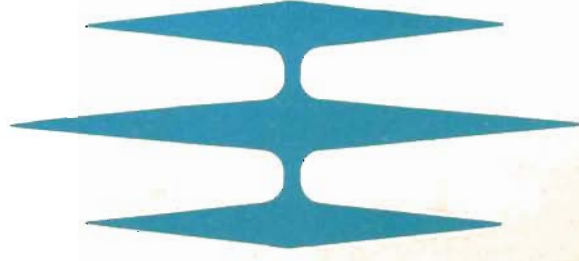


OPERATING MANUAL

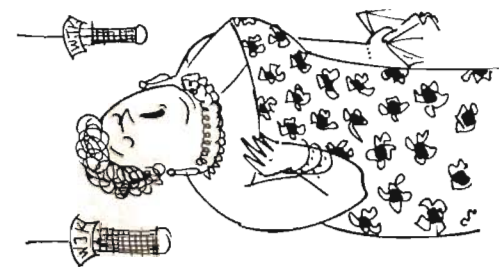


MODEL 335

H·H·SCOTT

LEADER IN AUDIO ENGINEERING AND DESIGN

OPERATING INSTRUCTIONS FOR THE MODEL 335 WIDE-BAND MULTIPLEX ADAPTOR



This superb Wide-Band adaptor has been designed to provide maximum quality when used with any H. H. Scott Wide-Band tuner to receive multiplex stereo broadcasts. We do not recommend using this adaptor with tuners of other manufacture although it is perfectly possible that this adaptor will function with some other tuners. We cannot, however, guarantee that multiplex reception under these conditions will match FCC transmission specifications. These specifications can be matched when you use an H. H. Scott Wide-Band tuner with the H. H. Scott Model 335 Wide-Band Multiplex Adaptor.

To get the best results, it is essential that you read these instructions completely and carefully.

INTRODUCTION

Multiplexing is a method of superimposing two or more programs on a single FM transmission. Thus a person tuned to a single FM station broadcasting multiplex stereo can receive a full stereophonic signal provided he also has a stereo amplifier and two speaker systems. The main FM carrier transmits the basic information from both right and left channels so a person with no adaptor would still not be missing anything (although he would not be hearing in stereo). It is the multiplex sub-carrier that conveys the difference (or stereo) information. The multiplex adaptor automatically combines this difference material with the monophonic information provided by the main **FM carrier** and then separates out the right and left channels for full **stereophonic** reception. When operating the adaptor, keep in mind that it is the subcarrier which is most prone to background noise due to its lower signal to noise

HERMON SCOTT . . . AUDIO PIONEER

Hermon H. Scott received B.S. and M.S. degrees from M.I.T. Inventor of the RC Oscillator, RC tuned circuits and filters, the Dynamic Noise Suppressor and other devices, he has many U. S. and foreign patents. His technical leadership was recognized by election as Fellow in the Institute of Radio Engineers, Acoustical Society of America, and Audio Engineering Society, and by numerous awards, including the Potts Medal. He is the author of many technical papers and articles.

IMPORTANT FIRSTS . . .

by H. H. Scott

First high fidelity AM-FM Stereo tuner using wide range AM design.
First to successfully use wide-band circuitry in high-fidelity FM tuners. First to market The Stereo-Daptor, a stereo control unit that prevents obsolescence. First to provide center channel output on Stereo amplifiers for added realism in playback.

The cable going to Channel B input of the 335 is not necessary for stereo reception. It is simply a convenience. If you are listening to a monophonic broadcast, you will have signal at both speakers without changing any switch positions on your amplifier.

Three shielded audio cables of the type you are already using to connect your tuner to the amplifier have been provided. If additional cables are needed, these can be easily obtained from your dealer.

For optimum performance, the cable length between the tuner and adaptor should be no more than three feet; between the adaptor and amplifier, ten feet maximum.

STEP BY STEP OPERATING INSTRUCTIONS

Before proceeding with the actual operation of the adaptor make sure you understand the function of each switch as described under "Description of Controls." In particular make sure you understand the Adaptor switch. When the Adaptor switch is in the *in* position, all controls on the 335 are in operation and all the controls (except power, tuning, and Distant-Normal switch on 310C and 310D) on your FM tuner are inoperative. When the Adaptor switch is *out*, the adaptor is out of the system. When you want to listen to FM stereo multiplex broadcasts, slide the Adaptor switch to *in*. When there are no stereo multiplex broadcasts slide the switch to *out*.

TO LISTEN TO STEREO MULTIPLEX BROADCASTS

1. Select a station on your FM tuner known to be broadcasting stereophonic sound via multiplex transmission.
2. Slide Adaptor switch to *in*.
3. Slide Stereo Noise Filter to *out*.
4. Set Selector switch to *Stereo*, *Subchannel Noise Filter Out*.
5. Adjust the Level control for proper volume (this control operates both channels). An easy way to tell if this Level control is set properly is to turn the Selector switch to *Mono*. If the over-all loudness does not change when you switch the Adaptor switch between *in* and *out*, then the Level setting is correct.
6. Set the amplifier tone and loudness controls to suit your taste.

TO LISTEN TO STEREO MULTIPLEX BROADCASTS WITH SOME BACKGROUND NOISE 1, 2, 3, 4 as above.

If you notice that the sound is somewhat noisy (make sure that it isn't record surface noise being broadcast by the FM station), turn the Selector switch to *Mono*. If the noise disappears, return the Selector switch to *Stereo*, *Subchannel Noise Filter In*. If the noise is still present in the *Mono* position, return the Selector switch to *Stereo*, *Subchannel Noise Filter Out*; and slide the Stereo Noise Filter switch to *in*. 5 and 6 as above.



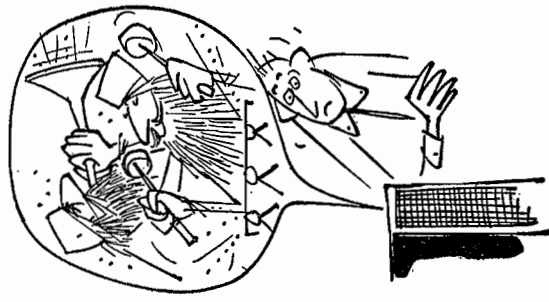
TO LISTEN TO REGULAR MONO-PHONIC FM BROADCASTS OR FM/AM BROADCASTS

1. Slide Adaptor switch to *out*. (You can turn the Selector switch to *off* if you desire to conserve electricity. However, whether the 335 is on or off - **YOU MUST SLIDE THE ADAPTOR SWITCH TO OUT IF YOU DESIRE TO USE YOUR TUNER BY ITSELF.**)
2. Set controls on your tuner and amplifier as desired.

SPECIAL NOTES AND SUGGESTIONS

310D and 310C - Both these tuners incorporate a special Distant-Normal switch which was primarily designed to give improved response with multiplex. When listening to a stereo multiplex broadcast, slide this switch into the *Distant* position. For regular FM listening, the *Normal* position is preferred.

399 - This combination tuner-amplifier already incorporates a switch on the front panel to provide for either multiplex reception or regular FM/AM, phono, tape usage. When using the 399 for stereo multiplex turn the Input Selector switch on the 399 to *FM-FM*, *MX Stereo* position. When using the 399 for other purposes, turn the Input Selector to the desired position. Because of



this special switching on the 399, it is not necessary to move the 335 Adaptor switch away from *in* at any time.

THINGS TO WATCH FOR

Multiplex stereo broadcasting is a new experience for most FM stations. Certain problems may arise since their own equipment and operating techniques may not be developed to the point where you can consistently expect the ultimate in performance in the beginning. Here are some hints and suggestions to help you improve on poor radio station broadcast techniques:

Background music — Multiplexing has been used by many broadcast stations to transmit background music to restaurants, offices, factories, etc. The FCC-approved stereo multiplex system does not interfere with this additional source of station revenue in any way. Without this additional income, many FM stations would not be able to stay on the air and bring you their wonderful good music programs.

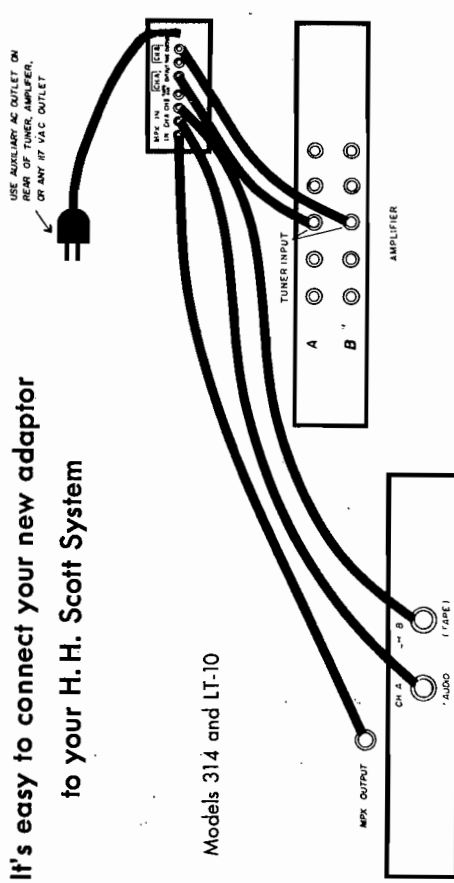
You will not be able to receive these background music programs with any adaptor which meets the new FCC specifications. However, occasionally, if a station is using a subcarrier in the range of the stereo subcarrier channel for background music, you may hear some interference effects (like whistles) on your music system. This will only happen if you are using your FM tuner for regular FM reception and the 335 Adaptor switch is in the *in* position. This interference will not appear with a station using their subcarrier for stereo. It can easily be eliminated by keeping the Adaptor switch in the *out* position for normal FM reception as we suggested in the operating instructions.

Also, on very rare occasions you will find broadcasting stations that are transmitting two multiplex subcarriers, one for stereo and one for background music. In such cases there may be some interference between the two subcarriers. This can be corrected by any or all of the following suggestions:

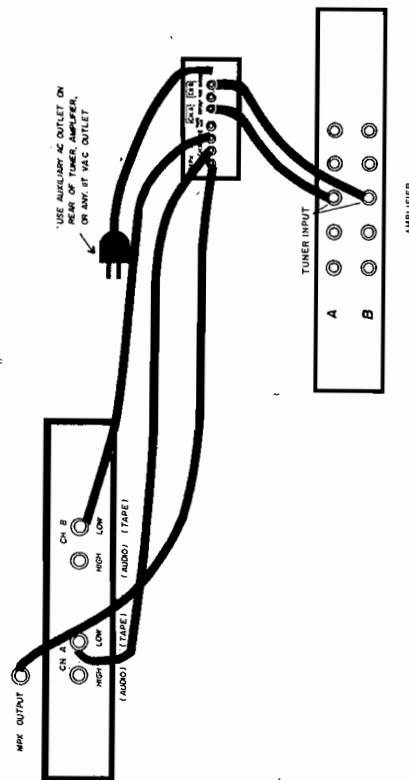
- (a) Tune in the station more carefully.
- (b) Reposition your antenna.
- (c) Reverse the antenna leads.
- (d) Use a better and more directional antenna.

Distortion when the Selector is set for *stereo*, which disappears when the Selector is turned to *Mono* is primarily due to transmitter problems as discussed above. This can easily happen in areas with many hills or tall buildings that cause reflections. However, some improvement is possible in many cases by any or all of the above four suggestions.

It's easy to connect your new adaptor to your H. H. Scott System



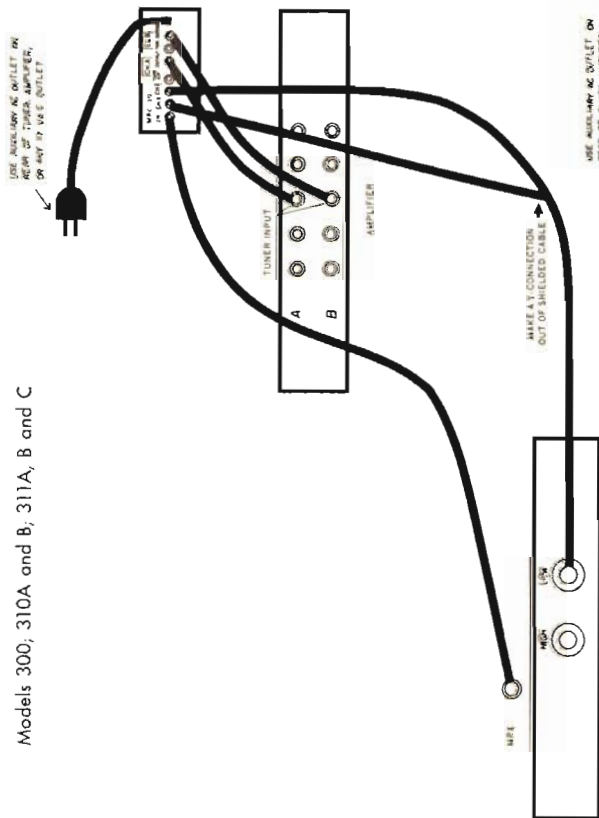
Models 310C and D, 311D, 320, 330A, B, C and D, 331A, B and C



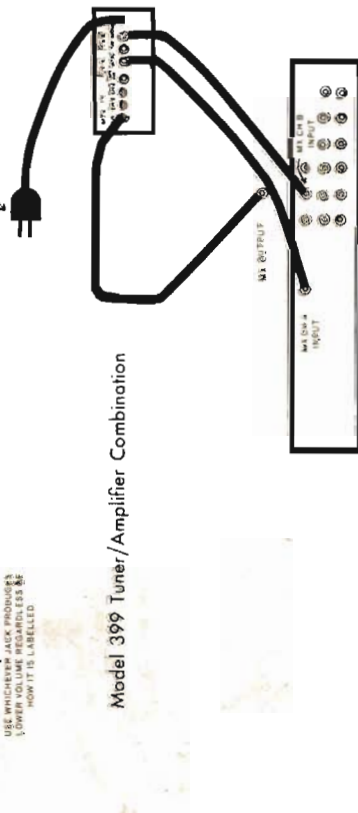
Notes:

1. On Models 310C, 310D and 311D the two low outputs are next to each other, rather than as depicted in diagram. Also use MPX output as shown on diagram.
2. On Model 320, you are now using Channel A and B outputs to your amplifier. Disconnect these cables from amplifier and run them to adaptor. Keep 320's front-panel slide switch in "normal monophonic" position. Also use MPX output as shown on diagram.
3. On Models 330A and B, and 331A, B and C, correct outputs are labeled "Binaural." Also use MPX output as shown on diagram.

Models 300, 310A and B, 311A, B and C



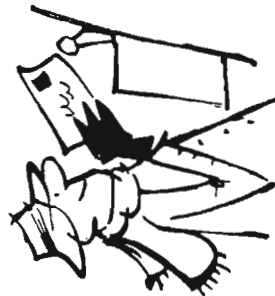
Model 399 Tuner/Amplifier Combination



A FINAL WORD....

If you have any questions concerning the operation of this instrument, a letter to the following address will bring a prompt, personal reply.

MULTIPLEX SERVICES DEPT.
H. H. SCOTT, INC.
111 POWDERMILL ROAD
MAYNARD, MASS.



H. H. SCOTT . . . a history of leadership in the Acoustic field

To insure that every H. H. Scott component meets the highest standards of quality, H. H. Scott maintains this ultra modern plant for the design and manufacture of all its components. This new plant, located in Maynard, Massachusetts, includes a machine shop, sheet metal facilities, coil and transformer department, electrical assembly department and fully equipped laboratories for design and research. The engineering department is staffed by 12 graduate engineers who are primarily concerned with developing new and better components for high fidelity sound. Every high fidelity component receives over 50 electrical and mechanical tests before it leaves the factory. Special electrically shielded "screen rooms" are used for aligning FM tuners. There are life test facilities where components are run for thousands of hours under strict controls to test their durability. These extensive investments in facilities back up H. H. Scott's philosophy that there will never be any compromise with quality.