

## OPERATING INSTRUCTIONS AND WARRANTY



# The Fisher®

Statesman®

S-695

Stereophonic Radio-Phonograph  
and Tape-Cassette Recorder

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



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 multispeed automatic turntable, a FISHER RC-70 stereo tape-cassette recorder, 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 addition of accessories — expansion into a complete home entertainment system. It will, by itself, play AM, FM, and FM-stereo radio broadcasts, mono and stereo records of every popular size and speed, plus an auxiliary source of your choice. Furthermore, you may copy (and thus preserve) any of these program sources, as well as live speech and music, on the built-in cassette recorder. The copy recording (or any prerecorded cassette) may then be played back through the console at your convenience. Whatever the program, the console's complete array of controls and switches enable you to texture the sound to suit your personal tastes and listening conditions, and to listen through any desired combination of console speakers, optional remote speakers, and conveniently connected stereo headphones. (WS-2 WIDE-SURROUND® speakers and the K-10 DYNAMIC SPACEEXPANDER® may also be connected.)

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 with TUNE-O-MATIC® pushbutton FM-station selection, an integrated-

circuit IF amplifier, a multiplex decoder with exclusive STEREO BEACON®\*, and a power amplifier with *Transist-O-Gard*®.

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 operation. In either case, accurate tracking is assured by a counterbalanced 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. 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.

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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 AC line frequency and voltage in your locality differ from these figures, or if local power is DC, do not connect the console to your electrical outlet; you'll seriously damage it.

#### 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 preceding requirements, connect the console's power cord to a convenient electrical outlet.

#### PREPARING THE AUTOMATIC TURNTABLE

(a) Lift the rubber mat on the front half of the turntable platter, turn the platter just enough for the small hole near its rim to expose a shipping screw on the front part of the turntable, and remove the screw. Lift the mat on the rear half of the platter and repeat the procedure at the rear of the turntable with the other shipping screw. **Save these screws in case you have to reship the console.** The turntable should now bounce up and down under hand pressure. This 'floating' suspension isolates the pickup from vibrations and jolts, minimizing 'skipping' and record damage.

(b) Remove the stylus guard (if any) from the pickup cartridge and any rubber hands that hold the pickup 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 pickup arm in its rest and remove the turntable's spindle. Then lock the turntable to the cabinet by reversing the procedures in step a. **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 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 the K-10 DYNAMIC SPACEPANDER® reverberation unit. We recommend however, that you go on to *OPERATING THE CONSOLE* and familiarize yourself with the set before connecting 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 AC POWER SWITCH AND VOLUME CONTROL

Turn this control to the right (towards 10) until it clicks. If the SELECTOR switch (item 2) is set to any position other than PHONO, the tuning dial and the console pilot lamp will light immediately to indicate that the set is on. (If the SELECTOR is set to PHONO, the unit 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

**NOTE:** While listening to the selected program source, you may simultaneously record it on the console's built-in RC-70 cassette recorder. See its instruction Manual for details.

### 3 TAPE MON PUSHBUTTON

Normally, keep this pushbutton out; otherwise any program source chosen with the SELECTOR switch will be silenced. Press it in only when playing back tape cassettes (either those you've previously recorded or commercially recorded ones) through the console. See the RC-70 manual for details.

### 4 SPKRS PUSHBUTTONS

Normally, keep the MAIN SPKRS pushbutton pressed in to hear the selected program source through the console's built-in speakers. When listening through headphones, you may silence the console's speakers by pressing the pushbutton so that it pops out. (Even without headphones, this is a convenient way to silence the console momentarily without shutting it off or changing its VOLUME setting.) If you connect stereo remote speakers to the console, you may turn them on and off with the REMOTE SPKRS pushbutton. By using the two pushbuttons in appropriate combinations, you may listen through the console speakers only, remote speakers only, or both sets simultaneously. For further information, refer to the *ACCESSORIES* section.

### 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 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*.

want, adjust the VOLUME control for a comfortable listening level. To shut off the entire set manually, turn the control to AC OFF.

### 2 SELECTOR SWITCH

Select the program source you want to hear (except tape; covered in item 3) by setting this switch to the appropriate position:

**PHONO**—to play phonograph records on the console's automatic turntable. (In this switch position, the turntable will turn on and shut off the set automatically, permitting you to leave the console unattended when playing records.) 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 (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.

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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

Two alternate tuning methods are provided: continuous manual tuning for both FM and AM, and TUNE-O-MATIC® for convenient pushbutton selection of up to five pretuned FM stations. Each method is described in detail below. Please follow these instructions carefully.

• **MANUAL TUNING**—To tune in an FM or AM station manually, proceed as follows. On AM, disregard steps a and b.

(a) On the TUNE-O-MATIC portion of the control panel, press in the center tip of the MANUAL pushbutton. This disconnects the TUNE-O-MATIC circuits and transfers control to the large TUNING knob and the main FM tuning dial.

(b) If you intend to tune on the FM band, first turn the outer part of the MANUAL pushbutton to AFC OFF. The red indicator in the adjacent window will disappear, signifying that the AFC (Automatic Frequency Control) circuits have been temporarily switched off. Don't forget to do this; it's important for accurate FM tuning. On AM, this step is unnecessary.

(c) Turn the large TUNING knob slowly until the main dial pointer indicates either the desired station on the appropriate band scale (FM or AM) 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,

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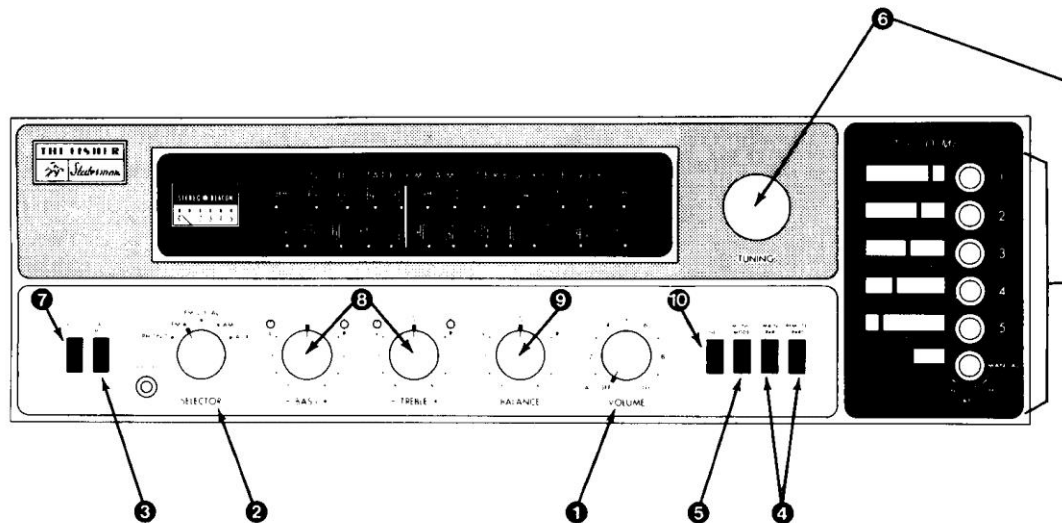


Figure 1. Control Panel of the Console

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undistorted sound with minimum interference from adjacent stations. Then, on FM only, turn the outer part of the MANUAL pushbutton back to AFC ON. (The red indicator will reappear in the window, signifying that the AFC circuits are once again operating.) Always remember to switch AFC OFF when tuning on the FM band and ON again when listening.

(d) 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 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.

• **TUNE-O-MATIC**—The TUNE-O-MATIC portion of the control panel has five individual FM tuning dials, each with a corresponding numbered pushbutton next to it. All you need do is pretune each pushbutton to one of your favorite FM stations and then press in the appropriate pushbutton to hear the station of your choice. Pretuning is quite simple and can be done as follows:

(a) Turn the outer part of the MANUAL pushbutton to AFC OFF. The red indicator in the adjacent window will disappear, signifying that the AFC (Automatic Frequency Control) circuits have been temporarily switched off. Don't forget to do this; it's important for accurate tuning.

(b) Press in the center tip of pushbutton 1 and turn the outer part of the pushbutton in either direction until you hear one of the stations you want. Tune carefully for the highest possible reading on the tuning meter (at the left of the main tuning dial) and for

clear, undistorted sound with minimum interference from adjacent stations. Note that the corresponding dial pointer will indicate the broadcast frequency of the station, which is normally listed in your local newspaper.

(c) Press in pushbuttons 2 through 5 in sequence and carefully tune in a different station on each.

(d) Turn the outer part of the MANUAL pushbutton back to AFC ON. The red indicator will reappear in the window, signifying that the AFC circuits are once again operating. The set is now ready—just press in the appropriately numbered pushbutton for the station of your choice. The TUNE-O-MATIC pushbuttons' electrical 'memories' will retain their station settings indefinitely, even if you switch back and forth between the TUNE-O-MATIC and manual-tuning modes.

**NOTE:** If, when pressing in a pushbutton, you hear a loud rushing or 'whooshing' noise before the station comes in clearly, you haven't tuned properly. Temporarily turn the AFC OFF and retune the pushbutton. (You may, of course, retune any pushbutton to a different station at any time, but remember to switch AFC OFF when retuning and ON again when listening.) 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, please refer to step d of MANUAL TUNING.

#### 7 MUTING OFF PUSHBUTTON

Normally, keep this pushbutton out 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, press in the pushbutton.

**NOTE:** If a weak station is adjacent on the dial to a strong local station, you may be able to improve reception of the weaker station by temporarily switching AFC OFF while listening. This will prevent the AFC circuits from 'pulling' towards the stronger station.

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### 8 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. 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 +. 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 either 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.

### 9 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.*

### 10 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.

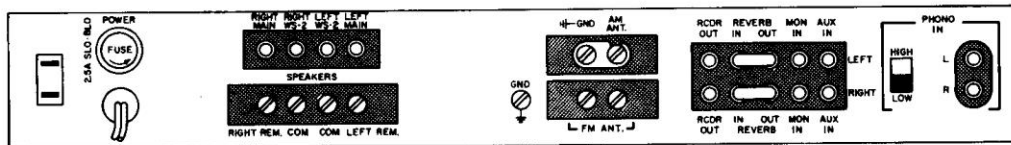


Figure 2. Bottom-Rear View of the Receiver Chassis

(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, 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 an-

tennas 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-2 jacks at the bottom-rear of the console (Figure 2). Make sure that the speaker at the left of your listening position goes to the LEFT jack while the speaker

at your right goes to the RIGHT jack.

- (4) Connect the power cord to the electrical outlet and turn on the console.

#### STEREO REMOTE SPEAKERS

The REM. and adjacent COM terminals at the bottom-rear of the console (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:** Never connect the LEFT REM. and RIGHT REM. terminals to each other. Also, *before* connecting the speakers, check their rated impedances. (Look near their connecting terminals or in their instruction books for the value or, if necessary, consult your dealer.) If they are rated 8 ohms or higher, you may safely connect them as described in the following instructions. In the rare event that they are rated at 4 ohms, first have a qualified technician add a 4-ohm, 20-watt resistor in series with each remote speaker. Failure to observe this precaution may cause severe overload and distortion when the console and remote speakers are played simultaneously (MAIN SPKRS and REMOTE SPKRS pushbuttons in).

- (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-con-

ductor 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 metal 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 REM. and adjacent COM terminal and the speaker at your right to the RIGHT REM. 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 IN 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 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 to the console.**

(1) If the auxiliary device is monophonic (single channel), connect its single output jack to the console's left AUX IN 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 left AUX IN jack and the right output to the right AUX IN jack.

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

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

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(4) 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.

#### DYNAMIC SPACEPANDER®

The FISHER K-10 DYNAMIC SPACEPANDER® 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 our dealer. To connect a SPACEPANDER to the console, proceed as follows:

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

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

(3) Connect one of the SPACEPANDER's channel A INPUTS to the console's left-channel REVERB IN jack.

(4) Connect one of the SPACEPANDER's channel B INPUTS to the console's right-channel REVERB IN jack.

(5) Connect the SPACEPANDER's channel A OUTPUT to the console's left-channel REVERB OUT jack.

(6) Connect the SPACEPANDER's channel B or C OUTPUT to the console's right-channel REVERB OUT jack.

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

**NOTE:** if you are recording from the console while using the SPACEPANDER, the completed recording will also contain reverberation.

## 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

Remove dust from the *exposed* surface of the glass with a soft, dry, lint-free cloth. If you wish to clean more thoroughly, moisten

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the cloth with *plain lukewarm water* and gently wipe the glass back and forth until it is clean and free of streaks. **Do not attempt to remove the control panel or clean the rest of the dial glass; this can be done only when the chassis is removed from the cabinet by a qualified technician.**

### SERVICING LAMPS

The STEREO BEACON, tuning-meter, and dial lamps under the control panel 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 (black block with *gold* dot and brush, Part No. GS21306-1). To play old 78-RPM shellac records, you will need an additional, interchangeable stylus with a *target* tip (black block with *blue* dot, Part No. GS21306-2). Either stylus may be purchased from: Parts Dept., Fisher Radio, 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.

### 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 SELECTOR switch is *not* at PHONO 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 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 **2.5A**. 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	240 watts
Frequency Response	Uniform throughout audible range as an integrated system
Auxiliary Input Sensitivity for Rated Output	250 mV
Output to Recorder	400 mV
FM Sensitivity (IHF)	2.0 $\mu$ V
AM Sensitivity	10 $\mu$ V

FM-Multiplex Stereo Separation	38 db
Speaker Complement (each channel)	One 12" woofer Two 5 $\frac{1}{4}$ " midrange One 3" tweeter
Automatic Turntable	FISHER 401B
Cartridge	Pickering XV-15
Cassette Recorder	FISHER RC-70
Power Consumption at Rated Output	140 watts, 150 VA; automatic turntable and recorder extra

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 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**

## For FACTORY SERVICE and 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, Serial 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 therefore 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.

THEN 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.



AVERY FISHER  
Founder and President,  
Fisher Radio

## THE MAN BEHIND THE PRODUCT

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.

## **ADDENDUM TO OPERATING INSTRUCTIONS**

Please note that we have discontinued manufacturing WS-2 WIDE-SURROUND® speakers. Simply disregard all reference to these speakers in the text and illustrations of the Operating Instructions.

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