

## The Man Behind the Product

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



**T**WENTY-TWO 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.

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 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.

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 performance of your FISHER, please do not hesitate to write directly to Avery Fisher, President, Fisher Radio Corporation, Long Island City 1, New York.

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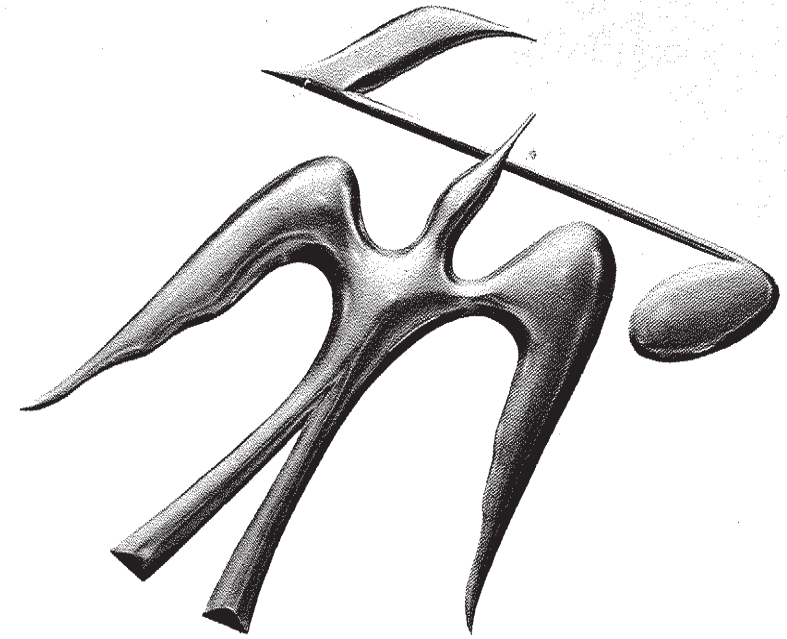
FIRST CLASS PERMIT No. 45377, NEW YORK, N. Y.

**FISHER RADIO CORPORATION**

**21-21 44th Drive**

**Long Island City 1, N. Y.**

## OPERATING INSTRUCTIONS AND WARRANTY



# THE FISHER

600

STEREOPHONIC  
FM-AM RECEIVER

## 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 acquired came into being—its appearance, its functions, its quality of performance.

But the end step—your purchase—is merely a beginning. For you and your family, it will provide years of musical pleasure. The FISHER is from its inception designed to give long and trouble-free service. Some of the instruments we made twenty-two years ago are still in use today!

It is our continuing desire that your FISHER give you always the best performance of which it is capable. If you need our assistance at any time toward that objective, we are always at your service.

### IN CLOSING...

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*

## 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. | 1954 First moderately-priced, professional FM Tuner with TWO meters.                                  |
| 1937 First exclusively high fidelity TRF tuner, featuring broad-tuning 20,000 cycle fidelity.   | 1955 First Peak Power Indicator in high fidelity.   |
| 1937 First two-unit high fidelity system with separate speaker enclosure.   | 1955 First Master Audio Control Chassis with five-position mixing facilities.                         |
| 1938 First coaxial speaker system.  | 1955 First correctly equalized, direct tape-head master audio controls and self-powered preamplifier. |
| 1938 First high fidelity tuner with amplified AVC.  | 1956 First to incorporate Power Monitor in a home amplifier.  |
| 1939 First Dynamic Range Expander.  | 1956 First All-Transistorized Preamplifier-Equalizer.   |
| 1939 First 3-Way Speaker in a high fidelity system.   | 1956 First dual dynamic limiters in an FM tuner for home use.   |
| 1939 First Center-of-Channel Tuning Indicator.  | 1956 First Performance Monitor in a high quality amplifier for home use.                              |
| 1945 First Preamplifier-Equalizer with selective phonograph equalization.   | 1956 First FM-AM tuner with TWO meters.   |
| 1948 First Dynamic Range Expander with feedback.  | 1956 First complete graphic response curve indicator for bass and treble.                             |
| 1949 First FM-AM Tuner with variable AFC.   | 1957 First Gold Cascode FM Tuner.   |
| 1952 First 50-Watt, all-triode amplifier.   | 1957 First MicroRay Tuning Indicator.   |
| 1952 First self-powered Master Audio Control.   | 1958 First Stereophonic Radio-Phonograph with Magnetic Stereo Cartridge                               |
| 1953 First self-powered, electronic sharp-cut-off filter system for high fidelity use.  | 1959 First high-quality Stereophonic Remote Control System.   |
| 1953 First Universal Horn-Type Speaker Enclosure for any room location and any speaker.   | 1959 First complete Stereophonic FM-AM Receiver (FM-AM tuner, audio control, 40-watt amplifier).      |
| 1953 First FM-AM Receiver with a Cascode Front End.   |   |
| 1954 First low-cost electronic Mixer-Fader.   |   |

## THE FISHER MODEL 600

*Stereophonic*

### FM-AM Receiver

THE FISHER Model 600 is a complete stereophonic FM-AM tuner, stereo audio control and dual-channel power amplifier — all on one integrated chassis. Only the speakers need be added to permit the 600 to function as a high-fidelity sound system for the reception of standard FM or AM programs or for FM-AM stereo broadcasts.

In addition to playing FM and AM radio programs, the 600 can also be used as the stereo control center and stereo amplifier for the reproduction of phonograph records and tapes. Any type of record changer or player, tape deck or tape recorder may be operated with the 600 Receiver, either monophonically or stereophonically. Provision is also made for plugging a multiplex adaptor into the 600 for receiving FM multiplex stereo broadcasts.

### STEREOPHONIC SOUND

In stereophonic sound systems, the live sound characteristics of *direction* and *depth* are made possible by the use of two separate sound sources reproduced through two separate sound channels. Stereophonic programs are recorded by two microphones, placed in different sections of the orchestra, so that they can "hear" the music as we do — with two "ears." What is picked up by each microphone is then transmitted over separate channels of a stereo broadcast, or is recorded separately and independently on the record or tape.

The two components of a stereo broadcast are picked up independently by separate tuners or tuner sections and amplified in separate channels to drive speaker systems placed at selected points in the listening area. The output of a stereo cartridge or stereo tape is similarly fed through independent amplifier channels to separate speakers to achieve the same results.

The effect of this separation of sound is that instruments originating at the left side of the orchestra are heard predominantly in the speakers located to the listener's left, while instruments located on the right side are heard predominantly in the speakers to his right. This produces a sense of *presence* at a live orchestral program.

Stereophonic programs are now available regularly through FM-AM, FM-FM, or FM multiplex broadcasts as well as on records and tapes. When used with the appropriate associated equipment, the 600 Receiver will permit you to utilize all of these stereo program sources.

### OPERATING INSTRUCTIONS

Instructions for installing and operating the 600 Stereo Receiver are contained in this book. It will be to your advantage to read this book carefully, *now*. You will find the information it contains extremely helpful. The few minutes you spend reading these instructions will bring you far greater enjoyment than if you had plunged right into using the equipment without this information. A quick-reference check list for operating the 600 after you have read the instructions appears in Table I on page 4.

### INSTALLATION

The 600 can be placed in nearly any location convenient to its use; for example, on a table top or shelf near your favorite chair. It has also been designed for simple installation in a custom cabinet, for which complete directions and diagrams



TABLE I - CONNECTIONS AND CONTROL SETTINGS FOR OPERATING THE 600 RECEIVER

Program Source	Input and Output Connections	Set SELECTOR Switch to	Set MONO-STEREO Switch to	Other Required Control Settings
FM Monophonic	No additional connections required.	FM-AM	A (FM)	FM Tuning knob set to desired FM station. For precise tuning use FM MicroRay Tuning Indicator.
AM Monophonic	No additional connections required.	FM-AM	B (AM)	AM Tuning knob set to desired AM station. For precise tuning use AM MicroRay tuning indicator.
FM-AM Stereo	No additional connections required.	FM-AM	STEREO (or REV.)	FM and AM Tuning knobs set to respective stereo stations. For precise tuning use FM and AM MicroRay Tuning Indicators. Bandwidth switch to AM BROAD.
FM Multiplex Stereo	MPX OUTPUT to input jack on Multiplex Adaptor. Output jacks on adaptor to MPX INPUT jacks in Channel A and B.	FM-MPX	STEREO (or REV.)	FM Tuning knob to MPX stereo station. For precise tuning use FM MicroRay Tuning Indicator.
FM-FM Stereo	External tuner to Channel B-MPX INPUT. Connect jumper between FM OUTPUT and MPX INPUT in Channel A.	FM-MPX	STEREO (or REV.)	FM Tuning knob to station broadcasting Channel A stereo program. For precise tuning, use FM MicroRay Tuning Indicator.
Monophonic record utilizing magnetic cartridge.	Monophonic cartridge leads to MGN PHONO A (or B). Stereo cartridge leads to MGN PHONO A and B Channels.	PHONO	MONO-PHONO	For exact frequency response, set Bass and Treble Controls to RIAA, LP, or 78 Position, as required.
Monophonic record utilizing ceramic cartridge.	Monophonic cartridge leads to AUX inputs in Channel A (or B). Stereo cartridge leads to AUX inputs in A and B Channels.	AUX.	A or B depending on input used.	For exact frequency response, set Bass and Treble Controls to RIAA, LP, or 78 Position, as required.
Stereo record utilizing stereo magnetic cartridge.	Cartridge leads to MGN PHONO inputs in Channels A and B.	PHONO	STEREO (or REV.)	For exact frequency response, set Bass and Treble Controls to RIAA.
Stereo record utilizing stereo ceramic cartridge.	Cartridge leads to AUX inputs in Channels A and B.	AUX.	STEREO (or REV.)	For exact frequency response, set Bass and Treble Controls to RIAA.
Monophonic tape deck.	TAPE HEAD inputs in Channel A (or B).	TAPE HEAD	A or B, depending on input used.	Tape Monitor switch to PLAYBACK.
Monophonic tape recorder with separate record and playback heads.	RCRDR OUTPUT jack on 600 to input of tape recorder. Recorder output jack to MONITOR INPUT in Channel A or B.	Set to AUX for playback. Set to desired program for recording.	A (or B)	Tape Monitor switch to MONITOR both when monitoring and when playing back.
Monophonic tape recorder with common record and playback heads.	RCRDR OUTPUT jack on 600 to input of tape recorder. Recorder output jack to AUX, MPX or MONITOR INPUT in Channels A or B.	AUX or FM-MPX, depending on input used.	A (or B)	Tape Monitor switch to PLAYBACK if AUX or MPX input is used. Tape Monitor switch to MONITOR if MONITOR input is used.
Stereo tape deck.	TAPE HEAD inputs in Channels A and B.	TAPE HEAD	STEREO (or REV.)	Tape Monitor switch in PLAYBACK.
Stereo tape recorder with separate record and playback heads.	RCRDR OUTPUT jack on 600 to input of tape recorder. Recorder output jacks to MONITOR INPUTS in Channels A and B.	Set to AUX for playback. Set to desired program for recording.	STEREO (or REV.)	Tape Monitor switch to MONITOR both when monitoring and when playing back.
Stereo tape recorder with common record and playback heads.	RCRDR OUTPUT jack on 600 to input of tape recorder. Recorder output jack to AUX, MPX or MONITOR INPUTS in Channels A and B.	AUX or FM-MPX, depending on input used.	STEREO (or REV.)	Tape Monitor switch to PLAYBACK if AUX or MPX inputs are used. Tape Monitor switch to MONITOR if MONITOR inputs are used.

NOTE: Make sure antennas and speakers are properly connected before operating controls.

have been provided in the last section of these instructions. If you intend to keep the 600 on a table top or shelf, a custom cabinet is available from FISHER, enabling you to convert the unit into an attractive member of your furniture group.

For the time being, simply place the 600 in its approximate final location, allowing yourself room to get at the rear apron of the chassis. This arrangement permits you to determine the cable lengths necessary for the various connections to the associated high fidelity equipment. The following sections describe the proper methods for installing the antennas and connecting the speakers and associated equipment.

### speaker placement . . .

It is desirable to have the two speakers systems in a stereo installation as nearly alike as possible. Careful consideration should also be given to the positions which they will occupy in your room. The correct distance between the speaker units is determined by the dimensions of the room and other acoustical factors. Position the units so as to obtain the most desirable stereophonic effects. As a rule of thumb, the distance to the best listening area in front of the speakers will range from approximately equal to twice as great as the separation between the speakers.

If you own two corner-type speaker systems, try placing one in a corner and the other against a flat wall, comparing this arrangement with both in corners to determine the best stereo arrangement. Wall-type speaker systems placed in the room corners may introduce undesirable effects; therefore, try placing them on the same wall a short distance from the corners of the room. If your installation is to be set up in a long narrow room, an arrangement placing the speakers along the long wall may be preferable to one placing them along the short wall.

### speaker connections . . .

FM-AM stereo programs are usually broadcast so that the left side of the orchestra, designated as Channel A, is transmitted over FM, and the right side of the orchestra is broadcast as Channel B over AM. A similar procedure is used to designate the two channels of programs recorded on discs or tape. To recreate the exact orchestral placement stereophonically in the home, the speaker to the listener's left should be designated Speaker A and connected to

Channel A outputs, and the speaker to the right should be designated Speaker B.

Output terminals for connecting the Channel A and the Channel B speakers are located on the rear panel of the 600 Receiver (See Fig. 1). A speaker or speaker system with a voice-coil impedance of 4, 8 or 16 ohms may be used in either channel, by connecting it to the appropriate terminal taps. Ordinary insulated two-wire lamp cord may be used for making connections between the output terminals and the speakers.

NOTE: In certain strong signal areas the speaker cables may pick up broadcast frequencies, which will be fed back to the input circuits of the power amplifier sections and appear at the speakers as station interference. In this case, it is suggested that two-wire shielded cables rather than lamp cord be used to prevent this condition from developing. Make certain that the cable shields are connected to the ground terminal (G) of Channel A only.

If the speaker you have designated as Speaker A is rated at approximately 4 ohms, make connections to the Speaker A terminals marked G and 4. If your A speaker is approximately 8 ohms, connect between G and 8. An A speaker of approximately 16 ohms should be connected between G and 16.

Connect the speaker you have designated as the B speaker, regardless of its impedance, between the Speaker B terminals marked G and X. Then if your B speaker has an impedance of approximately 4 ohms, connect the jumper between the Impedance B terminals marked P and 4. If the speaker is rated at about 8 ohms, connect the jumper between P and 8. For a B speaker of approximately 16 ohms, the P and 16 terminals on the Impedance B strip are connected

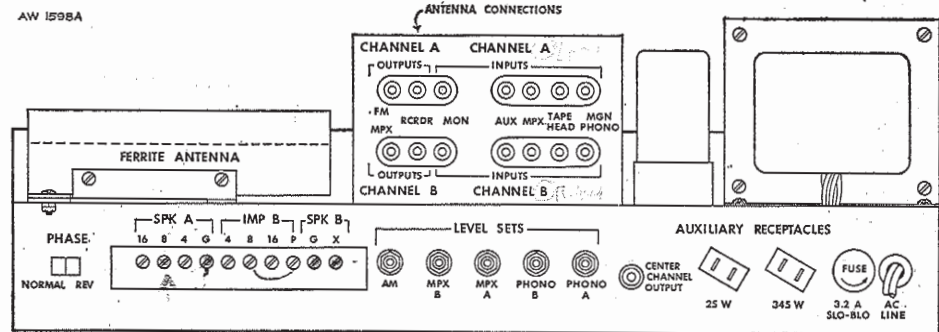


FIG. 1: Rear panel of the 600 Receiver.



In the event that you have not yet purchased two stereo speakers and are planning to use the 600 temporarily in a monophonic system, connect the single speaker you have to the speaker A terminal strip as outlined above. It is then necessary to connect a load across the unused speaker terminals. For this purpose a wire-wound 7-watt resistor rated at between 20 and 40 ohms should be connected between the G and X terminals of the Speaker B strip.

**Important!** Do not attempt to operate the TA-600 Receiver without first connecting both speakers or otherwise loading the speaker terminals.

### connecting antennas . . .

The antenna plays an important role in reception. Its purpose is to pick up the signal sent out by the broadcasting station, then pass it on to the circuits of the receiver. Different types of antennas and antenna connections must be available, in order to cope with a variety of local conditions. Separate FM and AM antennas are supplied with the FISHER 600 Receiver, and a variety of installations have been designed for them to provide the best possible reception in your listening area. Read the following paragraphs carefully before proceeding.

### fm antenna . . .

To obtain optimum performance and assure good reception of all stations in the area, an FM antenna must be used. The 600 is supplied with a folded dipole antenna which may be mounted *horizontally only* in any convenient location, such as behind the rear panel of the receiver or on an adjacent plaster wall. Do not place the antenna in the vicinity of large metal objects or close to current-carrying wires. Connect the antenna lead-in to terminals 4 and 6 as shown in Fig. 2. Retain the link connection between terminals 4 and 5.

In fringe signal areas, an external roof antenna designed for FM reception may be required. This type of antenna is also connected to terminals 4 and 6 and the link retained, as shown in Fig. 2. Using a roof antenna in a strong signal area may sometimes result in overloading the sensitive tuner input circuits. In this case, the link between terminals 4 and 5 should be detached, as illustrated in Fig. 3. Detaching the link in this fashion instead of removing it completely safeguards the link for subsequent use.

### am antenna . . .

The FISHER 600 is equipped with a built-in highly sensitive ferrite loop antenna which is mounted on the rear panel (see Fig. 1). This loopstick, which is much less sensitive to static and noise than conventional antennas, is connected for use when terminals 1 and 2 of the antenna terminal board are linked as shown in Fig. 4.

This antenna is rotatable, and, after the receiver has been turned on, the loopstick should be turned *horizontally* to the position which will provide the best average reception across the AM band. Before rotating the antenna,

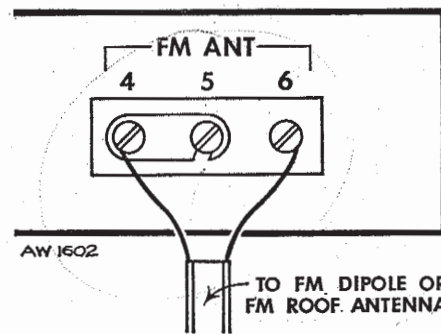


FIG. 2: Connections to antenna terminal strip for FM reception in normal or in weak signal areas.

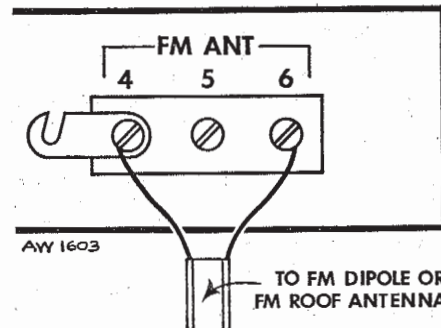


FIG. 3: Installation of FM antenna in strong signal areas to prevent overloading of tuner circuit.

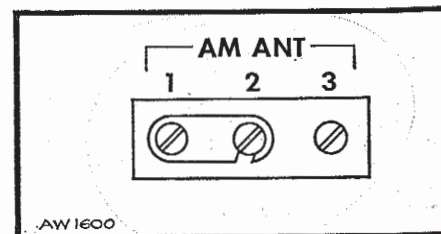


FIG. 4: Connections required on antenna terminal strips for AM operation with ferrite loop antenna.

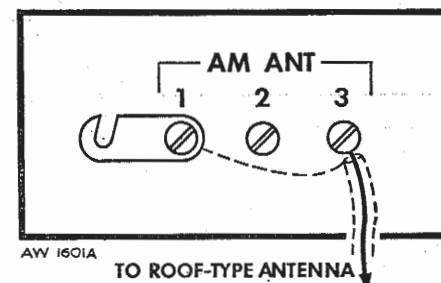


FIG. 5: Connections for installing roof-type AM antenna. Detach link between terminals 1 and 2.

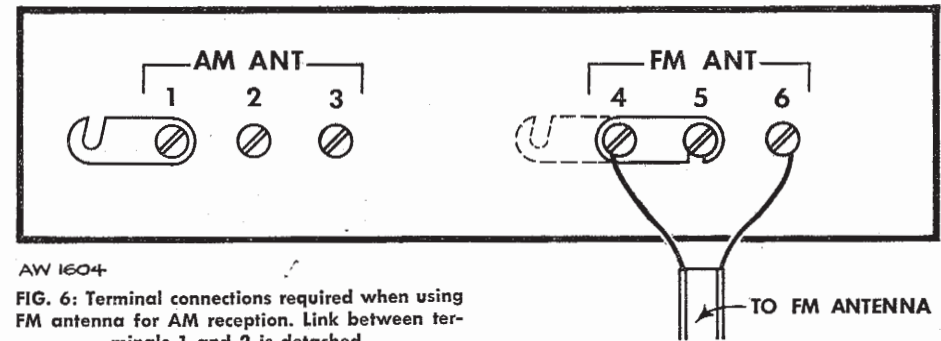


FIG. 6: Terminal connections required when using FM antenna for AM reception. Link between terminals 1 and 2 is detached.

loosen the mounting screw which fastens the loopstick to the chassis.

To reach some weak or distant stations, a roof-type AM antenna may be required. This antenna is connected to terminal 3, with the link between terminals 1 and 2 detached as in Fig. 5. To assure best reception in metropolitan or industrial areas, a shielded cable should be used as the antenna lead-in. In this case the conductor is connected to terminal 3 and the shield to terminal 1.

In some cases it may be desirable to operate the AM tuner from the FM dipole supplied or from the external FM antenna. This can be done by detaching the link between terminals 1 and 2, as indicated in Fig. 6.

### input and output connections . . .

In addition to receiving FM and AM broadcasts, the 600 will reproduce program material on records and tapes. A total of ten input jacks, five in Channel A and five in Channel B, are provided for connecting various program sources. There are also four output jacks, two in each channel. All inputs and outputs are conveniently located on the jack bracket on the rear panel, as shown in Fig. 1. Connections from program sources are made as indicated below.

**RECORD PLAYERS:** If you are using a *magnetic stereo* cartridge in your record player or changer, then connect the leads from the cartridge to the inputs marked *MCN PHONO* in Channel A and Channel B. With a *monophonic magnetic* cartridge, the single cable from the cartridge may be connected to the *MCN PHONO* input in either Channel A or Channel B. The input impedance of the *MCN PHONO* jack is 50,000 ohms.

If the record player or changer you are using has a *ceramic stereo* cartridge, connect the leads from the cartridge to the inputs marked *AUX* in both Channel A and Channel B. A *monophonic ceramic* cartridge may be connected to the *AUX* input in either channel. The input impedance of the *AUX* jack is 2 megohms and is, therefore, highly suitable for ceramic cartridges.

**TAPE DECK:** A tape deck is a tape transport mechanism without a preamplifier. It is connected to a sound system to provide playback from recorded tapes. If you have a stereo tape

deck, connect the A and B output cables to the respective inputs marked *TAPE HEAD* in both Channel A and Channel B. A monophonic tape deck may be connected to either the Channel A or Channel B *TAPE HEAD* input.

The *TAPE HEAD* inputs provide the preamplification and equalization required when connected directly to tape heads. *Do not use these inputs for standard tape recorders in which playback preamplifiers are incorporated.* These recorders should be connected as indicated in the next section.

**TAPE RECORDER:** A standard tape recorder, either stereophonic or monophonic, can be used for two purposes with the 600. First, it can be used to record on tape the output of either the AM or FM tuner section or of a phonograph record being played through the 600. Secondly, it will play back through the 600 system program material which has previously been recorded on magnetic tape. Permanent connections between the tape recorder and the 600 to permit both functions to be carried out may be made as indicated below.

If your recorder utilizes separate record and playback heads, connect a cable between the *RCRDR OUTPUT* jack on the 600 and the input or record jack on your tape recorder. Connect another cable between the output or playback jack on the recorder and the *MONITOR INPUT* jack on the 600. If you are using a *stereo* recorder, make these connections to *both* the Channel A and Channel B *RCRDR* and *MONITOR* jacks. If a *monophonic* recorder is being used, make these connections to *either* Channel A or Channel B. These connections will permit you not only to record and playback as described above, but also to monitor, or playback, material as you record it.

If your recorder utilizes a common head for both recording and playback, the output cable from the tape recorder should be connected to the *AUX* input on the 600. If the *AUX* input is already occupied, you may use the *MONITOR* or *MPX* input. Another cable is connected between the *RCRDR OUTPUT* jack on the 600 and the input or record jack on your tape recorder. If you are using a *stereo* recorder, make these connections in *both* the A and B channels. With a *monophonic* recorder, connect *either* A or B. Using the *AUX* input provides a stronger playback signal.



**FM MULTIPLEX:** A multiplex adaptor, such as The FISHER model MPX-10, is required to receive multiplex stereocasts. The adaptor can be permanently connected to your 600 Receiver to hear these broadcasts whenever they are available. Connect a cable from the MPX OUTPUT jack on the 600 to the appropriate input jack on your multiplex adaptor. Then connect the Channel A and Channel B OUTPUT jacks of the adaptor to the corresponding MPX INPUT jacks of the 600. See the operating instructions furnished with your multiplex adaptor for additional information.

**FM-FM STEREO:** This type of stereo broadcast, available in some areas, requires an external FM or FM-AM tuner in addition to the 600. Connect this external tuner to the Channel B MPX INPUT jack on the 600 Receiver. Also connect a jumper between the FM OUTPUT jack and the Channel A MPX INPUT jack.

The 600 should supply the left or A channel of the stereo broadcast, and the external tuner should provide the B channel. It will be necessary for you to ascertain from your newspaper which FM station is broadcasting the respective channels and to set your tuners accordingly.

**Caution!** The shielded cable leads from the FM OUTPUT and MPX OUTPUT jacks should be kept as far away as possible from the FM antenna, antenna lead-in or antenna terminals.

### center channel . . .

In large rooms, where it may be necessary to space loudspeakers farther apart to increase the spread of stereophonic sound, a "hole" may develop in the center. This apparent lack of sound in the center will become more noticeable as the distance between the two speaker systems is increased. It is possible to fill in this gap with the addition of a center channel amplifier and loudspeaker system.

The 600 is equipped with a Center Channel Output jack which is connected to a divider network across the output stages of Channel A and B. Equal portions of the audio output from each channel are thus combined to provide a signal for a third "phantom" channel. By connecting an additional amplifier and loudspeaker to this output jack, and positioning the loudspeaker between the A and B speaker systems,

the stereophonic curtain of sound will be augmented.

The additional amplifier need not be equipped with Bass and Treble controls, since these are provided by the 600. An Input Level Set or Volume Control will be helpful, however, in order that the relative output of the center speaker may be adjusted to the necessary level. Connect a short length of shielded cable, of the low capacitance type, from the CENTER CHANNEL output jack on the 600 to an input of the third amplifier. The length of cable from the amplifier output to the speaker can be considerably longer (up to 100 feet or more,) depending upon the type of amplifier used.

**NOTE:** The third speaker can also be placed in an adjoining room or other remote location. Although the sound output will be monophonic, it will contain the composite stereo signals.

### ac receptacles . . .

There are two auxiliary receptacles on the rear panel of the 600 Receiver marked 25 watts and 345 watts, respectively. The 25-watt receptacle should be used for plugging in the record changer or turntable and the remaining receptacle to supply power to other associated equipment used with the 600. Be careful not to exceed the ratings given for each receptacle. Power is supplied to both auxiliary receptacles only when the 600 is turned on.

### ac power . . .

After you have made the connections described above, connect the AC power line on the rear panel of the 600 to a source of AC current. The 600 will operate between 105 and 120 volts, 50 or 60 cycles. A step-up or step-down transformer is necessary to use the 600 at other voltages. Note also that if you have 50-cycle current, your record player and tape recorder will have to be adapted to operate properly at this frequency.

### caution . . .

Now that your connections have been made, you may be tempted to start operating your 600, before you have read the rest of the operating instructions. We strongly urge you to resist this temptation. The next section contains important information on operating the controls which is essential for proper use and real enjoyment of the 600 Receiver.

## USING THE CONTROLS

With the exception of the Phase Reversing switch, all the controls for operating the 600 Receiver are located on the front panel as shown in Fig. 7. These controls have been carefully designed for convenience and ease of operation, and their functions have been clearly marked on the panel. Nevertheless, a fuller understanding of the function and operation of each control will enable you to use your 600 more effectively and increase your listening pleasure.

### ac off switch . . .

This switch is part of the Volume control located at the lower right side of the control panel. When this switch is turned to its extreme counterclockwise position, a click signifies that the AC power has been turned off. The knob should be left in the OFF position until the

speakers have been connected and the input connections made. When the knob is rotated clockwise from the OFF position, AC power is supplied to the 600 and to any associated equipment which is plugged into the auxiliary receptacles on the rear panel.

When the AC power is turned on, two panel

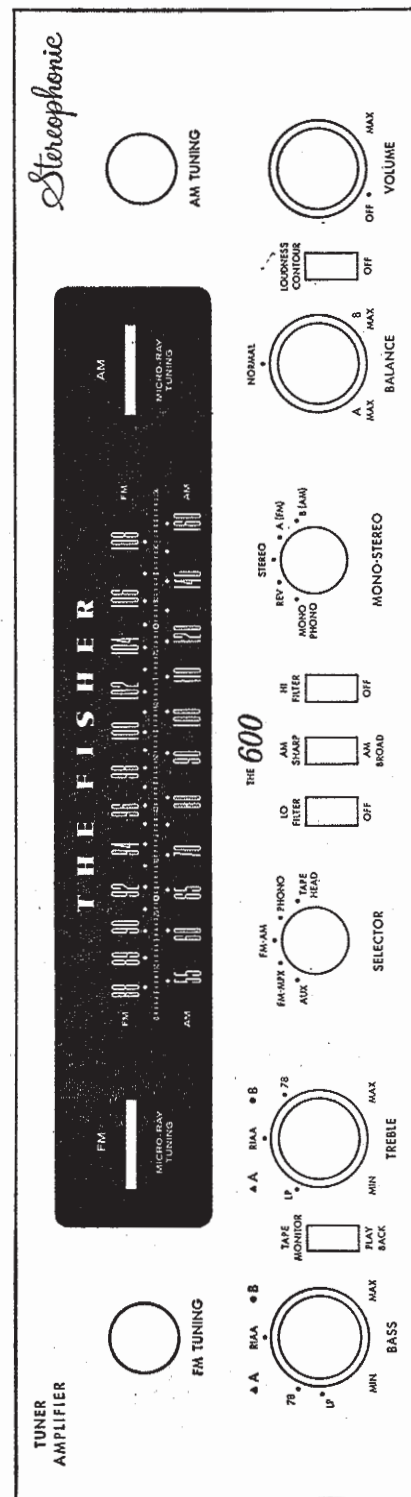


FIG. 7: Front panel controls on the 600 Receiver.

lights will go on to illuminate the dial glass. These lamps are located behind the front panel on either side of the dial glass, and are not visible. To replace these bulbs, it is necessary to remove the front panel, first disconnecting the AC cord as a safety precaution. The front panel is held in place by means of four hex nuts located behind the Volume, Bass, FM Tuning and AM Tuning control knobs. Remove the knobs and hex nuts and lift off the front panel. The bulbs are held in place by spring clips and may be removed with the fingers or pried loose, if necessary, with a screwdriver. Replace with a new lamp, available from your FISHER dealer as Part No. 150082-3.

### fm tuning . . .

The FM Tuning knob on the upper left side of the 600 control panel is used to select FM stations in the 88 to 108 megacycle band. Turning this knob moves the pointer across the FM dial scale, and also operates the FM MicroRay Tuning Indicator. Easy and accurate tuning is achieved by turning the FM Tuning knob until the dial pointer is at the approximate frequency of the FM station desired, then tuning in with the MicroRay Tuning Indicator.

### am tuning . . .

The AM Tuning knob on the upper right side of the 600 control panel is used to select AM stations in the 550 to 1600 kilocycle standard broadcast band. Turning this knob moves the pointer across the AM dial scale, and also operates the AM MicroRay Tuning Indicator. Easy and accurate tuning is achieved by running the dial pointer to the approximate frequency of the AM station desired, then tuning in precisely with the MicroRay Tuning Indicator.

A ferrite loop antenna, which is much less sensitive to static and noise than conventional antennas, is mounted on the rear panel. This loopstick antenna is directional and will provide varying reception when turned to different positions. Rotate the ferrite antenna *horizontally*, until the best average reception is obtained over the entire AM band. The extent to which the antenna is rotated should not ordinarily exceed 45 degrees.

### am bandwidth switch . . .

The AM Bandwidth switch, located in the center of the front panel, has two positions marked AM BROAD and AM SHARP. When there is no interference from neighboring stations, the bandwidth switch should be set to BROAD position which provides the optimum in bandwidth and the best tonal quality. This is especially important when listening to FM-AM stereo broadcasts in which the AM tone qualities should be as nearly equal to FM as possible. For maximum selectivity and minimum interference from adjacent stations, switch the AM Selector to SHARP position.

### logging scale . . .

In addition to the scales for locating FM and AM stations, the 600 dial glass includes a Logging Scale numbered from 0 to 100. With its aid your favorite stations can be tuned in more easily, since only a two-digit number need be remembered. The scale can be used for both FM and AM.



### micro-ray tuning indicator . . .

The FISHER 600 Receiver is equipped with two MicroRay tuning indicators. Unlike any previous tuning eye used, MicroRay features a newly-developed phosphorescent material in a specially constructed tube to achieve a brilliant display never before possible. Most remarkable of all its unique characteristics is the logarithmic response of MicroRay to the strength of received broadcast signals. MicroRay responds with *greatest* sensitivity on *weak* signals—where sensitivity is needed. It has its minimum sensitivity on strong signals, thus automatically protecting the indicator against overload. The FISHER owner thus has the finest facilities for tuning to the exact center of channel (for minimum distortion) even on the weakest FM or AM station. Because of MicroRay, easy and accurate tuning is within the reach of even the unskilled user.

The MicroRay Tuning Indicator display is a bright bar of light divided into two sections by a small, clearly defined, dark area. When you turn the tuning knob to the vicinity of a station, either FM or AM, the gap between the two sections of the bar of light becomes smaller. You are tuned to the exact center of the channel when you have made the gap in the bar of light as small as possible. This point has been reached when turning the knob in either direction widens the gap.

### selector switch . . .

The Selector is a five-position switch located on the front panel. This switch selects any of the program sources you have connected to the 600 or provides FM or AM radio reception. Reading clockwise, the five positions of this switch and the respective functions of each are as follows:

**AUX:** This position is used to select the stereo or monophonic high-level input or inputs which have been connected to the Channel A and Channel B AUX INPUT on the 600. This is usually the input from a ceramic phono cartridge, although in some installations a tape recorder or TV sound channel might be connected instead.

**FM-MPX:** This position is used when listening to FM-FM or FM multiplex stereo programs or may be used as a high-level auxiliary input.

**FM-AM:** Turn the Selector to this position to listen to monophonic FM or AM programs and to stereophonic FM-AM radio broadcasts.

**PHONO:** Use this position to play stereophonic or monophonic recordings if your record player is equipped with a magnetic cartridge. Make sure that the output of your cartridge is plugged into the Channel A and/or Channel B PHONO INPUT on the rear of the 600 Receiver.

**TAPE HEAD:** In this position you may play back program material from a tape deck which is connected to the TAPE HEAD input. Do not use this position to play back material from a recorder which contains tape equalization and preamplification facilities.

### mono-stereo switch . . .

The Mono-Stereo switch on the front panel is a five-position switch which selects the outputs heard in the speaker systems. The five positions, which provide the desired stereo or

monophonic output in conjunction with the input you have selected, are as follows:

**MONO PHONO:** Use this position when playing a monophonic recording. In this position both phono stages operate in parallel to more completely eliminate vertical rumble from your monophonic system.

**REV:** This position is used to reverse the normal stereo listening arrangement by feeding the Channel A inputs to Speaker B and the Channel B inputs to Speaker A. Use this position if the tape recording or other inputs have been reversed channelwise, and you wish to restore the original spatial arrangement of the orchestra.

**STEREO:** This is the normal position for listening to stereo programs, with the Channel A input going to Speaker A and the Channel B input feeding Speaker B. This position normally provides the best stereo results if the A Speaker is to the listener's left.

**A (FM):** In this position, the Channel A inputs are heard over both the A and B speakers. If the Selector is set for FM-AM radio reception, then the FM program to which you are tuned will be heard in both channels producing a panoramic effect.

**B (AM):** With the Mono-Stereo switch in this position, Channel B inputs are heard over both the A and B speakers. If the Selector is set to FM-AM, then the AM program you are tuned to will be heard over both speaker systems.

### tape monitor switch . . .

The tape monitor switch, located on the front panel, has two positions, MONITOR and PLAYBACK. When a three-head tape recorder is connected to the Monitor Inputs of the 600, set this switch to MONITOR if you wish to hear the program as you have recorded it. To play back program material from a tape recorder which is not connected to the Monitor Inputs, set the Tape Monitor switch to PLAYBACK.

### audio controls . . .

The audio controls on the front panel of the 600 Receiver permit you to vary the volume and tonal characteristics of program material. These controls provide identical characteristics in both channels, for convenience and ease in operating your sound system.

**VOLUME:** This is the master volume control which controls the level simultaneously at both speakers. Turning the knob away from OFF to MAX position, increases the sound output from both speaker systems.

**BASS:** The Bass Tone Control is a dual knob which permits you to regulate the intensities of the low-frequency or bass tones in either Channel A or Channel B, or in both channels simultaneously. The smaller knob, marked with a gold triangle, controls the bass response in Channel A. The larger knob, marked with a gold dot, regulates the bass tone in Channel B.

The knobs are friction loaded, so that when one is turned the other turns with it, thereby permitting simultaneous control of both channels. If individual control of the bass is desired in Channel A, hold the large Channel B knob with one hand and rotate the small Channel A knob to the desired position with the other hand.

Reverse the procedure to regulate the bass tones in Channel B.

The three positions marked on the Bass control indicate the recommended points at which the control should be set to assure correct bass tones for the various phono equalizations used with different types of records. Use the RIAA position for all stereophonic and new monophonic records. This also represents the "normal" position when listening to FM and AM radio.

Set switch to LP position for long-playing records produced before 1955. The 78 position is for playing old-type shellac records which were cut at 78 rpm. Avoid extreme settings of the Bass control at high volume as this may cause distortion and rumble at the speakers.

**TREBLE:** The Treble Tone Control is also a dual-knob control, marked with a triangle for Channel A and with a dot for Channel B. This dual control is used to regulate the treble response in each channel in the same manner as described above for the Bass Tone Control.

The Treble tone control alters the intensity of the high frequency treble tones. The knob is turned to the right towards MAX to provide greater treble intensity, and to the left towards MIN for less treble. There are three positions on the Treble control which indicate the positions to which the control should be set to provide correct treble equalization for RIAA, LP or 78 rpm records. If uniform response is desired, set this switch to RIAA.

**LOUDNESS CONTOUR:** As the relative volume of sound is reduced, our natural hearing sensitivity drops off more rapidly in the bass and upper treble regions than it does in the middle

frequency range. The Loudness Contour switch is provided to permit you to listen to program material at low levels without being deprived of the high and low frequencies which would otherwise be lost. Setting this switch to LOUDNESS CONTOUR automatically increases the amount of loudness compensation as you lower the Volume control and decreases this compensation as you increase the volume.

**LO FILTER:** The Low Filter switch is used to eliminate possible rumble or other low-frequency disturbances. Turn this switch to LO FILTER position if you encounter rumble or other undesirable low frequencies when playing your record player or tape deck.

**HI FILTER:** Turn this switch to HI FILTER position to eliminate needle scratch or other unwanted high frequencies from the record player or tape deck connected to your 600. This position can also be used to suppress any interference which may originate in your AM tuner.

### balance . . .

The use of two sound channels may result in a slight imbalance between the two speaker systems because of room acoustics or differences in speaker efficiency. The Balance control is used to provide the desired balance between speaker levels. Turning the control counterclockwise from NORMAL toward the A MAX position increases the volume from Speaker A and simultaneously reduces the level at the B speaker. Turning the control clockwise increases the volume of Speaker B and at the same time reduces it in Speaker A. Set this control by ear until you obtain the desired volume from each of your speaker systems.

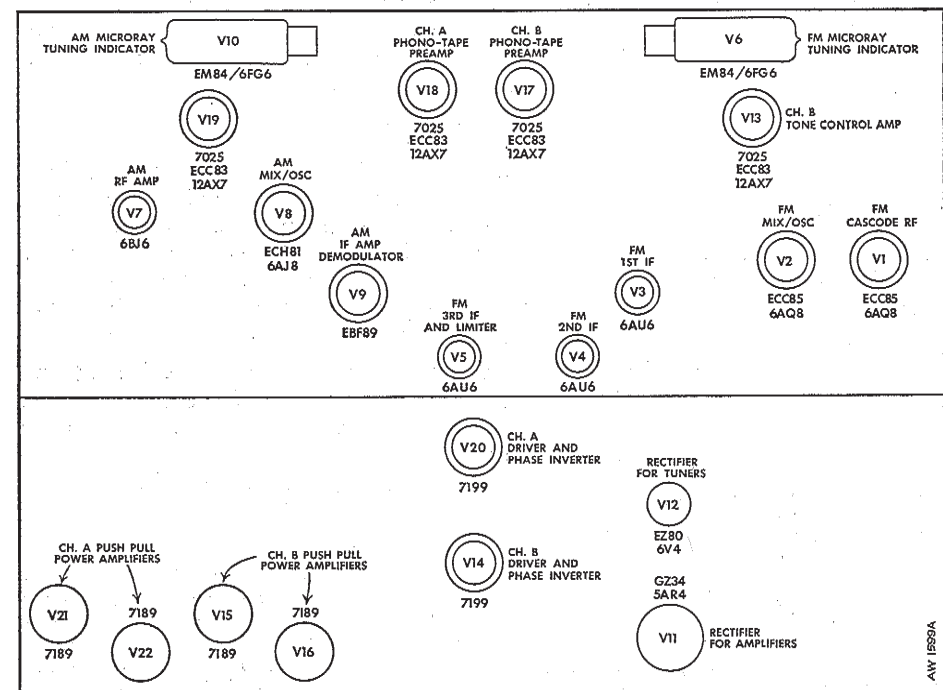


FIG. 8: Tube layout diagram of the 600 Receiver.

## rear panel controls . . .

Five Level Sets and a Phase Reversing switch are located on the rear panel of the 600 (see Fig. 1). These controls may require resetting when the unit is first installed, but are not normally used in subsequent operation.

**LEVEL SETS:** There are five Level Sets marked PHONO A, PHONO B, MPX A, MPX B and AM. These controls have been set to maximum positions (fully clockwise) at the factory to permit the full strength of the input signal to be utilized. Because of varying input levels, this may result in an appreciably higher output level from some program sources than from others as the Selector switch is turned. In this case, turn the Level Set for those inputs which are too loud in a counterclockwise direction, until the output of all program sources is approximately equal.

## OPERATING THE 600 RECEIVER

After the speakers and antennas have been installed and the connections made to your phono and tape inputs, you are ready to operate your 600 Receiver. Set the operating controls on the front panel to provide the desired program, as outlined in the last section on Using the Controls.

With the proper associated equipment, three types of program material may be played through the 600 Receiver. These include radio or TV broadcasts, phonograph, or tape programs, and each may be either stereophonic or monophonic. For your convenience in operating the 600, a check list for setting each of the significant controls for various types of programs is shown in Table I, on page 4. Controls which are not listed in these tables may be set to suit individual listening conditions.

In each table the settings for monophonic operation are shown first, followed by those for stereo programs. The required connections for each type of operation are also included in each table. Before operating any of the controls, make certain that all inputs, speakers and antennas have been properly connected.

## CUSTOM INSTALLATION

The 600 Receiver may be mounted in a special simulated leather cabinet, FISHER Model TA-6, which was especially designed for this unit. It may also be mounted in your own custom cabinet by following the directions and illustrations in this section. Adequate ventilation is absolutely essential for proper operation of the 600. Never install the chassis vertically or in a totally enclosed space or too near other heat-producing equipment. Instructions for installing the Receiver in THE FISHER TA-6 cabinet are furnished with the cabinet.

To assure optimum AM reception, make sure that the ferrite loopstick antenna on the rear panel of the 600 is kept away from power lines or large metal objects. Also allow sufficient space at the rear of the unit to permit the ferrite antenna to be rotated as described under AM Tuning.

THE FISHER 600 is shipped with the four plastic mounting feet screwed to the bottom of the chassis. If it is desirable to use this unit on an open shelf or table top, no additional installation is required. The mounting feet raise the chassis so that the front panel clears the surface on which the unit rests and also provide the unit with proper ventilation.

To install the 600 in a custom cabinet or in The FISHER TA-6 cabinet, the mounting feet must first be removed. This is done by loosening the mounting screws which fasten the feet to the underside of the chassis.

Use the Level Sets marked PHONO for adjusting the input level of tape decks as well as phonographs with magnetic cartridges. Turn the AM Level Set counterclockwise if the Balance control cannot bring the B speaker down to the level of the A speaker when listening to FM-AM stereo broadcasts.

**PHASE REVERSING:** The Phase Reversing switch provides a means of compensating for improperly phased speakers. For best stereophonic reception both speaker systems should be in phase so that the respective speaker cones both move in the same direction at the same time. If the speakers are out of phase, it is necessary to reverse the leads to one of the speakers. This is accomplished by the Phase Reversing switch which electrically reverses the leads to Speaker B. Set this switch to either NORMAL or REV. position, whichever sounds better when playing a stereophonic program.

ing the mounting screws which fasten the feet to the underside of the chassis.

### installation with cleats . . .

To provide adequate ventilation to the underside of the chassis, after it has been mounted in the custom cabinet, it is advisable to mount the 600 on wooden cleats and then fasten the cleats to the bottom of the cabinet. For this installation, proceed as follows:

1—Fashion three cleats from a strip of wood

approximately 29 inches long with a cross section of at least  $\frac{3}{4}$ " by  $\frac{3}{4}$ ". For Cleat 1 and 2, cut two pieces of  $5\frac{5}{8}$  inches each off this length. The remaining piece, approximately  $17\frac{1}{4}$ " inches long, is used for Cleat 3.

2—Locate and drill one A hole on each of Cleats 1 and 2 and two A holes on Cleat 3, at the locations indicated in Fig. 9. The A holes

are all drilled  $\frac{1}{4}$ -inch in diameter and countersunk to a  $\frac{1}{2}$ -inch diameter.

3—Locate and drill one B hole on each of Cleats 1 and 2 and two B holes on Cleat 3, as indicated in Fig. 9. The B holes are all  $\frac{1}{4}$ -inch in diameter and need not be countersunk.

4—Attach Cleats 1, 2 and 3 to the underside of the 600 as shown in Fig. 9, utilizing the

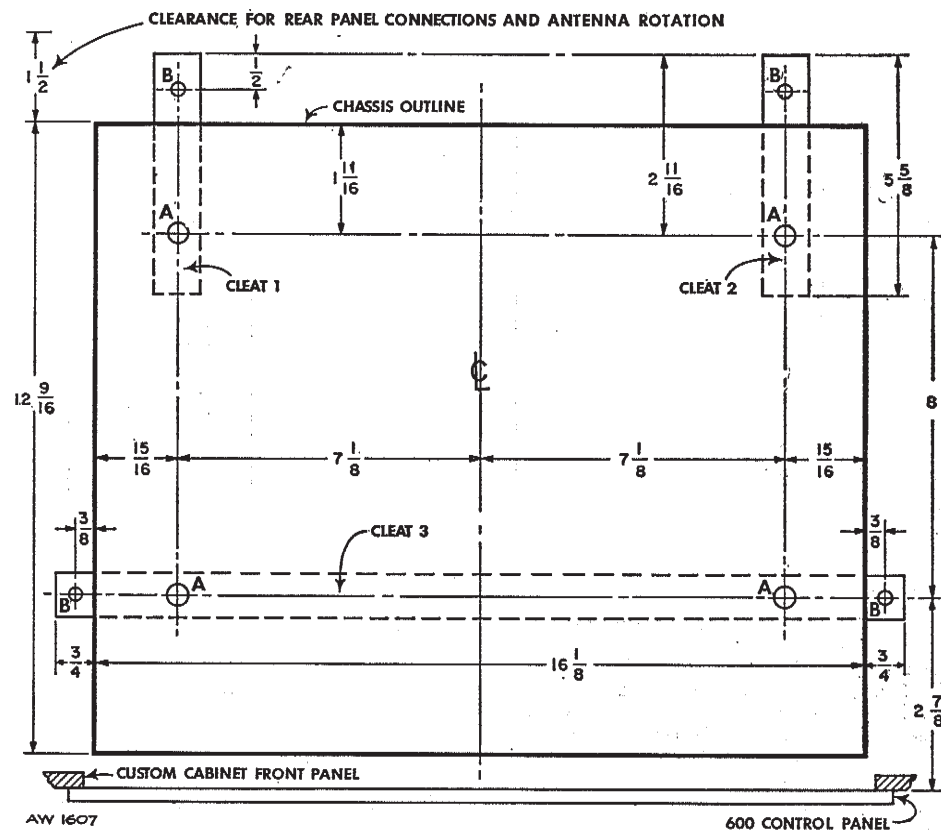


FIG. 9: Top view custom cabinet installation with cleats.

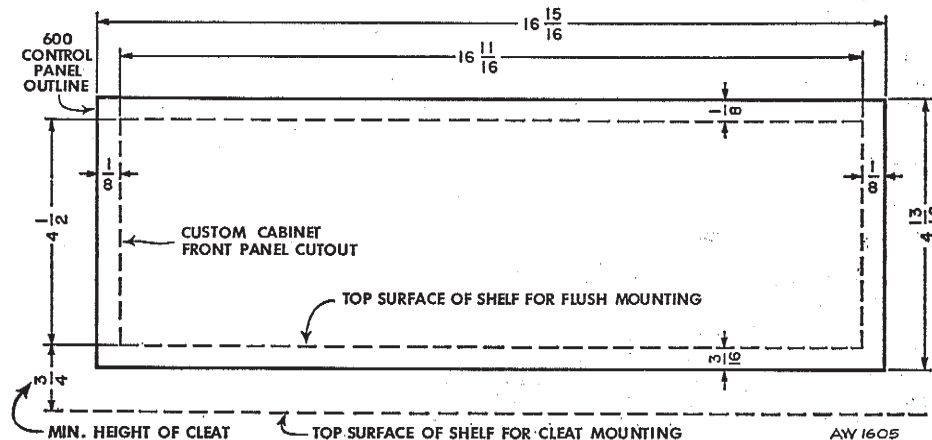


FIG. 10: Front Panel cutout for installing 600 in custom cabinet.



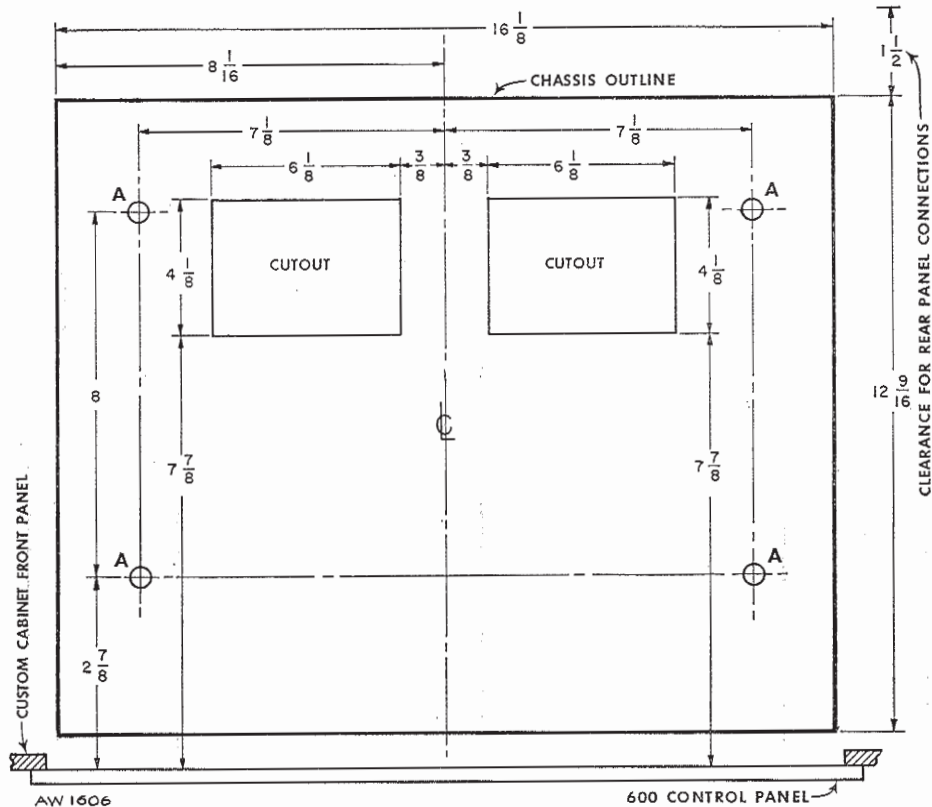


FIG. 11: Top view flush-mounted custom cabinet installation.

mounting holes formerly employed in mounting the four plastic legs. You may use the four 1-inch mounting screws, furnished in the accessories envelope with the 600, for mounting the cleats to the chassis.

5—Saw a rectangular cutout through the front panel of your custom cabinet to the dimensions shown in Fig. 10. The distance between the top surface of the mounting shelf and the bottom of the cutout must be the same as the height of the cleat.

6—Insert the 600 chassis, with the cleats mounted in place, through the custom front panel cutout. Slide the chassis as far into the cabinet as possible so that the rear of the 600 control panel butts up tightly against the front of the custom panel. It is *not* necessary to remove the control panel of the 600 from the chassis.

7—Fasten the 600 chassis to the cabinet shelf with four mounting screws inserted through the B holes in Cleats 1, 2 and 3, as indicated in Fig. 9. Use No. 10 wood screws 1½ inches long for this purpose.

**flush installation . . .**

If the height of the custom cabinet will not permit you to mount the 600 by means of cleats, as described above, the chassis may be mounted directly on the cabinet shelf. If the chassis is mounted in this way, however, it is essential that cutouts be made in the shelf as outlined

below and that the back of the cabinet remain completely open, in order to provide proper ventilation. For a flush-mounted installation, proceed as follows:

1—Locate and drill the four A holes in the bottom shelf of the custom cabinet as indicated in Fig. 11. The holes are all drilled ¼-inch in diameter.

2—Saw cutouts in the bottom shelf following the outlines shown in Fig. 11. It is absolutely essential that these cutouts be made as indicated so that the necessary ventilation will be supplied to the 600 chassis.

3—Saw a rectangular cutout through the front panel of your custom cabinet to the dimensions shown in Fig. 10. Note that the bottom of the cutout coincides with the top of the mounting shelf, since cleats are not used in this installation.

4—Insert the 600 chassis through the custom front panel cutout. Slide the chassis in all the way so that the rear of the 600 control panel fits tightly against the front of the custom panel.

5—Fasten the chassis to the shelf by means of four mounting screws and flat washers. The screws are inserted from the underside of the shelf, through the A holes and into the four mounting holes formerly employed for attaching the plastic mounting feet. You may use the four 1-inch screws and washers furnished in the accessories envelope for this purpose.

## WARRANTY TO OWNER

**THE FISHER** equipment you purchased was carefully tested and inspected before leaving our laboratories. If properly installed and operated in accordance with the instructions furnished, it should give you the finest results of which it is capable. This equipment is unconditionally guaranteed against all defects in material and workmanship for ninety days from date of sale to the original purchaser. Any part of the equipment which under normal installation and use, discloses such a defect, will be adjusted or replaced by the dealer from whom purchased. This guarantee is void if the equipment has been altered, or if the purchaser has failed to return the Warranty Card *within 10 days*.

**FOR WARRANTY SERVICE, CONSULT YOUR DEALER**

Please fill out and return this  
**WARRANTY CARD**

USER'S LAST NAME	FIRST NAME	INITIAL
USER'S HOME ADDRESS		
CITY	STATE	
DATE OF PURCHASE	MODEL NO.	SERIAL NO.

Name of Dealer \_\_\_\_\_ State \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

I first heard of THE FISHER through:  Friend  Dealer

Advertising (Name of publication) \_\_\_\_\_

I chose THE FISHER because: \_\_\_\_\_

What I think of my FISHER equipment: \_\_\_\_\_

I also own these additional hi-fi units: \_\_\_\_\_

**WARRANTY VOID UNLESS COMPLETED AND RETURNED WITHIN 10 DAYS AFTER DATE OF PURCHASE**