

# OPERATING INSTRUCTIONS



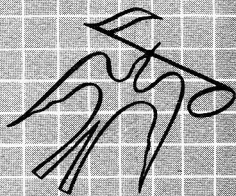
**CUSTOM ELECTRA III**

*Stereophonic*

**HIGH FIDELITY  
RADIO-PHONOGRAPH**

**MODEL 440**

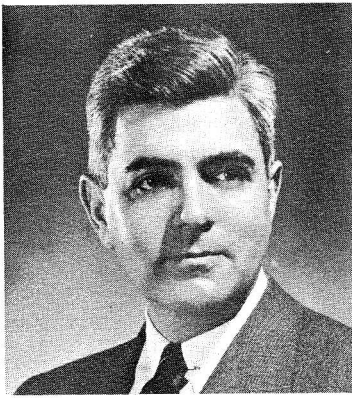
# THE FISHER



**STEREOPHONIC**

[www.fisherconsoles.com](http://www.fisherconsoles.com)

PRICE \$1.00



**AVERY FISHER**  
*Founder and President,  
 Fisher Radio Corporation*

## The Man Behind the Product

**O**VER 20 YEARS AGO, Avery Fisher introduced America's first high fidelity radio-phonograph. That instrument attained instant recognition as heralding a new era in the enjoyment of reproduced music. A number of the features of that early high fidelity radio-phonograph were so basic that they are used to this day in all high fidelity equipment. The engineering achievements of Avery Fisher and the world-wide reputation of his products have been the subject of articles in *Fortune*, *Time*, *Pageant*, *The New York Times*, *Coronet*, *Life*, *High Fidelity*, *Esquire*, and other publications.

Benefit concerts for the National Symphony Orchestra in Washington and the Philadelphia Orchestra, demonstrating the great advances in reproducing equipment, used FISHER instruments to play back the recordings that had just been made in the presence of the audience. "Fascinating evening, acoustically and musically," was the *Philadelphia Inquirer's* comment, "the reproduction had remarkable fidelity." *TIME* magazine stated, "Listeners could hardly tell the difference between real and electronic."

The FISHER instrument you have just purchased has been designed to give you many years of pride and enjoyment. It is the product of a company dedicated to bringing reproduced music in its finest form, to the homes of America. If at any time you should desire information or assistance regarding the performance of your FISHER instrument, please do not hesitate to write directly to Avery Fisher, President, Fisher Radio Corporation, Long Island City 1, New York. Your communications will be welcome.

### FISHER 'FIRSTS' – Milestones In Audio History . . .

- 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 Dynamic Range Expander.
- 1939** First 3-Way Speaker in a high fidelity system.
- 1939** First Center-of-Channel Tuning Indicator.
- 1945** First Pre-amplifier-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 Cascade Front End.
- 1954** First low-cost electronic Mixer-Fader.
- 1954** First moderately-priced, professional FM Tuner with TWO meters.
- 1955** First Peak Power Indicator in high fidelity.
- 1955** First Master Audio Control Chassis with five-position mixing facilities.
- 1955** First correctly equalized, direct tape-head master audio controls and self-powered preamplifier.
- 1956** First to incorporate 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 Gold Cascade FM Tuner.
- 1957** First MicroRay Tuning Indicator.
- 1958** First Stereophonic Radio-Phonograph with Magnetic Stereo Cartridge
- 1959** First high-quality Stereophonic Remote Control System.
- 1959** First complete Stereophonic FM-AM Receiver (FM-AM tuner, audio control, 40-watt amplifier).

# THE FISHER Custom Electra III

## Model 440 Stereo Radio-Phonograph

### INTRODUCTION

The Custom Electra III Model 440 is a complete radio-phonograph system designed to play all stereophonic and monophonic records and to receive FM, AM and FM-AM stereo broadcasts. The unit consists of a 610 receiver chassis, a 30-A power amplifier chassis, a four-speed record changer, and two matched speaker system — all housed in an attractive console cabinet. Input connections are provided to play a tape recorder or other high-level sound source through the Custom Electra system. No additional amplifiers or speakers are required for stereophonic or monophonic sound reproduction.

THE FISHER Custom Electra III system is capable of providing more than ample volume for all your needs without distortion, and the easy-to-use Stereo Control Center permits the sound to be adjusted to your personal tastes. THE FISHER FM-AM receiver is renowned for its extreme sensitivity, assuring you of high-fidelity reception even in extreme fringe areas. Your phonograph records, stereophonic and monophonic, are safely and properly reproduced on the world-famous Garrard four-speed automatic record player. To the Garrard, FISHER has added a stereophonic cartridge equipped with a *diamond* LP stylus for long record life and minimum record wear, with a flip-over stylus for playing 78 rpm discs. This cartridge is of the compatible type, which means that it will play either stereo or monophonic recordings.

The ease with which you can utilize the many wonderful features of THE FISHER will be readily apparent when you have read the concise, yet complete, instructions on the pages that follow.

### STEREOPHONIC SOUND

In monophonic high fidelity systems, the reproduced sound has all the characteristics of the original performance — with two exceptions. These are *direction* and *distance*. With the advent of stereophonic high fidelity systems, *all* the characteristics of live sound are now capable of being reproduced in the home or auditorium. THE FISHER Model 440 constitutes a complete stereophonic system.

Reproduction of the live sound characteristics of direction and distance are made possible by the use of *two* sound sources and *two* sound channels. For example, two microphones are placed before an orchestra so that they "hear" the music as we would, with both ears. What is picked up by each microphone is then recorded separately and independently on record or tape, or broadcast as a stereo radio program. The stereo program is then reproduced through two separate sound channels. The sound originally picked up by the microphone on the right is used to drive a speaker system on your right, while the sound picked up by the microphone on the left simultaneously drives a speaker system on your left.

The effectiveness of stereophonic sound in achieving realism is much greater than might be imagined on the basis of the simple explanation just given. The stereo system actually spreads out the orchestral sound in the same manner as it would emanate from the stage. In other words, instruments located at center stage are heard at a point midway between the speakers. The other orchestral instruments can be located accordingly from left to right. This results in a realism and clarity never before possible in high fidelity systems.

Stereophonic sound programs are now available on phonograph records and magnetic tapes and may also be heard on three types of stereo broadcasts: FM-AM, FM-FM and FM multiplex. The Custom Electra has been designed to permit you to listen to all of these stereo sources as well as to standard monophonic programs.

## INSTALLATION

THE FISHER operates on *AC only*. The AC Power Cord at the back of the instrument must be connected to a line receptacle supplying 105 to 120 volts at 60 cycles. A step-up transformer can be used where the line voltage is lower, a step-down transformer where it is higher. THE FISHER can be modified for 50-cycle operation by means of an adaptor for the record changer, which is available from your Fisher dealer. Total power consumption is 245 watts. A 2-ampere Slo-Blo fuse is used to safeguard the 610 chassis and a 1-ampere Slo-Blo fuse protects the A-30 chassis. *Never insert a fuse of rating higher than specified, or severe damage may result.*

### **record changer . . .**

Be sure that the shipping screws designated by red and white tags have been removed. This is normally done when the instrument is delivered and set up. Be sure that the pro-

TECTIVE cover on the underside of the phonograph cartridge has been removed, exposing the stylus. If it has not, hold the pick-up arm firmly and remove the cover guard with a fingernail.

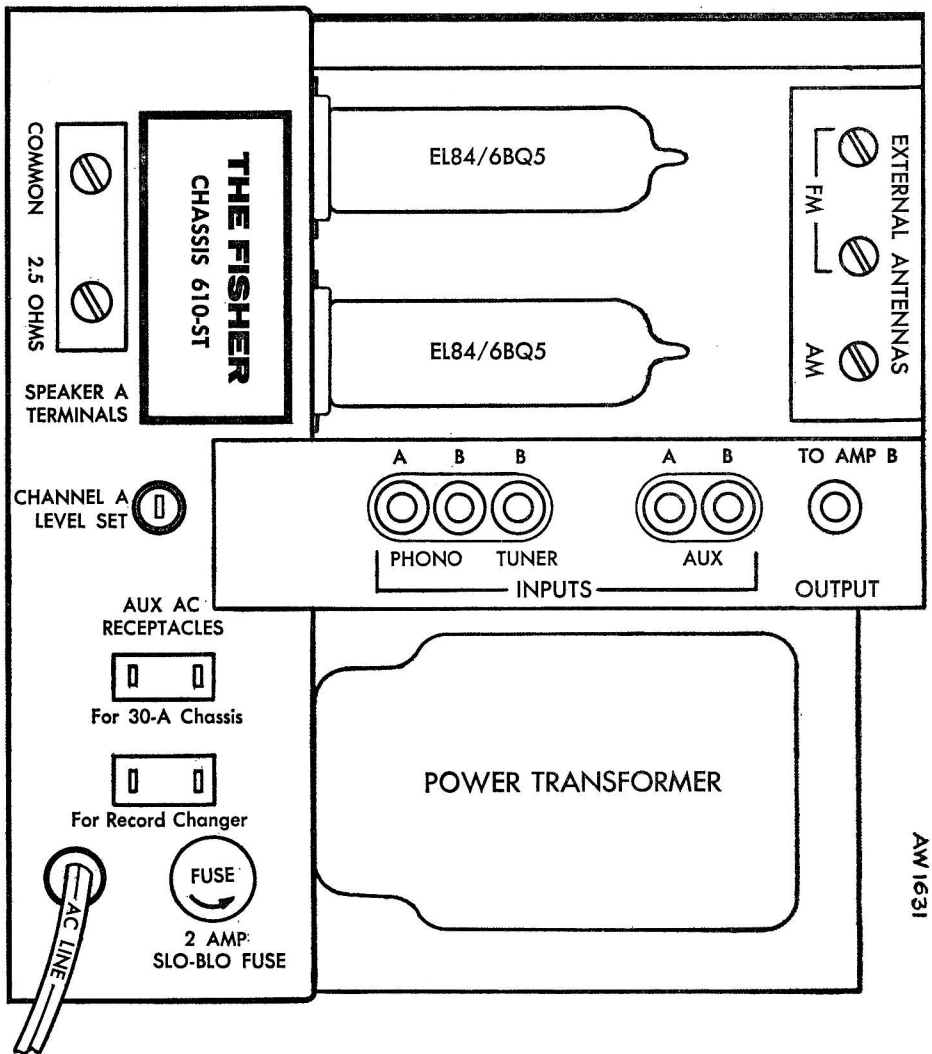


FIG. 1: Rear panel of 610 chassis.

The Record Changer should ride on its shock mounts. This can be verified by depressing each side of the Record Changer. Consult your FISHER Dealer if the changer does not move downward under hand pressure.

### antenna installation . . .

The Custom Electra Model 440 is equipped with built-in antennas for both FM and AM reception. The FM antenna is a 300-ohm folded

dipole; the AM antenna is a special ferrite loopstick. Both antennas should provide excellent reception in virtually all listening areas.

In extreme fringe signal areas, however, an external FM or AM antenna may sometimes be necessary. To install an FM roof antenna, disconnect the FM dipole from terminals 1 and 2 of the antenna terminal strip (see Figure 1) and connect the lead-in of the external antenna to the same terminals. A roof antenna for AM use is connected to terminal 3 of the antenna

strip. The ferrite loopstick need not be removed.

Note! The FM section of your receiver may also be fed from your TV antenna by means of a two-set coupler. See your Fisher dealer or service man for making this installation.

### input connections . . .

The Fisher Custom Electra Model 440 is shipped from the factory with all components properly connected to permit you to listen to monophonic and stereophonic records as well as to FM and AM radio broadcasts. In addition, connections are provided on the 610 chassis at the rear of the cabinet as shown in Figure 1. These are for plugging in an external tuner for stereo broadcasts, as well as a tape recorder or some other high-level program source. Auxiliary sound sources are connected as described below.

**PHONO INPUTS:** The Phono A and B Inputs are for connecting the record changer to the 610 chassis. These connections are made at the factory so that the Channel A stereo component is heard in the speakers on the left and the Channel B portion in the speakers at the right.

If the leads from the record changer should be disconnected for any reason, make sure they are replaced as they were originally connected so that the channels are not reversed.

**TUNER INPUTS:** The Tuner B input is used to connect an external tuner to the Custom Electra system to provide the B channel of a stereo broadcast. For FM-AM programs, connect an AM (or FM-AM) tuner to the Tuner B Input. For FM-FM broadcasts, an FM (or FM-AM) tuner is plugged in.

The external tuner operates in conjunction with the FM tuner section in the 600 receiver to provide a stereo broadcast. The portion of the program supplied by the 610 receiver is heard in the speakers on the left; the portion supplied by the external tuner is heard in the right-hand speakers. The Tuner B Input may also be used for making connections for an FM multiplex adaptor, as described below.

**AUX INPUTS:** The auxiliary inputs are used for connecting a tape recorder, a shortwave tuner, or other high-level program source to the Electra sound system. A stereo tape recorder must be connected to *both* the AUX A and AUX B inputs. A monophonic or other single-

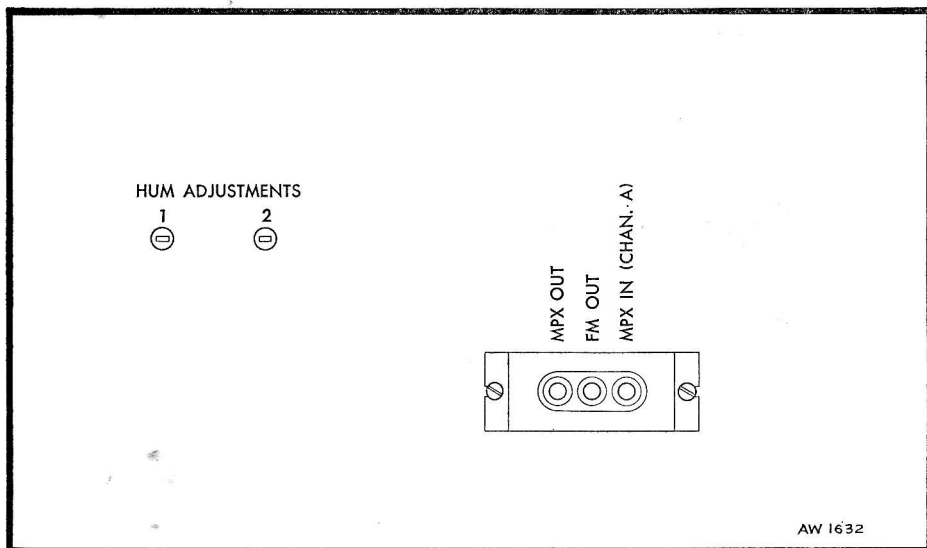


FIG. 2: Top view of 610 chassis showing hum adjustments and multiplex connection bracket.

channel sound source is connected to the AUX A input only. The auxiliary sound source, whether stereo or monophonic, will be heard in both speakers.

Note: The sound portion of a TV broadcast may also be connected to the Channel A Aux Input. *Caution!* This connection should be made only by a qualified technician.

### **multiplex connections . . .**

A multiplex jack bracket is located on the 610 chassis, as shown in Figure 2. The three jacks on this bracket are for making connections to a multiplex adaptor, such as the Fisher MPX-10, which permits you to receive the new Crosby multiplex stereo broadcasts.

The MPX OUTPUT jack at the left is connected to the Multiplex Input on your adaptor. A low-capacitance cable must be used for making this connection.

The CHANNEL A MPX INPUT jack at the right is used to connect the Channel A output of the multiplex adaptor. The Channel B output is connected to the TUNER B INPUT on the rear panel of the 610 chassis. Remove the jumper between the MPX INPUT and the FM OUTPUT jacks.

If your multiplex adaptor is equipped with auxiliary inputs for making feed through connections, a cable should be connected between the FM OUTPUT on the multiplex jack bracket and the Channel A Auxiliary Input on your adaptor. The Channel B Auxiliary Input is connected to the output of an external tuner. This provides permanent stereo connections to the Custom Electra, permitting you to receive either FM multiplex or FM-AM stereophonic broadcasts without changing the connections.

For additional information on connecting and operating the FM multiplex adaptor, see the operating instructions furnished with the adaptor or consult your Fisher dealer.

## **OPERATING THE CUSTOM ELECTRA**

All controls required for operating the Custom Electra Model 440 are located on the control panel, which is accessible by lifting the lid of the console cabinet. The functions of the five control knobs are marked on the panel, but to enable you to understand the operation of these controls, a brief description of each is provided below.

### **ac power on-off . . .**

This switch is part of the Volume Control. The OFF position is at the extreme counterclockwise point of rotation of the knob. Turning the knob clockwise from this position results in a click from the control and the lighting of the dial glass lamps, signifying that AC power has been turned on. It also indicates that AC power is being supplied to any auxiliary equipment which may be connected to the Electra. If you have been using the Record Changer, be sure the arm is at rest before turning off THE FISHER.

### **station selector . . .**

This control is used for tuning to either FM

or AM stations. Turning the knob moves the pointer across the scale. Tune to FM stations on the 88-108 Megacycle band, and tune to AM stations on the 550-1600 Kilocycle band. Use the 0-100 Logging Scale for convenient two-digit location of stations.

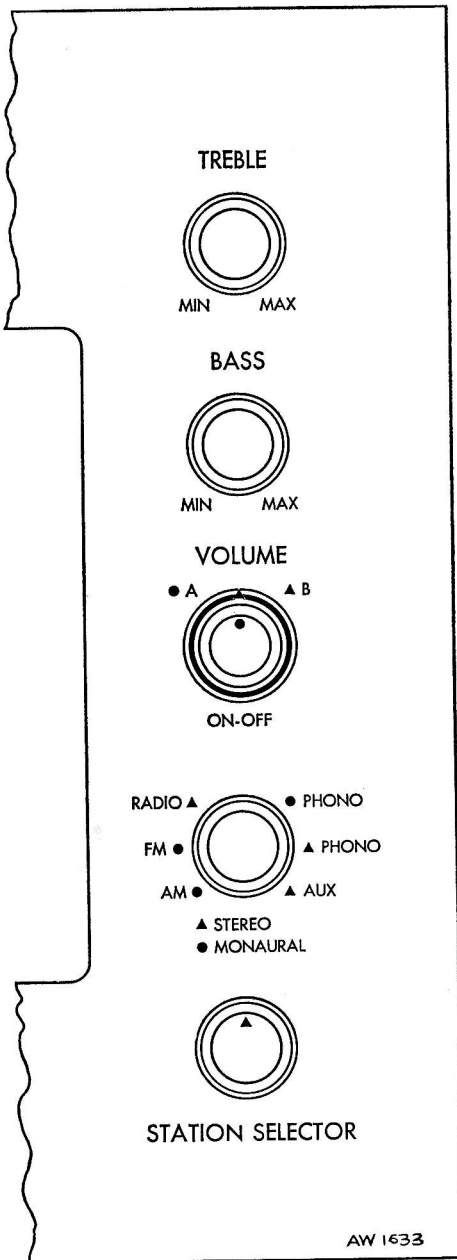
### **channel selector . . .**

The six-position Channel Selector is used to select the type of operation, stereo or monophonic, and the program source.

**AM-MONAUURAL:** Use this position for listening to standard AM radio programs as received by the AM tuner in the receiver chassis.

**FM-MONAUURAL:** This position is used to listen





**FIG. 3: Control panel of Custom Electra Model 440.**

to standard monaural FM broadcasts, as received by the FM tuner in the receiver chassis.

**RADIO-STEREO:** Turn to this position for stereo broadcasts. What you will hear is the FM tuner of the Electra in the left or A speakers, and the tuner source you have connected to the *Channel B* Tuner Input Jack in the B speakers.

**PHONO-MONAURAL:** For playing monophonic disc recordings, switch to this selector position. In this position a standard monophonic disc is heard in both speaker systems.

**PHONO-STEREO:** This is the position to use for playing stereo disc recordings. No adjustment of the record changer is needed.

**AUX-STEREO:** Use this position for listening to the stereo program source you have connected to the Aux Input Jacks on the rear panel, such as stereo tape recorder playback. This position can also be used for a monophonic high-level source by connecting a jumper between the two AUX inputs.

### volume control . . .

The Volume Control is a dual-knob control which permits you to regulate the volume in each channel separately to balance the stereo outputs. The smaller knob, marked with a dot, controls the level in Channel A. The larger knob, designated by a triangle, regulates the volume of Channel B. Turning either knob in a clockwise direction increases the volume of the channel it controls.

The knobs are friction loaded, so that if one is turned the other turns with it. This enables you to regulate the volume of both speaker systems at the same time. If you wish to vary the volume of the Channel A speaker only, hold the large Channel B knob with one hand and rotate the small Channel A knob with the other until the desired level is attained. Reverse the procedure to regulate the volume of the Channel B speakers without affecting the A speakers.

**BASS TONE:** When the gold marker on this knob points straight up, the bass tones are reproduced just as they come from the program source. This is the flat, or uniform response, setting. Bass tone intensity can be reduced by



turning the control toward the MIN position on the left, while turning it toward the MAX position on the right increases it. At high volume, it is best not to use extreme clockwise settings of this control, since distortion of sound may occur.

**TREBLE TONE:** When the gold marker on this is pointing straight up, the treble tones are unaffected. For a more intimate tonal quality, turn the control to the left (toward MIN) to the desired degree. For a more brilliant tone, turn the knob toward the MAX position on the right.

## SERVICE INFORMATION

There are four chassis adjustments which have been set at the factory to provide the best listening results for your Custom Electra. These include two Hum Adjustments on the receiver chassis (see Fig. 2) and a Channel A Level Set on the rear panel (see Fig. 1). The Channel B Level Set is located on the small amplifier chassis.

The Hum Adjustments are used to suppress hum in the speakers, and the Level Sets provide a means of balancing the speaker outputs for stereophonic listening. These adjustments should be made only after extensive tube changes or other servicing work have been made on the Custom Electra.

**HUM ADJUST 1:** With no program being played, turn the Volume Control to minimum. Turn the Channel A Level Set on the rear panel to maximum (clockwise). Turn the Channel B Level Set on the amplifier chassis to maximum (fully clockwise). Using a small, slot-head screwdriver, rotate Hum Adjust 1 for minimum hum from the speakers.

**HUM ADJUST 2:** After setting Hum Adjust 1, turn the Volume Control to maximum. Using a small slot-head screwdriver, set Hum Adjust 2 for minimum hum from the speakers.

**LEVEL SETS:** Turn the Channel A and Channel B Level Sets to maximum position (fully clockwise). Set the Volume Control on the front panel so that both knobs are at mid-position. Play a stereo record through the Electra and note the relative level of the two speaker systems. If the speakers to your left sound noticeably louder, turn the Channel A Level Set down until the two volumes are equal. Make a similar adjustment of the Channel B Level set if the right speaker system is appreciably louder than the left.

Note! The Channel A Level Set, which controls the output of the speakers on the left as you face the Electra, is located on the receiver chassis mounted on the right side of the cabinet. The right speaker system is controlled by the Level Set on the amplifier chassis on the left side of the console.

### at your service . . .

It is the constant desire of Fisher Radio Corporation to have your FISHER give you its best possible performance. Toward that objective, we solicit your correspondence on any special problems that may arise. After you have had an opportunity to familiarize yourself with THE FISHER, we would appreciate your letting us know how it is meeting your requirements.

### your fisher dealer . . .

Be sure to consult your FISHER Dealer *promptly* if any situation arises that indicates a possible defect. Your FISHER Dealer stands ready to assist you at any time.

### **a final word . . .**

Have this booklet handy while you get acquainted with your new FISHER, then keep it in a safe place as a valuable reference to which you can turn.

If any question arises to which you cannot find the answer, please do not hesitate to write us. We'll be glad to hear from you, and a prompt reply will follow.

*Avery Fisher*

**AVERY FISHER,  
PRESIDENT**