OPERATING INSTRUCTIONS AND WARRONTY



# THE FISHER.

Philharmonic

MODEL P-291

Stereophonic Radio-Phonograph

PRICE \$1.00

WORLD LEADER MWWsfishereonselesnoon HIGH FIDELITY

### CONGRATULATIONS!

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

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

PRINTED IN U.S.A.

1937 First high-fidelity sound systems featuring a beam-

@ 1964 FISHER RADIO CORPORATION

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

1961 First complete receivers with Multiplex.

### FISHER FIRSTS - Milestones in the History of High Fidelity Reproduction. 1956 First dual dynamic limiters in an FM tuner for home

1937	First high-fidelity sound systems featuring a beam-	1956	First dual dynamic limiters in an FM tuner for nome		First complete receivers with multiplex.
1307	power amplifier, inverse feedback, acoustic speaker		use.	1961	First FM-Stereo-Multiplex tuners with STEREO BEAM.
	compartments (infinite baffle and bass reflex) and	1956	First Performance Monitor in a high quality ampli-	1961	First loudspeaker system with frameless woofer
			fier for home use.		cone, eliminating all parasitic resonance.
	magnetic cartridges.	1956	First FM-AM tuner with TWO meters.	1961	First internal switching system to permit immedi-
1937	First exclusively high fidelity TRF tuner, featuring	1956	First complete graphic response curve indicator for	1301	ate tape playback with use of all controls and
	broad-tuning 20,000 cycle fidelity.	1930			switches.
1937	First two-unit high fidelity system with separate		bass and treble.		
	speaker enclosure.	1957	First Golden Cascode FM Tuner.	1962	First simplified-operation Control-Amplifier, with in-
1938	First coaxial speaker system.	1957	First MicroRay Tuning Indicator.		frequently used controls behind a front-panel cover,
1938	First high fidelity tuner with amplified AVC.	1958	First Stereophonic Radio-Phonograph with Magnetic		yet immediately accessible.
	First 3-Way Speaker in a high fidelity system.		Stereo Cartridge.	1962	First loudspeaker with eddy-current-damped voice
1939	First Center-of-Channel Tuning indicator.	1959	First high-quality Stereo Remote Control System.		coil.
1939	First Center-or-channel running indicator.	1959	First complete Stereophonic FM-AM Receiver (FM-	1962	First bass speaker with combined serrated-alumi-
1945	First Preamplifier-Equalizer with selective phono-	1303	AM tuner, audio control, 40-watt amplifier).	1302	num and fiber cone.
	graph equalization.	1050	First high-compliance plus high-efficiency free-	1000	First FM Tuner Kit with separate d'Arsonval meter
1948	First Dynamic Range Expander with feedback.	1959	nieten eneeker evetem	1962	
1949	First FM-AM Tuner with variable AFC.		piston speaker system.		for tuning and separate cathode ray stereo broad-
1952	First 50-Watt, all triode amplifier.	1960	First to use MicroRay for FM tuning and as a Record-		cast indicator (STEREO BEAM).
1952	First self-powered Master Audio Control.		ing Audio Level Indicator.	1962	First Stereophonic FM Tuner with TUNE-O-MATIC
1953	First self-powered electronic, sharp-cut-off filter	1960	First complete stereo FM-AM receiver with 60-watt		Motor Tuning.
1333	system for high fidelity use.		power amplifier and new 7591 output tubes.	1962	First Supersonic Wireless Remote Control in a high
4050	First Universal Horn-Type Speaker Enclosure for any	1960	Smithsonian Institution, Washington, D.C. accepts	1302	fidelity component.
1953			for its collection America's first commercially man-	1000	First to use 8417 tubes with unique cavity-anode
	room location and any speaker.		ufactured high fidelity radio-phonograph, made by	1963	
1953	First FM-AM Receiver with a Cascode Front End.		Avery Fisher in 1937.		design.
1954	First low-cost electronic Mixer-Fader.	4000	First reverberation device, for use in high fidelity	1963	First power amplifier to use oscilloscope-type, fre-
1954	First moderately-priced, professional FM Tuner with	1960			quency compensated input circuit.
	TWO meters.		equipment—The Fisher Dynamic Spacexpander.	1963	First amplifier kit with STRATABALANCE, visual dy-
1955	First Peak Power Indicator in high fidelity.	1960	First stereo tuner with MicroTune.	,,,,,	namic balancing system.
1955	First Master Audio Control Chassis with five-position	1960	First FM tuner with six IF stages.	1964	First multiplex adaptor with 'flywheel synchroniza-
1000	mixing facilities.	1960	First FM tuner with five limiters.	1904	tion.' Closely approaches theoretical limit of noise
1955	First correctly equalized, direct tape-head master	1960	First front panel antenna selector switch, 72-300		rejection and of all engrious responses
1933	audio controls and self-powered preamplifier.		ohm, Local-Distant positions.		rejection, and of all spurious responses.
4050	First to use Power Monitor in a home amplified.	A 198	First Moltiplex anites with STEREO BEAGON and	1964	First AFC with strong locking on weak signals, with
1956	First All Transistorized Preamplifier-Equalized	VV	Sine woonsoles. Com		no pull-in from adjacent strong signals.
1956	First All-Transistorized Preamplifier-Equalize VVV				



### THE FISHER PHILHARMONIC

MODEL P-291

Stereophonic Radio-Phonograph

The magnificence of old-world cabinet craftsmanship has been combined with the latest products of advanced electronics engineering to create the new FISHER *Philharmonic* — a musical instrument that meets the most exacting criteria. Each section in the *Philharmonic* has been designed to meet the laboratory standards that distinguish all FISHER components. The unusually sensitive tuner can be used for AM and FM, and for multiplex FM stereo reception, with its built-in multiplex circuitry. Six controls enable you to select any program source instantly and to adjust volume and tonal characteristics to your taste. The renowned Garrard record changer and diamond stylus cartridge faithfully convey every musical nuance of monophonic or stereophonic records. Special connections are provided for the FISHER

WS-1 Wide Surround speakers. Twenty watts of music power, free of all audible distortion, are supplied by a dual-channel stereophonic power amplifier which reproduces a complex orchestral passage as easily as the delicate tones of an oboe. Two acoustically-balanced three-way speaker systems recreate the dynamics and spaciousness of the modern orchestra as only stereophonic sound reproduction makes possible.

Flawless circuitry, the use of costly, carefully selected materials, and unhurried manufacture—essential constituents of quality which are too often lost in mass production—all of these will contribute to years of trouble-free operation and to your greater listening pleasure. These are the attributes which have, for over twenty-five years, created the world-wide FISHER reputation.

### TABLE OF CONTENTS — SEE PAGE 2 WWW.TISherconsoles.com

### TABLE OF CONTENTS

	PAGE
INSTALLING THE PHILHARMONIC	4
THE CONTROLS	4
ACCESSORIES	8
ANTENNAS	8
REPLACING THE DIAL LAMPS	9
PRESERVING THE PHILHARMONIC'S FINISH	9
FOR THE TECHNICALLY-MINDED	9
TECHNICAL SPECIFICATIONS	11

### 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 ultrasonic signal, in addition to the main signal. By combining these two signals in a multiplex decoder, 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

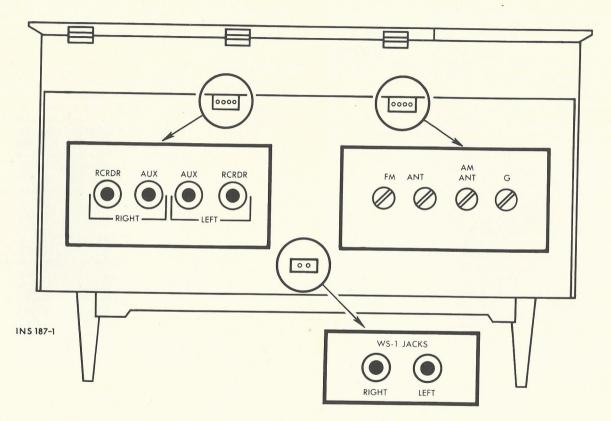


FIGURE 1. Rear View of the Philharmonic

www.fisherconsoles.com

on your right, and vice versa. Thus, keeping the channels totally apart from the original recording sessions 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 illusion of great depth and spaciousness, such as is normally obtained only at a live performance.

### INSTALLING THE PHILHARMONIC

Please read these instructions carefully before you begin using your *Philharmonic*. This booklet was prepared with you in mind, to help you become familiar with the controls. Correct installation and an understanding of what each control does is important in obtaining the fullest enjoyment from your FISHER *Philharmonic*.

The *Philharmonic* operates on *AC only*. Plugging it into a DC outlet will result in serious damage. The power cord extending from the back of the cabinet should be connected to a wall outlet supplying 105 to 120 volts AC at 50 or 60 cycles. The 60-cycle current is available in almost all areas of the United States; but if you are in any doubt about your power source, we suggest you call your local utilities company to make sure.

In the rare case that you have 50-cycle AC in your location, you will need a special adaptor pulley so that the Record Changer will revolve at the correct speed. Check with your FISHER dealer.

### The Record Changer

During transit, the Record Changer is held firmly to its mounting board by two flat-head screws — one in the left rear corner of the Changer baseplate, the other near the right front corner, just behind the control levers. To prepare the Changer for use, these screws should both be turned *clockwise* as far as they will go without using force. When this is done, the Changer baseplate will "float" about a half inch above the mounting board, and should bounce freely up and down under hand pressure. The purpose of

this shock mounting is to prevent cabinet vibrations and jolts from causing the stylus to skip around the record grooves.

Remove the rubber bands used to secure the pickup arm and record overarm.

### The Antennas

There are two antennas already built into the *Philharmonic:* one for AM and one for FM. The AM antenna is a ferrite-core loop, mounted on the chassis. It will provide excellent reception of AM stations in almost all cases without the aid of an external antenna.

The FM antenna is made of 300-ohm "twin lead"; the same material used for TV antenna lead-in wire, cut and wired especially for use as an FM antenna. You will find it stapled to the back of the cabinet. It will give excellent results on both stereophonic and monophonic FM broadcasts, except possibly in extreme fringe areas. If you have difficulty with FM reception, consult "ANTENNAS" on page 8 of this manual.

### THE CONTROLS

On the next page there is an illustration of the dress panel of your *Philharmonic*, with all markings and controls shown. The controls have been set at the factory to the positions shown so that you can use your *Philharmonic* as soon as it is installed. We urge you, though, to read the following section in a careful and leisurely way so that you will know what each control does and how to use it to your benefit. You will find it helpful to refer to Figure 2 as you read, or, better still, to operate the controls themselves and become familiar with them.

### Selector Switch

This switch permits you to choose among the various types of program material to which you may listen with the *Philharmonic*. The positions and their functions are as follows:

AM - Use this position to receive standard AM broadcasts.

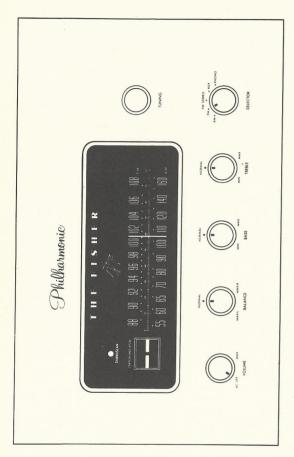


FIGURE 2. Dress Panel of the Philharmonic

**FM** – In this position, your *Philharmonic* will receive monophonic FM broadcasts. If stereo signals from weak or very distant stations are objectionably noisy, their quality can usually be improved by receiving them monophonically with the Selector switch turned to this position.

**FM STEREO** – This position sets the *Philharmonic* to receive stereophonic FM broadcasts. The Selector switch should be set to this position *only* for stereo reception.

NOTE: The presence of stereo broadcasts is indicated by the StereoScan lamp, described below.

**AUX** — When the Selector switch is set to this position, the *Philharmonic* will reproduce a high-level signal from an external source, fed into the AUX INPUT jacks on the receiver chassis. Such a source might be a tape recorder, electronic organ, television set, or other similar device. See the section of this manual entitled *ACCESSORIES* before connecting any component to the *Philharmonic*.

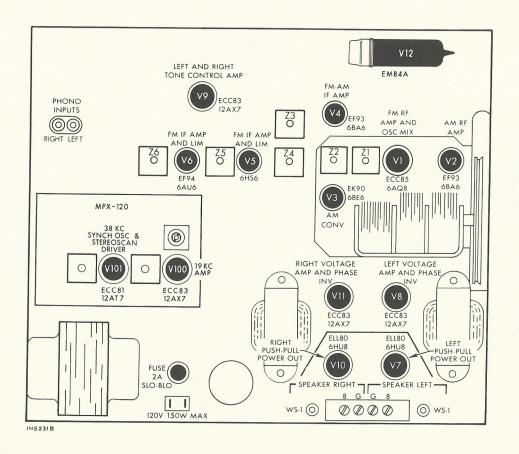
**PHONO** — With the switch in this position, you can play either stereo — or monophonic records on the Changer in the *Philharmonic*. When you play a stereo disc, the left and right channels will be fed to the corresponding speaker systems, for full stereo effect. With a monophonic recording, the same sound will be heard from both speakers. This is not stereo, since the source is monophonic, but reproduction will be greatly enhanced by playback through two sets of speakers.

When the Selector switch is turned to this position, your *Philharmonic* will shut off automatically after the last record is played. The automatic shutoff feature is only effective in this position of the Selector switch. To play a new stack of records, simply place them on the changer and move the lever on the right of the changer to REJECT.

### Power On-Off and Volume Control

This control combines the functions of power switching and volume. In the AC OFF position, power to the entire set is shut off.

FIGURE 3. The Receiver Chassis



www.fisherconsoles.com

Turning the control slightly clockwise until it clicks turns the power on. You will see the tuner dial light up, and the jewel indicator at the base of the *Philharmonic* will also be illuminated. Wait about 30 seconds for the tubes to reach operating temperature. Turning the control further clockwise increases the total sound volume from both speakers.

*NOTE:* When the set is on and the Selector switch is in the PHONO position, the built-in automatic shutoff of the *Philharmonic* is in operation. The unit will then only operate as long as the turntable is in motion, even though the Volume control is on.

### **Balance Control**

You can use this control to obtain equal volume from both speaker systems in the *Philharmonic*; and, in general, to vary the volume of the right speaker system relative to the left. For a natural stereo effect, balanced separation is important; neither side should predominate over the other any more than it did during the original performance. Normally, this control will be in the center, or NORMAL position, although small variations to either side are to be expected because of differences in room acoustics or imbalance in the program material. Turning the control toward MAX-R will increase the volume of the right speaker relative to the left; turning it toward MAX-L will increase the left speaker volume over the right.

### **Treble and Bass Controls**

With these controls you can adjust the tone quality of the sound to suit your tastes, or to compensate for deficiencies in the program material. The Bass control affects the low-frequency portion of the sound spectrum, leaving the midrange and treble unchanged. Turning this control toward MAX boosts the bass; turning it to MIN attenuates it. Any intermediate degree is available. The Treble control boosts the high frequencies relative to the middle and lower notes when it is turned toward MAX, and attenuates them toward MIN, in the same manner as the Bass control. Both

controls have NORMAL positions, and when they are set there, the *Philharmonic* will reproduce the entire frequency range exactly as transmitted or recorded. This is where the controls should generally be set, but since their use is chiefly a matter of taste, we suggest that you experiment to find the settings which suit you best. The controls vary treble and bass in both channels simultaneously.

### Tuning

Use this knob to select the AM and FM stations you want to receive. This knob is used for tuning both AM and FM stations (which band is tuned depends upon the position of the Selector switch, described above). The Tuning control operates in conjunction with the Station Indicator and StereoScan lamp, described below.

The FM markings are uppermost on the dial scale; the scale nearest you is for AM. Between them is a 'logging scale', calibrated in linear fashion from 0 to 100, which you may use to locate either AM or FM stations, by noting the position of the dial pointer along the logging scale. Many people find this method more convenient than remembering the exact station frequencies.

### Station Indicator

The Station Indicator is a specially-constructed tube that permits you to tune quickly and precisely to the point of best reception (center of channel) for any AM, FM or FM-Stereo station. To reach this center-of-channel point, always tune to bring the indicator's two bright bars as close together as possible. Note that the Station Indicator goes off when you use either the AUX or PHONO positions of the Selector switch.

### StereoScan Lamp

This lamp, which operates only when the Selector switch is in the FM or FM STEREO position, is illuminated when the *Philharmonic* is tuned to a stereo broadcast. To receive the broadcast

in stereo, simply set the Selector switch to the FM STEREO position.

NOTE: We suggest that you do not receive monophonic broadcasts with the Selector switch in the FM STEREO position, since there may be a noticeable hiss present in the background. For monophonic FM, switch to FM.

### **ACCESSORIES**

Your *Philharmonic* is provided with jacks for connecting several additional high fidelity components: a tape player or tape recorder for stereo or mono tapes; any high-level stereophonic source, or monophonic TV sound if the two AUX INPUT jacks are connected together, and a pair of FISHER WS-1 Wide-Surround® speakers.

These jacks are all accessible from the back of the *Philhar-monic*. Please refer to Figures 1 and 3 while you read what follows.

### Tape Recorder

You can record any mono or stereo program on tape with the *Philharmonic*. The jacks labelled RCRDR (RIGHT and LEFT) on the back of the Receiver chassis will feed independent left and right stereo signals to a tape recorder. Whatever source is selected by the Selector switch on the *Philharmonic* panel will appear at these jacks, but the Volume, Bass and Treble controls have no effect on the recorded signal. Thus you can record in complete silence, if you wish, by turning the *Philharmonic's* Volume control all the way down, or set the Volume control anywhere you like for pleasant listening, using the tone controls, too, without any effect on the recording. Recording volume is controlled only by the appropriate knob on the recorder itself.

### **Auxiliary Sources**

A pair of auxiliary input jacks, labelled AUX, one for each channel, is located at the top of the rear chassis skirt. These are high-

impedance, high-level inputs, suitable for audio from a tape player (or playback from a tape recorder), TV sound, an electronic organ, or any other stereo or mono high-level source. If the source is monophonic, the right and left channel AUX inputs must be fed together with the same signal, otherwise sound will be heard from only one side of the *Philharmonic*. This can be done by using a "Y-connector", about which your dealer or TV repairman can advise you.

In order to play tapes on a player or recorder through the *Philharmonic*, the player or recorder must already contain the necessary preamplifier and equalizer circuits. If you are in doubt, consult the instruction manual which accompanies your tape recorder.

### **ANTENNAS**

Your *Philharmonic* has two built-in antennas, one for AM and one for FM. These will suffice for all monophonic and stereophonic reception except under very unusual conditions: an extreme "fringe" area or one where a great deal of interference prevails. In such cases, an outdoor or attic antenna may be required, especially for FM-multiplex stereo reception. If you wish you can also experiment with an external AM antenna.

Figure 1 includes the Antenna Terminal Identification Strip located on the back of the *Philharmonic* cabinet. It will be helpful to refer to it as you read.

### **FM Antenna**

An outdoor or attic antenna will often make a world of difference in the quality and reliability of reception. We suggest you see your dealer or TV serviceman for detailed information about makes and types. If you use an external antenna, first disconnect the two lugs of the *built-in* antenna from the terminal screws marked FM ANT, and then connect the wires from the *new* antenna to these same terminals. Under some conditions, use of an outdoor antenna may increase the input signal to the point where it causes

overloading of the FM tuner. When this condition is present, a strong FM station may appear at several points of the FM band. To prevent overloading, remove the lead from the outdoor antenna and reconnect the internal antenna of the *Philharmonic*.

Often a TV antenna will serve very well for FM reception, both mono and stereo. Since the relative success or failure of an attempt to use a TV antenna for FM is subject to many unpredictables, all we can say definitely is that it is worth a try. If it appears to improve reception, purchase a good-quality two-set coupler so that you can use the same antenna for your TV set and for the *Philharmonic*.

Since FM-multiplex reception requires more signal at the antenna terminals than monophonic FM, you may find that stereophonic broadcasts are noisy even though monophonic programs from the same station are quiet. If this is the case, you may need to relocate your FM antenna, reorient it, or use one with higher gain or directional properties.

When you use a directional antenna (many TV antennas are of such a design), you will often obtain good reception from one compass direction only; if this is true in your case, you may need a rotator for your antenna.

### **AM Antenna**

A suitable AM antenna can be anything from a few feet of wire strung behind a picture molding or draped behind the cabinet, to an elaborate "long-wire" array on poles outdoors. A complicated system is generally unnecessary, however, and it may cause overload and distortion of the sound. If you wish to use an external antenna for AM reception, loosen the screw marked AM and the one marked with a ground symbol, both on the antenna terminal strip. The "jumper" link should swing free. Tighten the ground screw to keep the link from rattling, and make sure that the link is not touching the AM terminal screw. This AM terminal is now free for the connection of an AM antenna wire.

### REPLACING THE DIAL LAMPS

Three #1847 bulbs are used. To replace any one of them, remove the composition board rear panel of the *Philharmonic*. The bulb assemblies can then be reached from the rear. Squeeze the metal clip that holds the bulb assembly to the chassis and pull downward. Once the assembly has been removed from the chassis the bulb can be detached by turning it counterclockwise.

CAUTION: As a safety precaution, disconnect the power cord before removing the back panel of the *Philharmonic*.

Lamps can be ordered from Fisher Radio Corporation, 21-21 44th Drive, Long Island City 1, New York, as Part No. I50009-7.

## PRESERVING THE PHILHARMONIC'S FINISH

The fine-grain veneers and smooth satin finish of your new FISHER console are an indication of the care and craftsmanship that have gone into its construction. To maintain its rich highlights and deep luster for years to come, we recommend that you dust the entire surface regularly with a soft, clean, lint-free cloth and that, when polishing, you use a high quality polish such as OZ or GUARDS-MAN.

### FOR THE TECHNICALLY-MINDED

The Fisher *Philharmonic* is a high fidelity stereophonic radiophonograph console, incorporating a tuner capable of receiving AM, FM, and FM-multiplex stereo broadcasts, a preamplifier, a power amplifier, and two matched speaker systems.

The FM tuner portion uses an ECC85/6AQ8 in its "front end," with the first half of this dual triode tube used as a grounded-grid RF amplifier, and the second half as a local oscillator and mixer.

The mixer produces the 10.7 megacycle intermediate frequency (IF) which is amplified by three IF stages. The last two IF stages also operate as limiters, effectively removing any spurious amplitude variations that may have affected the FM signal, and thus providing the noise-free reception which contributes so much to the popularty of FM. A wide-band, low-distortion ratio detector follows the limiter, using two matched semiconductor diodes.

The multiplex section extracts separate left and right channels from the multiplex-stereo signal transmitted by the radio station. In all FISHER tuners, decoding is accomplished by the far superior time-division switching technique, resulting in better separation than available with other methods, less noise, and greater long-term stability.

Turning to the AM portion of the tuner, we find a tuned RF amplifier stage (EF93/6BA6), which puts the sensitivity and selecivity of this tuner far above most conventional AM radios. Conversion to the 455 kc IF is accomplished in an EK90/6BE6 mixeroscillator. The broad-band IF stage combines excellent selectivity with AM fidelity far superior to that of ordinary radios.

In the control portion of the Receiver chassis we find the switching center of the *Philharmonic*. Here are the tone controls, providing 17 db total variation of bass and treble; the Volume and Balance controls; and the Selector switch, which selects any one of five possible program sources or modes of operation.

Loudness compensation is provided automatically to minimize apparent loss of bass and treble at low volumes due to normal characteristics of the human ear. Output jacks are provided for feeding a tape recorder with a signal unaffected by tone or Volume control settings.

The two identical power-amplifier sections (one for each three-way speaker system) produce a total of twenty watts undistorted music power. Each section consists of a low-noise voltage amplifier, a precisely balanced split-load phase inverter and a *push-pull* power amplifier using a special ELL80 dual beam-power tube. A moderate amount of negative feedback is applied from each output transformer to its corresponding voltage amplifier; this reduces distortion and noise and smoothens frequency response.



### **TECHNICAL SPECIFICATIONS**

Music Power Output (IHF standard, both channels)	20 watts	FM Tuner Sensitivity (IHF standard)	2.3 microvolts
Peak Power Output	36 watts	AM Tuner Sensitivity	5.0 microvolts
Harmonic Distortion at Rated Music Power Output	1.0%	•	
Frequency Response	Uniform throughout audible range as an integrated system	Speaker Complement (each channel)	One 8" woofer One 5" midrange unit One 2" tweeter
FM-multiplex Stereo Separation	Better than 30 db at 1 kc	Record Changer	Garrard AT-60
(Amplifier Channel Separation)	50 db at 1 kc		
Sensitivity (AUX and TAPE inputs, for Rated Output)	320 millivolts	Total Power Consumption (including Changer)	100 watts, 110 VA

BECAUSE ITS PRODUCTS ARE SUBJECT TO CONTINUOUS IMPROVEMENT, FISHER RADIO CORPORATION RESERVES THE RIGHT TO MODIFY ANY DESIGN OR SPECIFICATION WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION.

### LOGGING CHART

FM			АМ		
STATION	MPX	LOGGING SCALE NUMBER	STATION	LOGGING SCALE NUMBER	

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

N1325-102A

### 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 factorydesignated 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 CORPORA-TION within ten (10) days from the date of purchase.

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

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

FOR WARRANTY SERVICE, CONSULT YOUR DEALER

Mailed in the

Addresse

× CITY, ISLAND LONG 4 H 493, 2 Š. S H CLASS PERMIT S 8 FIRST

# RADIO CORPORATION

21-21 44th Drive

FISHER

N.Y. 11101 City, Long Island



### PROTECT YOUR PURCHASE!

Please complete and return this

### WARRANTY CARD

FIRST NAME

PLEASE PRINT

	THO WANE	INITIAL		
USER'S HOME ADDRESS				
CITY		STATE		
MODEL NO.	DATE OF PURCHASE	SERIAL NO.		
P-291	• •			
Name of Dealer				
City	Sta	ate		
I first heard of THE FI		one box only)		
If purchased because publication:		se give name of		
chose THE FISHER I	pecause:			
What I think of my FIS	HER equipment:			
☐ You may quote me	•			
also own these addition	nal hi-fi units and spea	kers:		



### THE MAN BEHIND THE PRODUCT

AVERY FISHER
Founder and President,
Fisher Radio Corporation

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

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

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