OPERATING INSTRUCTIONS AND WARRANTY

THE FISHER

Executive IX

STEREOPHONIC

Radio-Phonograph and Tape Recorder-Reproducer

PRICE $1.00

WORLD LEADER IN HIGH FIDELITY

CONGRATULATIONS!

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

But the end step—your purchase—is merely a beginning. A door has now opened, for you and your family, on virtually unlimited years of musical enjoyment. Recognizing that one of the keys to pleasurable ownership is reliability, we have designed this instrument to give long and trouble-free service. In fact, instruments we made over twenty-five 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 20,000 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 3-Way Speaker in a high fidelity system.
1939 First Center-of-Channel Tuning indicator.
1945 First Preamplifier-Equalizer with selective phonograph equalization.
1948 First Dynamic Range Expander with feedback.
1949 First FM-AM Tuner with variable AFC.
1952 First 50-Watt, all-triode amplifier.
1952 First self-powered Master Audio Control.
1953 First self-powered, electronic sharp-cut-off filter system for high fidelity use.
1953 First Universal Horn-Type Speaker Enclosure for any room location and any speaker.
1953 First FM-AM Receiver with a Cascode Front End.
1954 First low-cost electronic Mixer-Fader.
1954 First moderately-priced, professional FM Tuner with TWO meters.
1955 First Peak Power Indicator in high fidelity.
1955 First Master Audio Control Chassis with five-position mixing facilities.
1955 First correctly equalized, direct tape-head master audio controls and self-powered preamplifier.
1956 First to use Power Monitor in a home amplifier.
1956 First All-Transistorized Preamplifier-Equalizer.
1956 First dual dynamic limiters in an FM tuner for home use.
1956 First Performance Monitor in a high quality amplifier for home use.
1956 First FM-AM tuner with TWO meters.
1956 First complete graphic response curve indicator for bass and treble.
1957 First Golden Cascode FM Tuner.
1957 First MicroRay Tuning Indicator.
1958 First Stereophonic Radio-Phonograph with Magnetic Stereo Cartridge.
1959 First high-quality Stereo Remote Control System.
1959 First complete Stereophonic FM-AM Receiver (FM-AM tuner, audio control, 40-watt amplifier).
1959 First high-compliance plus high-efficiency free-piston speaker system.
1960 First to use MicroRay for FM tuning and as a Recording Audio Level Indicator.
1960 First complete stereo FM-AM receiver with 60-watt power amplifier and new 7591 output tubes.
1960 Smithsonian Institution, Washington, D.C. accepts for its collection America's first commercially manufactured high fidelity radio-phonograph, made by Avery Fisher in 1937.
1960 First reverberation device, for use in high fidelity equipment—The Fisher Dynamic Spacexpander.
1960 First stereo tuner with MicroTune.
1960 First FM tuner with six IF stages.
1960 First FM tuner with five limiters.
1960 First front panel antenna selector switch, 72-300 ohm, Local-Distant positions.
1961 First Multiplex units with STEREO BEACON and automatic switching, mono to stereo.
1961 First complete receivers with Multiplex.
1961 First FM-Stereo-Multiplex tuners with STEREO BEAM.
1961 First loudspeaker system with frameless woofer cone, eliminating all parasitic resonance.
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 loudspeaker with eddy-current-damped voice coil.
1962 First bass speaker with combined serrated-aluminum and fiber cone.
1962 First FM Tuner Kit with separate d'Arsonval meter for tuning and separate cathode ray stereo broadcast indicator (STEREO BEAM).
1962 First Stereophonic FM Tuner with TUNE-O-MATIC Motor Tuning.
1962 First Supersonic Wireless Remote Control in a high fidelity component.
1963 First to use 8417 tubes with unique cavity-anode design.
1963 First power amplifier to use oscilloscope-type, frequency compensated input circuit.
1963 First amplifier kit with STRATABALANCE, visual dynamic balancing system.

THE FISHER EXECUTIVE IX

STEREOPHONIC

Radio-Phonograph and Tape Recorder-Reproducer

BY ACQUIRING THE FISHER *Executive IX*, you have brought into your home an electronic instrument of the highest technical excellence, constructed of premium-quality materials by craftsmen with many years of experience in the art of high fidelity sound reproduction. The *Executive* has been designed *by* perfectionists *for* perfectionists, and incorporates all the latest and best in electronic engineering.

The tuner-amplifier of the *Executive* includes FM and AM tuners of extremely high sensitivity, capable of "reaching out" to receive stations beyond the range of the ordinary FM or AM radio. Tuning is made more precise, on both FM and AM, by the use of a highly accurate signal strength meter. The FM tuner utilizes the new GOLDEN SYNCHRODE front-end and four high gain, wide-band IF stages for superb mono and stereo FM reception. It includes the Fisher STEREO BEACON, which automatically signals when an FM stereo program is broadcast and instantly switches into the stereo mode. There is thus no need to leave your armchair when a station intermixes stereo and mono recordings — the STEREO BEACON will "turn the knob" for you. The Garrard Automatic Turntable, which combines the precision of professional studio equipment with the convenience of automatic record changing, will provide many years of trouble-free record listening. The Pickering magnetic cartridge, which employs a diamond stylus and unique patented design, will play your monophonic and stereo recordings with the utmost clarity of detail. The *Executive* is also provided with the newest version of the world-famous Ampex tape recorder, permitting you to record and play back FM stereo programs or recordings made from other sound sources, and to play back all quarter-track and half-track prerecorded stereo tapes.

The Master Audio Control of the *Executive* includes the full range of functions found on elaborate professional installations, grouped functionally for maximum convenience. A single control is used for selecting all stereo and mono program sources. This is followed by a superbly engineered dual-channel audio amplifier, capable of delivering a full 80 watts of music power — more than enough to drive the speaker systems of the *Executive* to full room volume with ease. A special feature of the amplifier is a 4-position Speaker Selector which

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silences the speakers for personal listening with earphones, and also permits additional external speakers to be heard in various combinations with the internal speakers of the *Executive*. The precisely matched four-speaker systems of the *Executive* feature 12-inch, high compliance woofers for low frequency response down to 30 cps. Each speaker system incorporates two 5-inch mid-range speakers for the fullest definition in the all-important "presence range," and a 3½-inch tweeter for a smooth and silky high frequency response extending beyond the range of audibility. Thus a total of eight high quality loudspeakers, each specializing in a particular portion of the audio spectrum, is carefully combined to recreate, as closely as is possible, the sounds of a live performance.

The *Executive IX* is an ensemble of the finest high fidelity components, precisely matched for truly outstanding performance. We are certain that your appreciation of its almost unlimited capabilities will grow with time, as it handles every musical assignment with the utmost ease.

WHAT IS STEREOPHONIC SOUND?

STEREOPHONIC SOUND (stereo) is a method of reproducing sound by means of two independent channels, left and right, so that a spatial feeling of direction and depth is recreated. It is the extension of high fidelity sound into three dimensions. In fact, it offers the closest approach to true high fidelity yet achieved because it comes closest to the ultimate aim of all high fidelity systems — a perfect recreation of the original live sounds. Thus, good stereophonic sound *is* high fidelity in the truest sense of the term.

This feeling of dimension is lost with monophonic (single channel) reproduction, because our ears help determine the relative position of separate instruments in an ensemble only if each hears a slightly different version of the sound, just as visual depth perception depends on the two separate, slightly different pictures received by the eyes. Merely using two or more speakers on a single amplifier does not solve the problem; it only spreads the single sound source without providing the all-important different "aural viewpoints."

True stereo sound, then, requires the use of two independent sound paths from the origin to your ears, kept separate at all times during recording, transmission and reception. This requires the use of two separate sets of recording amplifiers, a means of keeping the channels apart during recording and radio broadcasting, and finally, two independent amplifier and speaker systems in the home. In a stereo record, each wall of the groove contains a separate signal, and the stereo cartridge is designed to pick up each of these two channels separately. The new system of FM stereo broadcasting (known as "multiplex") utilizes a separate supersonic signal, in addition to the main signal. By combining these two signals in a multiplex converter, the original left and right channels are recovered. Stereo tape recordings are made by impressing the two channels on separate parallel tracks running along the length of the tape.

No attempt is made to keep the two channels completely separate. In a live performance, your left ear hears many of the sounds on your right, and vice versa. Thus, keeping the channels totally apart from the original recording session to the final playback in your home would result in an unnatural effect. But enough separation is maintained so that a definite feeling of direction occurs as you listen to the reproduced sound. The result is a remarkably vivid illustration of great depth and spaciousness, such as is normally obtained only at a live performance.

INSTALLING THE EXECUTIVE

Antennas

The *Executive* is equipped with two antennas, one to receive FM broadcasts and one for AM broadcasts. These should provide good reception in all cases except extreme fringe areas, or where special local conditions result in high signal loss. (Buildings constructed of steel girders, for example, can cause a loss of signal strength.) If reception is weak or poor, see the instructions on page 9 to rectify the condition.

Speaker Adjustments

A Presence control for each speaker system is located on the rear of the two speaker enclosures. These controls adjust the relative volume of the tweeters and mid-range speakers to suit room acoustics and your personal preference. These controls have been preset at the factory for smoothest response in average listening rooms. After listening to a number of different selections, you may desire to change the relative emphasis of treble tones. To decrease the treble range, turn the Presence control counterclockwise (as viewed from the rear); to increase the treble, turn this control clockwise. Room acoustics may require different settings for each speaker system to achieve proper balance.

Tape Recorder Accessories

A stereo microphone and 7-inch take-up reel are packed in the phono compartment. Consult the tape recorder instruction booklet for details on the operation of the recorder. Pages 4-7 and 16-23 of the tape recorder instruction manual apply to the operation of the recorder as installed in the *Executive*.

Automatic Turntable

During transit the Automatic Turntable is held in place by a large wooden retaining bracket. This bracket and its two mounting screws should be removed after the *Executive* has been placed in its final location. The small wooden blocks under the metal motor board can be removed by loosening the screws holding the Automatic Turntable to the wooden shelf. When this is done, the Automatic Turntable should ride freely on springs which act as shock absorbers. Depress each side of the Turntable to determine whether it rides freely on its spring mounts. If it does not move downward and back under hand pressure, consult your FISHER dealer.

To remove the V-Guard stylus assembly, simply grasp the "V" between the tips of the thumb and forefinger, and pull gently. To replace the V-Guard, grasp the "V" of the assembly with the stylus down, and slip the rod into the cavity as far as it will go.

HOW TO USE THE CONTROLS

LIKE ANY OTHER fine piece of electronic equipment, the *Executive* must be operated correctly in order to deliver its full capabilities. We urge you to read these instructions carefully in order to achieve optimum results.

Volume Control

The Volume control regulates the total volume of sound from both speakers. The AC Power switch is combined with this control and turns off the power to the entire *Executive* at the extreme counterclockwise position. The Volume control changes the sound level from both channels equally, thus making it unnecessary to balance the channels each time you change the volume.

Loudness Contour Switch

The Loudness Contour switch is used to add compensation for the natural deficiency of the human ear in the extreme bass and treble ranges at low volumes. With this switch in the ON position, an increasing emphasis of low bass and high treble tones is added as the Volume control is turned counterclockwise, resulting in a more natural sound at low volumes.

Selector Switch

The Selector switch determines which program source will be heard and selects the mono or stereo mode of operation. The positions perform the following functions:

TAPE HEAD: Selects an *external* tape deck connected to the TAPE HEAD jacks and provides correct equalization for tapes played at a speed of 3¾ and 7½ inches per second. *Use the TAPE PLAY position of the Selector switch to play back from the Executive's built-in tape recorder.*

PHONO STEREO: This position should be used for all stereophonic records played on the Automatic Turntable.

FM AUTOMATIC: This position is normally used for all FM broadcasts, both monophonic and stereo. The STEREO BEACON (to the left of the tuning scale on the dial glass) will light when a stereo program is being transmitted and the set will automatically switch into the stereo mode. At the conclusion of the stereo broadcast, the STEREO BEACON will turn off and the set will automatically switch back to the monophonic mode.

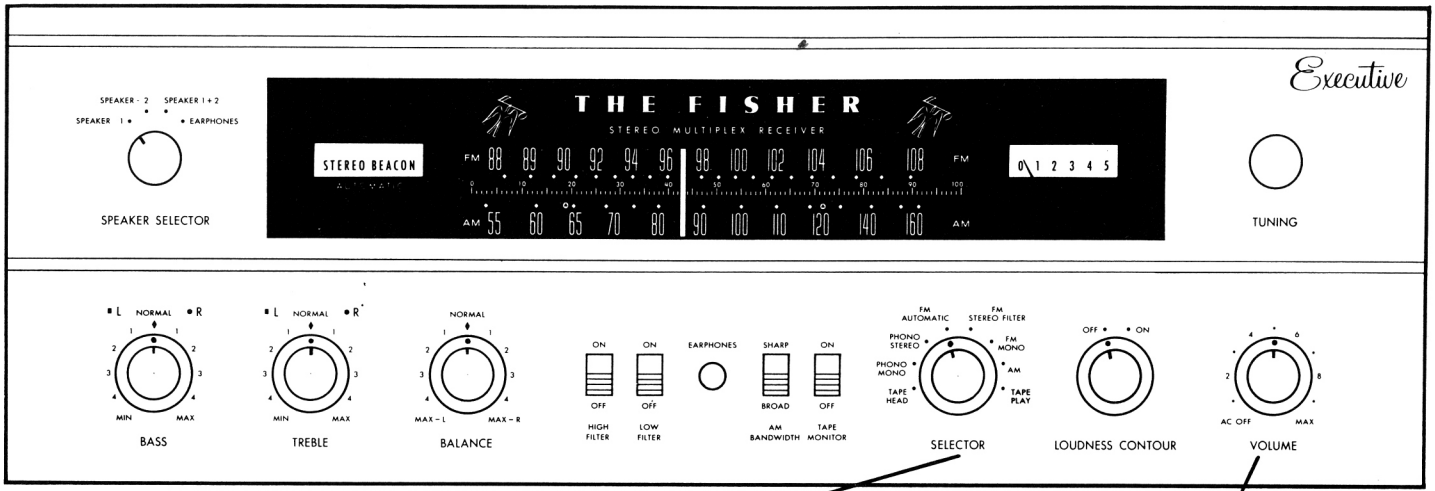
FM STEREO FILTER: This position is used when listening to a stereo FM program from a weak or distant station. When the noise level on an FM stereo program is too high for enjoyable listening, using the FM STEREO FILTER position will decrease the noise considerably, without appreciably altering the tonal characteristics of the program. With the Selector in this position, the STEREO BEACON is *locked on* and the *Executive* remains in the stereo mode even during a monophonic broadcast. For this reason, *remember to turn the Selector back to FM AUTOMATIC at the conclusion of the program.*

FM MONO: This position is designed to provide *monophonic reception of stereo FM programs* so weak that they cannot be received satisfactorily in either the FM AUTOMATIC or the FM STEREO FILTER positions. Because monophonic reception is inherently quieter than FM stereo, the noise level on a stereo program will be greatly reduced when the FM MONO position is used. For monophonic reception of monophonic programs, use the FM AUTOMATIC position.

AM: This position is used for listening to programs on the standard broadcast band, 550 to 1650 kc.

TAPE PLAY: This position is for listening to tape playback from the *Executive's* built-in tape recorder. See the enclosed sheet for a quick guide to tape recorder operation.

FIGURE 1. **FOR THE 'MAN IN A HURRY'**



NOTE: *Set all other switches and controls in the position shown.*

STEP 2

Set ***SELECTOR*** to the program source you wish to hear.

PHONO MONO or **PHONO STEREO** to listen to a monophonic or stereo record.

FM AUTOMATIC for an **FM** broadcast. **AM** for an **AM** broadcast.

TAPE PLAY for a tape recording.

STEP 1

Turn on power by turning ***VOLUME*** control slightly clockwise until it clicks. Adjust later for desired volume.

Tape Monitor Switch

This switch is *only* used while making a recording. *At all other times it should be left in the OFF position.* While the recording is being made, you can compare the quality of the tape with the original sound source by sliding the switch back and forth between ON (to hear the tape itself) and OFF (to hear the original sound source). The tape recording will not be affected by the operation of this switch or by the setting of the other controls (except the Selector switch and the Low Filter). For playback of a previously recorded tape, use the TAPE PLAY position on the Selector switch.

Balance Control

This control is used to equalize the sound levels from both speaker systems to achieve the optimum stereo effect. If the Channel A and Channel B inputs are exactly balanced, you will hear equal sound levels from the left and right speakers with the control in the NORMAL position. If, however, there is an imbalance in the program levels, you can re-balance the sound levels by turning the Balance control either clockwise (to increase the sound level on the right and decrease the sound level on the left) or counterclockwise (to increase the left and decrease the right). The Balance control is not a volume control since the same over-all volume is maintained as it is adjusted. With the Balance control fully counterclockwise, only the left speaker will be heard; with the control fully clockwise, only the right speaker will be in operation.

Bass and Treble Controls

The Bass controls increase or decrease the amount of bass tones heard in the sound output. With the Bass controls in the NORMAL position, the bass tones will sound exactly as they were recorded at the program source. If you wish to increase the bass emphasis because of a bass deficiency in the record, tape or radio broadcast you have selected, simply turn the Bass controls toward MIN. Normally, the Bass controls for left and right speaker systems rotate together, but if you wish to adjust the Bass separately for each channel, hold one of the knobs while turning the other.

The Treble controls adjust the intensity of the Treble tone heard in the sound output. As with the Bass controls, the NORMAL position will result in the same degree of treble tone as exists in the program source. The relative amount of treble tone can be increased, resulting in a more brilliant and crisp sound, by turning the Treble control toward MAX; and it can be decreased, resulting in a more mellow and intimate tone, by turning the control toward MIN. The Treble controls may also be adjusted individually for each channel by holding one knob while rotating the other.

High and Low Filters

The High Filter is a sharp cut-off circuit designed to remove annoying record scratch, hiss and other high frequency noise without dulling the treble portion of the musical program. It may also be used to eliminate noise on multiplex programs from very weak stations. The Low Filter is similarly designed to remove low frequency noise without weakening bass tones in the musical signal. Note that the High Filter is effective on tape playback but does not affect the recording.

AM Bandwidth Switch

Strong local AM stations can be received with maximum fidelity by placing this switch in the BROAD position. On weaker signals, however, interference from adjacent stations may be experienced with the switch in the BROAD position, and noise may be increased. In this case, place the AM Bandwidth switch in the SHARP position to increase the selectivity of the AM tuner and thereby reduce noise and interference to much lower levels.

FM and AM Tuning

The Tuning knob selects both FM stations in the 88 to 108 megacycle band and AM stations in the 550 to 1650 kilocycle band. When tuning in the station of your choice, set the dial pointer at the position which results in a maximum indication on the Tuning Meter. When tuning across the FM band, with the Selector at FM AUTOMATIC, the STEREO BEACON will signal whenever you reach a station broad-

casting in stereo. For your added convenience, a logging scale with linear divisions from 0 to 100 is included between the two bands. By making a note of the location of your favorite stations on this linear scale, you will be able to tune to them more quickly and accurately.

Speaker Selector Switch

The Speaker Selector switch is designed for maximum convenience when using additional external speaker systems or earphones with your *Executive*. (WS-1 extension speakers are connected directly to the internal speakers and will operate only when the speakers in the *Executive* are playing.) The four positions are as follows:

SPEAKER-1: This position is used when no external speakers are connected to the *Executive*. If external speakers are connected, this position will silence them and permit you to listen to the speakers in the *Executive* alone.

SPEAKER-2: This position permits you to listen to external speakers alone. The speakers in the *Executive* will be silent.

SPEAKER 1 + 2: If you desire to hear both the external speakers and the speakers of the *Executive* simultaneously, this position will permit you to do so.

EARPHONES: This position is used for personal listening with earphones. All speakers are silenced, thus permitting you to listen to the *Executive* (with stereo earphones plugged into the EARPHONES jack) without disturbing others. Be sure to return the switch to the SPEAKER-1 position when disconnecting the earphones.

Automatic Shut-off Switch

This switch is located *inside the Automatic Turntable compartment.* When turned to the ON position, it will cause the *entire Executive* to shut off after the last record has been played. The OFF position disables this feature — only the Automatic Turntable itself will shut off after the last record.

NOTE: With the switch ON, the *Executive* will be completely inoperative when not using the Automatic Turntable. Therefore, *always turn the switch to OFF when records are not being played.*

CONNECTING ADDITIONAL COMPONENTS TO THE EXECUTIVE

ALTHOUGH THE *Executive* comprises a complete home music entertainment center in itself, provisions have been included to add a variety of external components. These may include the FISHER SPACEXPANDER and WS-1 extension speakers.

WS-1 Speakers

Jacks are provided on the rear of the *Executive* for the connection of two FISHER WS-1 Speakers as adjuncts to the two speaker systems. With the addition of the WS-1 system, the stereophonic as well as monophonic sound pattern can be augmented to a startling degree. Simply connect the WS-1 cables to the WS-1 jacks. Place the speaker connected to the left jack on the left side of the room, and the speaker connected to the right jack on the right side of the room (as viewed from the listening area). WS-1 speakers operate together with the internal speakers of the *Executive* to increase the stereophonic effect, and are not intended to be played alone.

SPACEXPANDER®

Special SPACEXPANDER jacks are located on the top panel of the main chassis. The SPACEXPANDER is designed to add the natural, controlled reverberation of a large concert hall to your listening room. Before installing the SPACEXPANDER, remove the two jumper wires between the SPACEXPANDER jacks but retain the jumpers for possible future use. *These jumpers must be inserted when the* SPACEXPANDER *is not connected or the Executive will be completely inoperative.*

Make the following connections:

1 — LEFT TO REVERB OUT jack on the *Executive* to the Channel A OUTPUT jack on the SPACEXPANDER.

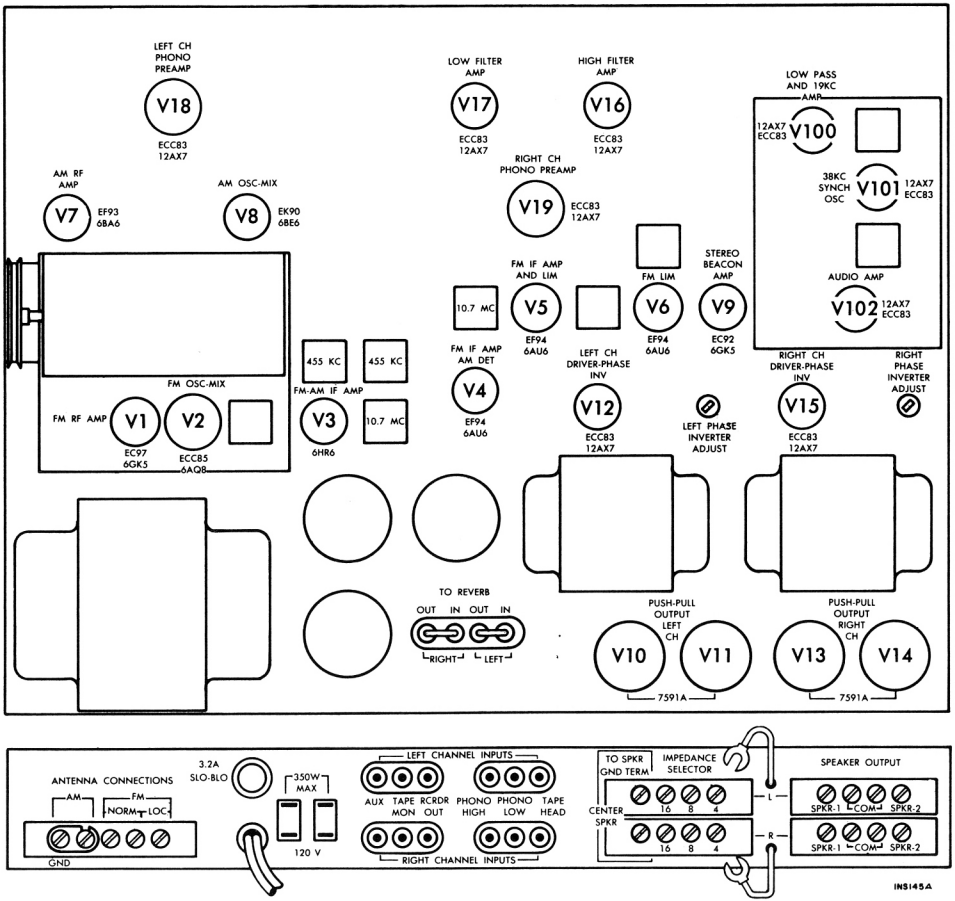


FIGURE 2. Rear panel and tube layout chart.

2 — RIGHT TO REVERB OUT jack on the *Executive* to the Channel B OUTPUT jack on the SPACEXPANDER.

3 — LEFT TO REVERB IN jack on the *Executive* to the Channel A INPUT jack on the SPACEXPANDER.

4 — RIGHT TO REVERB IN jack on the *Executive* to the Channel B INPUT jack on the SPACEXPANDER.

External Speakers

Separate speaker systems can be connected to the *Executive* to enhance the stereo sound pattern in large listening rooms or to provide music enjoyment in other rooms of your home. Ordinary power cord may be used for these connections, which are made to the rear panel of the main chassis. The left speaker is connected to the SPKR-2 L screw terminals (on the extreme right of the panel) and the right speaker is connected to the SPKR-2 R terminals. Speakers may be of 4 to 16 ohm impedance. In order to assure proper phasing of the two extension speakers when they are placed in the same room, reverse the leads to one of the speakers several times while playing a monophonic program with prominent bass tones through both speakers. Leave the speaker leads in the position which results in the most solid and full bass range. External speakers will be heard only when the Speaker Selector switch is turned to the SPEAKER-2 or the SPEAKER 1 + 2 positions.

Center Channel Speaker

If you wish to connect a center channel speaker for remote monaural operation, connect a third speaker of 16-ohm impedance to the CENTER SPKR terminals on the rear panel of the *Executive*. No additional equipment is required. Speakers of 4- and 8-ohm impedance may also be used, provided that resistors are connected in series with them. For the 4-ohm speaker, a 12-ohm, 10-watt series resistor should be used. An 8-ohm speaker requires an 8-ohm, 5-watt series resistor. Should you desire to reduce the volume of the center speaker, additional series resistors may be added (10-ohm, 5-watt, 20-ohm, 10-watt). If you do not wish to add these resistors yourself, consult your local authorized Fisher repair station or television serviceman.

Note: The center speaker operates in all positions of the Speaker Selector switch — even the EARPHONES position. If you wish to silence the center speaker while the *Executive* is on, a single-pole, single-throw switch (such as an ordinary appliance switch used on line cords) should be placed in one of the speaker leads.

External Tape Deck

An additional tape *deck* (tape playing mechanism without preamplifiers) may be connected to the *Executive* TAPE HEAD jacks on the rear panel, and played through the *Executive* sound system by turning the Selector to the TAPE HEAD position.

THE ANTENNAS

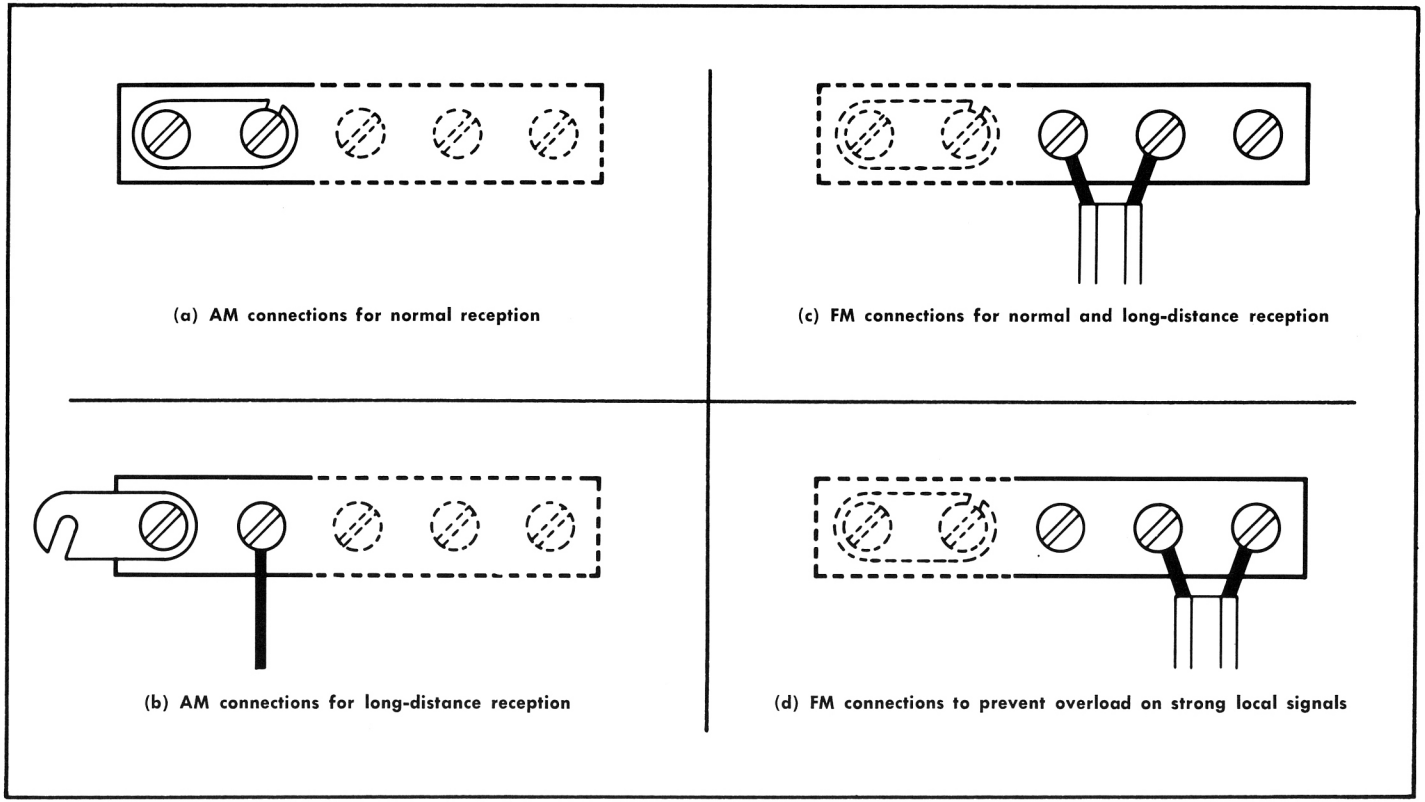
SEPARATE FM and AM antennas are supplied with the *Executive*. These antennas should be adequate in all cases except extreme fringe area conditions. If reception is weak, the connection of a roof antenna may be necessary to increase the strength of the radio signals.

The following information refers to the antenna terminal strip on the rear panel.

AM Antenna

The *Executive* is supplied with a built-in ferrite loop antenna for AM reception. This antenna provides superior rejection of noise and static, and should prove more than adequate for all but extreme long-distance applications. The AM antenna (on a hinged bracket at the left rear of the main chassis) *must be rotated back to the rearward position for proper AM reception*. For long-distance reception, a long-wire antenna can be added to the *Executive* by removing the strap across the AM Antenna terminals on the left rear panel and connecting the long wire to the second terminal from the left, as shown in Figure 3(b).

FIGURE 3. Antenna connections.



FM Antenna

The FM antenna installed in the *Executive* is of the folded dipole type. This antenna should prove adequate except under difficult reception conditions. However, *FM multiplex requires stronger signals for low noise levels than ordinary monophonic programs.* You may find, therefore, that placement of the antenna may have to be improved for good multiplex reception. In some cases, especially in fringe areas, an outdoor rooftop antenna or even a highly directional yagi type may be needed for multiplex reception, even though the indoor antenna suffices for monophonic transmissions. Outdoor antennas should be connected to the NORM terminals. Consult your FISHER dealer for further information on connection of an external antenna.

In some areas located in the vicinity of a powerful FM transmitter, the sensitive FM input circuits may overload. This condition is present if a strong station appears at several points on the FM band. To prevent this from occurring, remove the FM antenna from the NORM terminals on the FM Antenna Terminal Strip and connect the two leads of the antenna wire to the LOC terminals as shown in Figure 3 (d). The LOC terminals should only be used when a serious overload problem exists because the resultant slight decrease in overall sensitivity may prevent reception of weak marginal stations.

FOR THE TECHNICALLY-MINDED

THE MAIN CHASSIS of the *Executive* comprises a highly sensitive FM-AM tuner, audio control center and dual-channel power amplifier. The FM tuner utilizes the new GOLDEN SYNCHRODE front-end with three tuned circuits for extremely high sensitivity, image rejection and IF rejection, and a greater overload margin than previous designs. A mixer-oscillator stage is followed by four high-gain IF stages with extremely wideband characteristics and excellent limiting action in the last three stages. A 1-megacycle wide, extremely linear ratio detector demodulates the signal, which is then fed to the audio circuits. The AM tuner incorporates a tuned RF amplifier for high sensitivity and selectivity and an IF amplifier with a two-position bandwidth switch, one position providing narrow bandwidth for the increased selectivity needed to separate stations close in frequency, the other providing wide bandwidth and maximum fidelity. A highly sensitive d'Arsonval tuning meter is used for both AM and FM.

The multiplex converter is of the time-proven time division type. This circuit, which employs a 38-kc synchronous oscillator as switching device, decodes the multiplex signal in two balanced diode bridges. This system, although more costly than other methods, provides superior channel separation, noise cancellation and freedom from distortion. The STEREO BEACON circuit detects the 19-kc pilot tone transmitted by the station only during stereo broadcasts, and uses this signal to operate a silicon diode bridge for automatic switching between stereo and mono FM operation. A separate amplifier and relay are used to turn on the STEREO BEACON light during stereo transmissions.

The audio control section consists of several low-noise triode stages for phono preamplification, tone control amplifiers and filter circuits. A cathode-follower output is provided for the tape recorder. The power amplifier uses push-pull 7591 tubes for a full 80 watts of music power in both channels. Distortion and noise are reduced to negligible amounts by feedback taken from the secondary of the output transformers. The entire chassis is thus a combination of advanced electronic designs combined for maximum performance. High reliability for many years to come is assured by the use of the best possible components throughout, such as mylar capacitors and low-noise, 5 percent tolerance deposited-carbon resistors.

TECHNICAL SPECIFICATIONS

THE FM TUNER:	
IHFM Usable Sensitivity	1.8 microvolts
Signal-to-noise-and-hum ratio (100% modulation)	70 db
FM Harmonic Distortion (400 cps, 100% mod.)	0.5%
Calibration Accuracy	0.2%
FM Stereo Channel Separation (at 1 kc)	35 db
THE AM TUNER:	
Sensitivity (for 2 watts output, at 1 Mc)	5 microvolts
Selectivity (SHARP position, at 1 Mc)	55 db
THE AUDIO SECTION:	
Music Power Output	80 watts total
Peak Power Output	140 watts total
Harmonic Distortion	
At normal listening levels	0.2%
At rated Music Power output	0.8%
IM Distortion (60/7000 cps, 4:1)	
Each channel (at 33 watts)	0.7%
Frequency Response	
Over-all	25-25,000 cps ± 1.5 db
Power amplifier section	5-45,000 cps +0, −2 db
Hum and Noise	
(High Level Input, below rated output)	80 db
Power Line Requirements	105-120 volts, 50/60 cycles
Total Power Consumption (at 117 volts)	330 watts, 380VA (at low volume) 395 watts, 460VA (at full audio output)

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