNESS PUSHBUTTON

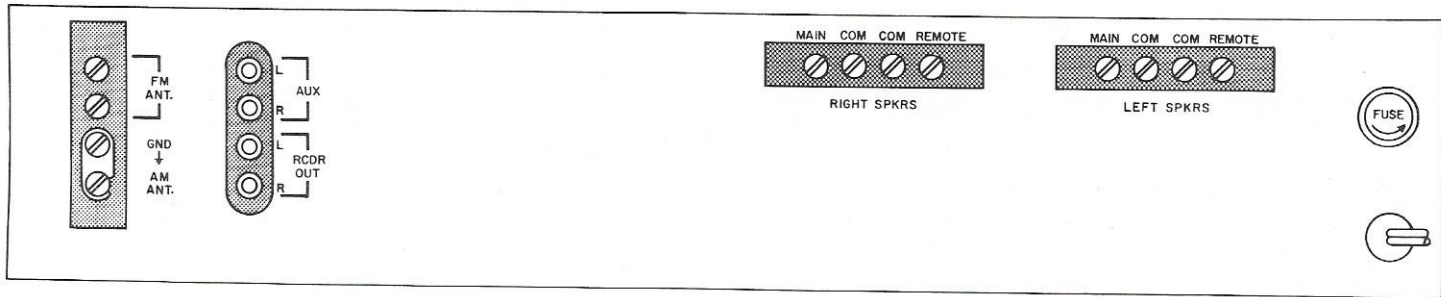
Use this pushbutton only at **low VOLUME control settings** to compensate for the apparent 'thinning out' of music and speech. (This effect is caused by the ear's naturally reduced sensitivity to low- and high-pitched tones at low listening levels.) With the pushbutton *in*, these tones are automatically emphasized by a predetermined amount to restore body and brilliance to the program material. At normal and high **VOLUME settings**, keep the pushbutton *out* to prevent boominess or overload.

ANTENNAS

FM ANTENNAS

The following paragraphs provide instructions for replacing the built-in antenna with other indoor or outdoor antennas to suit local reception conditions:

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 an indoor 'rabbit-ears' or telescoping-dipole antenna that can be rotated for best reception of the desired signal and maximum rejection of the unwanted reflections. (This type of antenna is available at most electronic-parts dealers.) Disconnect the built-in antenna from the **FM ANT. terminals** (Figure 2) and connect the rabbit-ears antenna in its place,



IL1700C100

Figure 2. Rear or Bottom-Rear View of the Receiver Chassis

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 turn the antenna for best reception in each case.

IMPROVING FRINGE-AREA RECEPTION AND REDUCING ELECTRICAL INTERFERENCE—In weak-signal 'fringe' areas, an outdoor 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 ANT. 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. In medium-fringe areas (up to 30 or 40 miles from stations), where most signals come from the same general direction, a folded dipole with reflector should provide good results. If signals come from several *different* directions, an omnidirectional antenna such as a cross-dipole, 'turnstile', or 'S' will eliminate the necessity for an antenna rotator. For deep fringe areas 50 miles or more from stations, a high-gain 'Yagi' array or Log-Periodic antenna is recommended. These antennas are quite directional however, and if station signals come from several directions, you'll probably require a remote-control antenna rotator.

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 ANT. terminals in the usual manner; connect the shield to the GND terminal next to the AM ANT. terminal.

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, loosen the AM ANT. and GND screws (Figure 2) and swing the link between them out of the way. Retighten the GND screw and connect 10 to 20 feet of insulated, flexible, single-conductor wire to the AM ANT. terminal. Keep this wire away from all speaker, audio, and power cables. Run the wire in a straight line along a *non-metallic* baseboard 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

STEREO HEADPHONES

For private listening to 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 and press the MAIN SPKRS pushbutton so that it pops out *before* plugging in the phones. Readjust the VOLUME control for a comfortable *headphone* listening level and use this setting for future reference.

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 the speakers, proceed as follows:

CAUTION: Use WS-2 speakers only. Do not connect WS-1's or other types of speakers to the console's WS jacks. They may cause severe overload and distortion.

- (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 rear or bottom-rear of the console. Make sure that the speaker at the left of your *listening* position goes to the L jack while the speaker at 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 and adjacent COM terminals at the rear of the unit (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 press in the REMOTE SPKRS pushbutton.

CAUTION: If your remote speakers' rated impedances are 4 ohms, have a qualified technician add a 4-ohm, 10-watt resistor in series with each remote speaker. Failure to observe this precaution may cause severe distortion when the console and remote speakers are played simultaneously at high volume.

- (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 console's LEFT SPKRS terminal strip (REMOTE and adjacent COM terminal) and the speaker at your right to the RIGHT SPKRS terminal strip (REMOTE and adjacent COM terminal). **For correct stereo perspective and good bass response, make sure that the speakers are connected 'in phase' (each speaker's COM, GND, C, G, or black terminal connected to the console's corresponding COM terminal).** 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 unit. Press in the REMOTE SPKRS and MONO MODE pushbuttons 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 set and carefully reverse the connections at *one* of the speakers. Turn on the set and listen for normal bass.

(6) Press the MONO MODE pushbutton so that it pops out (stereo position) 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 SOURCE

You may increase the console's versatility by playing an additional mono or stereo program source through its AUX 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. If you wish to use the playback output(s) of a tape unit as the extra source, refer to *TAPE RECORDER, DECK, OR PLAYER*. For auxiliary sources such as 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 similar device, use the following instructions:

(1) The source must have at least one medium- or low-impedance output jack providing about 250 mV to 3.0 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.**

(2) If the auxiliary device is monophonic (single channel) connect its single output jack to the console's AUX 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 L jack and the right output to the console's AUX R jack.

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

(4) Set the console's SELECTOR switch to AUX. If the auxiliary device is monophonic, press in the MONO MODE button; if the device is stereophonic, keep the button out. Adjust the console's VOLUME control for a comfortable listening level.

(5) Turn the console's SELECTOR switch back and forth between AUX and FM 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. Adjust all other console controls in the usual manner to suit your personal tastes.

TAPE RECORDER, DECK, OR PLAYER

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. In addition, if there is no auxiliary program source presently connected to the console, you may also connect the recorder or deck to play *back* the recording (or any previously recorded tape) through the console. If you wish playback *only* (of commercially prerecorded tapes), you may connect a tape player (having self-contained preamplifiers) instead of the recorder or deck. In any event, the tape unit may be a reel-to-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 RCDR OUT 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 RCDR OUT L jack and the right input to the RCDR OUT 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 AUX 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 AUX L jack and the right output to the console's AUX R jack.

NOTE: If you had to disconnect an auxiliary device from the AUX jacks in step 2 to accommodate the tape unit—and you wish to play both tapes *and* the auxiliary source through the console—obtain a switchbox that will permit you to feed the outputs of either the tape unit or the auxiliary device to the AUX jacks. This type of switch is available at many high-fidelity dealers.

(3) Connect the tape unit's power cord to an electrical outlet.

Keep the power cord as far as possible from any shielded cables that connect to the console.

RECORDING—As usual, choose the desired program source with the console's SELECTOR switch and the appropriate listening mode with the MONO MODE button (out for stereo, in for mono); *the source to which you are listening is the source that will be recorded.* Follow the tape unit's Instruction Manual for specific recording instructions. The SELECTOR switch is the only console control that has any effect on the recording (except, of course, the TUNING control, if you're recording a radio program); you may therefore adjust all other controls as usual.

PLAYBACK — To play back tapes from your recorded, deck, or player, simply set the console's SELECTOR switch to AUX. If the tape is stereophonic, keep the console's MONO MODE button out; if either the tape or tape unit is monophonic, press in the button. Adjust all other console controls in the usual manner.

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.

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 multitone 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 off its control shaft. **Do not attempt to remove the pushbuttons.**
- (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) Remove dust from the *outer* surface of the glass 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 attempt to remove the dial glass or clean its rear surface; this can be done only when the chassis is removed from the cabinet by a qualified technician.**
- (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.

REPLACING THE DIAL LAMPS

The dial lamps are mounted at the ends of the dial glass behind the control panel. In the rare event that they burn out, replace them with type 1847-0F's. These are long-life, frosted versions of standard type 47 lamps. If your dealer does not stock them, you may substitute type 47's instead or order exact replacements (Part No. I-50009-8) 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 off its control shaft. **Do not attempt to remove the pushbuttons.**
- (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) Remove the burned-out lamp (with its metal shade) by pushing it into its socket and turning it to the left until it disengages. Keep the shade for use with the replacement lamp.
- (5) Line up the two projecting pins on the replacement lamp with the slots on the socket, push the lamp into the socket, and turn it to the right until it engages. Slide the shade onto the lamp so that it will direct light *towards* the edge of the dial glass.
- (6) 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 behind the dial glass and (on some sets) 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 service-able. 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 (red block, Part No. G3507). 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 SHUTOFF pushbutton is *out* 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 FUSE at the rear or bottom-rear of the console (Figure 2). Turn the fuseholder cap to the left (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 **1.25 (1¼) A**. 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 to the right (against the direction of the arrow) 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

EIA Peak Power Output	90 watts	FM-Multiplex Stereo Separation	35 db
Frequency Response	Uniform throughout audible range as an integrated system	Speaker Complement (each channel)	One 10" woofer One 5" midrange One 2½" tweeter
Auxiliary Input Sensitivity for Rated Output	250mV	Automatic Turntable	BSR
Recorder Output	400 mV	Cartridge	Pickering V-15
FM Sensitivity (IHF)	2.0 μ V	Power Consumption at Rated Output	75 watts, 84 VA; automatic turntable extra
AM Sensitivity	10 μ V		

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 within ten (10) days of 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
(c) www.fisherconsoles.com

For FACTORY SERVICE REPLACEMENT PARTS

Write or Call

Service Department
FISHER RADIO
11-40 45th Road • L. I. City
New York 11101
(212) 937-2100

**Please Obtain Our WRITTEN
Permission BEFORE Returning
Any Merchandise**

For prompt attention, give the Model, S
No., and Purchase Date when writing us.

NOTE: FISHER replacement parts are taken from
the original production supplies used in
the manufacture of your equipment, and are there-
fore identical in every respect to the original

IMPORTANT!

PROTECT YOUR PURCHASE!

PLEASE FILL OUT THE WARRANTY CARD AT THE LEFT. THIS WARRANTY IS VOID UNLESS COMPLETED AND RETURNED WITHIN 10 DAYS AFTER DATE OF PURCHASE.

WHEN ENTER THE REQUIRED INFORMATION IN THE SPACES BELOW AND SAVE THIS MANUAL FOR FUTURE REFERENCE.

MODEL _____

SERIAL NO. _____

PURCHASE DATE _____

As a Fisher owner, you are entitled to all the benefits and advantages of the unique Fisher warranty. Protect your purchase by filling out the warranty card immediately. Mail today.



THE MAN BEHIND THE PRODUCT

AVERY FISHER
Founder and President,
Fisher Radio

More than 30 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. 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 President, Fisher Radio, Long Island City, New York 11101.

