

OPERATING INSTRUCTIONS

FOR

HILTON

SOUND SYSTEMS

MODELS

AC-200 and SS-200

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SS-200 AMPLIFIER-MONITOR, FITTINGS AND CONTROLS

REAR PANEL

At the far left, the switch marked "INTERNAL" and "EXTERNAL" is the monitor speaker-selector switch. The monitor amplifier can be played either through its built-in speaker, or by moving this switch through the external speaker sockets located immediately to the right of the selector switch. Speakers may be connected to these sockets to provide a program for a separate room or area where a different volume level is desired than that going to the main floor; to provide coverage for part of the main floor when using the monitor amplifier as a slave (tandem operation); or to provide additional monitor program for the caller. If you should set up to operate, and find that no program is coming through the built-in monitor speaker, CHECK THIS SELECTOR SWITCH TO BE SURE THAT IT IS SET TO "INTERNAL."

The red button to the right of the monitor speaker outlets is the reset button for the built-in circuit breaker, which replaces the fuse provided in earlier models. If this breaker should trip from a power surge in the house AC, or from some other cause, wait a moment, press the reset button, and normal operation should be restored. If the breaker should again trip, shut the power off, and have the amplifier checked for possible internal short circuit.

At the center of the rear panel is a jack marked "TAPE RECORD." This is a dual-purpose jack, and is used to make tape recordings of the program going to the floor through the main channel speakers, and also for hookup of a slave amplifier. In this manual, you will find a section dealing with the proper use of this jack for making tape recordings, and one dealing with its use in connection a slave amplifier. Two speaker outlets are provided for the main channel, and the SS-200 will operate perfectly with one or two Hilton speakers connected directly to the main channel. If you wish to use the SS-200 for practice sessions without connecting the main speakers, no damage will result; turn off the volume controls for the main channel, and use the monitor controls and speaker. In another section of this manual you will find instructions and diagrams for proper hookup of speakers. DO NOT CONNECT MORE THAN TWO HILTON SPEAKERS, OR MORE THAN ONE SPEAKER NOT OF OUR MANUFACTURE, TO THE SAME CHANNEL UNTIL YOU HAVE CAREFULLY READ THAT SECTION.

The AC power cord is permanently connected to the SS-200, and a storage space is provided at the right, above the rear panel.

OUTPUT METER

An output meter with a scale of 1 to 10 is located on the front of the SS-200, for easy reading of music-voice balance and total output level. The selector switch just below the meter should be left in normal position unless you are operating at drive levels which peg the needle at maximum constantly; then switch to the low position to introduce resistance which will bring the needle back on scale. See also the section entitled "Use of the Output Meter."

MONITOR SPEAKER

An Altec No. 755-E speaker in a sealed acoustic enclosure is built into the SS-200, just behind the meter, to give the caller any level of music or combination of voice and music independently of the program going to the floor through the main channel. The monitor speaker is protected by built-in resistance from being overloaded by turning up monitor volume; with the selector switch on the rear panel in "EXTERNAL" position, the full output of the 100-watt monitor channel is available to drive external speakers.

PILOT LIGHTS

Two pilot lights are provided on the front of the SS-200, to indicate when the amplifier is in operation.

All other controls on the front panel of the SS-200 are identical with those of the AC-200; their operation will be described in a separate section.

AC-200 TWIN CHANNEL AMPLIFIER, FITTINGS AND CONTROLS

REAR PANEL

At the far left, next to the serial number plate, are the main channel speaker sockets. The AC-200 will operate perfectly with either one or two Hilton speakers connected to the main channel. In another section of this manual you will find instructions and diagrams for proper hookup of speakers. DO NOT CONNECT MORE THAN TWO HILTON SPEAKERS, OR MORE THAN ONE SPEAKER NOT OF OUR MANUFACTURE, TO THE SAME CHANNEL UNTIL YOU HAVE CAREFULLY READ THAT SECTION.

Moving to the right, you will locate the jack marked "TAPE RECORD." This is a dual-purpose jack, and is used to make tape recordings of the program going to the floor through the main channel, and also for hookup of a slave amplifier. In this manual you will find a section dealing with the proper use of this jack for making tape recordings, and one dealing with its use in connecting a slave amplifier.

To the right of the Tape Record jack are the monitor channel speaker sockets. The output of these sockets is controlled by the Monitor volume controls, and a speaker may be plugged into one of these sockets for use as a caller's monitor, if desired. With the output selector switch on the front panel in Tandem position, all four speaker sockets are controlled with identical output by the main channel controls.

The AC power cord is permanently attached, and the space at the far right is for storage of this cord.

TOP DECK

The jack at the upper left hand corner of the top deck is for playing back tape recordings through the amplifier. When a plug is inserted into this jack, the phono pickup arm is cut out and the taped program can be played back through either channel, using the phono volume and tone controls.

The circuit breaker on the AC-200 is located immediately behind the turntable platter on the top deck. If the breaker should trip from a power surge in the AC line, or from some other cause, wait a moment, press the reset button, and normal operation should be restored. If the breaker should continue to trip when reset, shut the power off, and have the amplifier checked for possible internal short circuit.

The strobe light at the front of the turntable illuminates the strobe disc and also serves as the pilot light, to indicate when the amplifier is in operation.

AC-200 AND SS-200 AMPLIFIERS, FRONT PANEL CONTROLS

The ON-OFF switch is located at the lower left. This switch controls the AC both to the amplifier and to the turntable motor, which continues to run as long as this switch is turned on.

The PHONOGRAPH VOLUME control adjusts the loudness of the music program for the main channel, with the output selector switch in Tandem position, it controls the music program for the monitor channel, also.

Phono BASS AND TREBLE CONTROLS adjust bass and treble compensation of the music program for both the main and monitor channels. Extremely wide latitude is provided, and we recommend using only the minimum adjustment from normal which will give the music the sound that you desire.

SCRATCH FILTERING: For worn or scratchy records, turn the phono treble control 45 degrees to the left of the normal setting. This accomplishes exactly the same result as the separate scratch filter switch provided on earlier Hilton models.

REMOTE CONTROL JACK: By plugging in the Hilton Remote Control Assembly, the music volume for both the main and monitor channels can be adjusted with the knob on the microphone, without touching the knobs on the front panel. RECOMMENDED OPERATION: Plug in the remote control and turn its volume control full on. Set the phono and monitor music volume at a level slightly higher that you desire for best voice-music balance. Use the remote control to decrease the music volume to the level desired. Without touching the amplifier knobs, you can now drop the music volume to 25% of its preset level for talk-thru spots, increase it for added excitement and lift or for sing-along choruses, without blasting music which annoys your dancers, and restore proper voice-music balance.

MICROPHONE INPUTS AND CONTROLS: Two identical microphone inputs are provided. Volume and treble-bass controls are completely independent of each other, and of the music program.

MICROPHONE TREBLE-BASS CONTROL: One of the features which makes the Hilton sound system outstanding is the ability of its voice circuits to reproduce cleanly the high frequencies WHICH ARE ABSOLUTELY ESSENTIAL FOR CLARITY AND UNDERSTANDABILITY OF COMMANDS. If you have a bass voice range, turn the tone control to the right far enough to be sure that there is no boominess; if you are a baritone leave it near the normal setting. Even if your voice is high in pitch, do not turn the tone control more than 30 to 40 degrees to the left of normal. The extreme bass setting on the Hilton is not designed for voice reproduction, but for use in instrument pickup, or for connecting the amplifier as a slave, with all compensation being accomplished by the control amplifier. If you have not worked with Hilton equipment before, do not make the mistake of attempting to duplicate the sound of your voice on your previous unit. To do so would be similar to buying a new color television receiver, and tuning it so that the picture is black and white!

MONITOR CONTROLS: In response to many requests, two volume controls are provided one for music and one for voice. This feature makes it possible to feed in as much voice to the monitor program as desired, rather than being restricted to music only, or the same balance as the program on the main channel. This dual control also makes it possible, in the unlikely event of a failure in the main channel, to connect the floor speakers to the 100-watt monitor channel and complete your dance! (On the SS-200, move the monitor switch to External setting to switch its output to the floor speakers.)

OUTPUT SELECTOR SWITCH

The Hilton AC-200 and SS-200 are extremely powerful and flexible sound systems, designed to provide outstanding clarity and coverage under any operating condition, from a few squares to more than two hundred. The three-position output selector switch makes operation and control easy and convenient, no matter how large or small the dance.

NORMAL POSITION: For easy control of volume and balance at fairly low output levels. A high-powered amplifier in a small hall is sensitive and difficult to adjust precisely, because a small adjustment produces considerable difference in volume. The NORMAL SETTING should be used in all situations in which floor coverage does not require settings above 11 o'clock on the phono and microphone volume controls.

INCREASED POSITION: Produces double the volume provided by the NORMAL setting, at any given knob setting on the volume controls. When floor coverage requires settings of more than 11 o'clock, switch to INCREASED setting; you can now cover up to 100 squares with the main channel.

TANDEM POSITION: Locks the main and monitor channels together, making their combined output of over 200 watts available for floor coverage. A single amplifier has covered more than 200 squares, using this setting. Both music and voice are controlled by the knobs for the main channel, and all four speaker outlets on the rear panel produce identical volume. With the TANDEM setting, you can drive as many as eight Hilton speakers with your amplifier. DO NOT CONNECT MORE THAN TWO SPEAKERS TO EITHER CHANNEL WITHOUT READING AND FOLLOWING CAREFULLY THE INSTRUCTIONS AND DIAGRAMS IN THE SECTION ON SPEAKER HOOKUP.

SPEAKERS

The speakers furnished and recommended with the AC-200 and SS-200 are Altec-Lansing model 417 high efficiency, heavy duty instrument rated speakers with extremely high power handling capacity, mounted in folded horn enclosures. These speakers will handle extremely high output with no distortion, or risk of damage to cone or voice coil. These speakers will handle the full rated output of your amplifier without overloading. CAUTION: THE USE OF SPEAKERS WITH A LOW POWER HANDLING CAPACITY WITH YOUR AMPLIFIER CAN RESULT IN DAMAGE TO SPEAKERS IF THE AMPLIFIER IS OPERATED AT OR NEAR FULL RATED OUTPUT. WHEN SUCH SPEAKERS ARE IN USE, THE OUTPUT SELECTOR SWITCH SHOULD BE LEFT IN "NORMAL" POSITION ONLY.

SV2 TURNTABLE

Provided with the SS-200 and the AC-200 amplifiers is the Hilton SV2 Synchro-Variable turntable, mounted on the top deck of the AC-200, and in the lid of the SS-200. On the SS-200-SV2, two convenience lights are provided on the top deck, for use in locating pickup grooves when working in poorly lighted areas, and at the rear of the platter a small clip is installed to keep the platter in place when carrying. Space does not allow installation of convenience lights in the AC-200, and the clip is unnecessary because the lid of the case holds the platter in place when carrying the unit.

TURNTABLE FEATURES

TONE ARM: The pickup cartridge is located so that the needle is easy to see, when placing it on your records. The cartridge is a slip-in, ceramic type with a 1-mil diamond needle, Astatic No. 89-1D. The counterbalance is set at the factory at the pressure which gives the best insurance against needle skipping, consistent with good record life and needle wear. This setting is for square dance work, which often involves rickety tables and stages, and is considerably heavier than that which would be used for non-portable hi-fi usage. An anti-skate spring assembly is provided and preset--the turntable does not have to be level to operate perfectly, and will play as much as 15 degrees from level. In normal use, with a needle in good condition, even bumping the table, while it may cause the music to wow, will not cause skipping. The arm is cushioned on soft rubber shock mounts, and produces less mechanical hum than many hi-fi turntables.

MOTOR AND DRIVE ASSEMBLY: The motor is a hysteresis-synchronous gear motor, of the type used to drive large clocks and timing devices. It is unaffected by voltage fluctuations, and will maintain speed as low as 85 volts. In a quiet room, with the turntable running and no music playing, you will hear the normal noise of the gear train in operation. This turntable is not designed for listening in a quiet room, but rather for use in a square dance hall. **THIS GEAR NOISE WILL NOT TRANSMIT OVER THE SPEAKERS EVEN AT EXTREMELY HIGH DRIVE LEVELS.**

SPEED CONTROL LEVER: Adjusts turntable speed from 30 to 50 RPM. In the OFF position, drive wheel is disengaged from underside of platter. Lever should be placed in OFF position when amplifier is shut off.

SETUP AND OPERATION

SS-200-SV2

Set the amplifier and turntable side by side on a table. Turn all volume controls off, power switch off, and check monitor switch on rear panel to be sure that it is in internal position. Set the output selector switch to NORMAL and all tone controls at normal. Plug turntable into phono socket on rear panel.

Set up speaker or speakers, locating them well above the heads of the dancers, and positioned so that their cone of sound covers all areas of the floor. Connect them to the main channel sockets on the rear panel.

Plug in your microphone. Check to be sure that the power source is not 220 volts, which could seriously damage your amplifier. Plug in the power cord, and turn the system on. Start the turntable and check to see that it strobos correctly. Turn on the mike, set volume at about 9 o'clock, and test by speaking into it--not blowing into it. Put a record on, and check both main and monitor channels by turning up volume on each. In a strange hall, if time permits put on a called record and walk the floor to be sure that speakers are properly located to cover the entire floor with a comfortable level of sound.

If you use the monitor channel, always start each tip with the volume shut off, until you have made sure that total volume and voice-music balance are properly set for the dancers' comfort; then turn up as much monitor music and/or voice as desired for your own comfort.

See also sections on REMOTE CONTROL JACK, MICROPHONE TREBLE-BASS CONTROL, MONITOR, MONITOR CONTROLS, OUTPUT SELECTOR SWITCH, SPEAKER HOOKUP, USE OF THE OUTPUT METER, GETTING THE MOST OUT OF YOUR HILTON.

AC-200

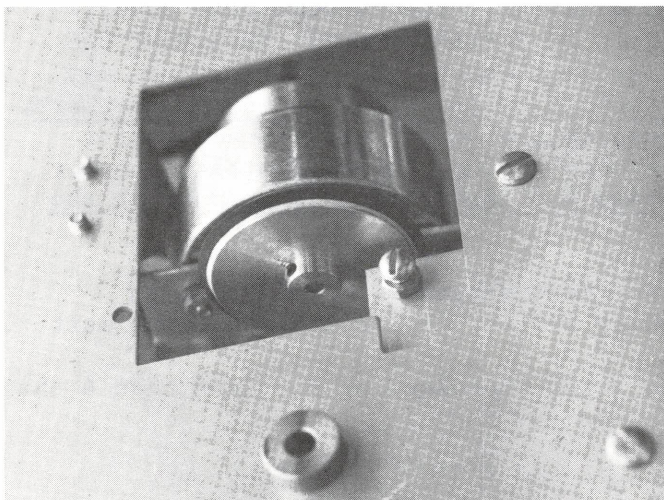
Follow procedures described for SS-200-SV2, except for turntable hookup and monitor selector switch. If using the Hilton Monitor Record Case, follow the hookup instructions provided with it. If using an extra speaker as a caller's monitor, connect it to a monitor speaker outlet on the rear panel, and proceed as shown with SS-200.

TURNTABLE MAINTENANCE AND ADJUSTMENT

The SV2 turntable has a hysteresis-synchronous motor, which runs at absolutely constant speed. Any fluctuation of turntable speed is the result of slippage between the drive wheel and the underside of the turntable platter. Such slippage can be caused by an accumulation of oily film on the underside of the platter and/or the rubber rim on the drive wheel; or by the shaft and bearing becoming dry or dirty.

For routine maintenance, you should obtain an aerosol can of a non-lubricating cleaner of the type used for cleaning radio and TV controls and tuners, and a small can of light oil. Every three months, or oftener if necessary, follow the procedure described below for cleaning, lubrication, and adjustment of your SV2 turntable, to keep it in top operating condition.

1. Being careful not to lose the 3/16" ball bearing from the bottom of the turntable shaft well, lift the platter straight out. With a clean cloth dampened with the aerosol cleaner, thoroughly clean the underside of the platter inside the paper strobe disc, the rubber rim of the drive wheel, and the turntable shaft and brass bearing into which it fits. Put a light film of oil on the shaft. Make sure the ball bearing is in place, and replace the platter. If any slippage was occurring because of buildup of oily film on the wheel or platter, or by excessive friction in the shaft bearing, this will correct it and the speed will now hold constant.
2. If the ball bearing is in place, the turntable is clean and properly lubricated, and the speed still does not hold constant, it is the result of incorrect pressure of the drive wheel on the underside of the platter. This pressure is controlled by a spring which exerts upward pressure on the motor mount, and its tension can be changed if the unit should be dropped or roughly handled. Its pressure can be checked and adjusted as follows:



Start turntable running and set speed so that strobe shows 45 RPM.

Stop the turntable with your finger. The motor should gradually lug down and stop. If motor continues to run at constant speed when you stop the turntable with your finger, spring tension is too weak. If motor stops immediately, tension is too strong.

To adjust spring tension: Lift the platter, and locate the slotted adjustment screw, between the shaft well

and the drive wheel, and just to the right of center. Loosen the lock nut, and turn the adjustment screw clockwise to decrease spring tension, or counter clockwise to increase tension. When stopping the turntable with your finger causes the motor to gradually lug down to a stop, this tension is correct. Tighten the lock nut and replace the platter and turntable is ready for use.

To check and adjust spring feet: Set the unit on a table, and check to see if any of the spring feet are bottoming out from the weight of the unit. These springs should be adjusted so that they support the weight of the SV2 or AC-200 about mid-way between the top and bottom of the travel allowed by the retainers. If necessary, remove one or more retainers, stretch or compress the springs to proper tension, and BE SURE TO REINSTALL EACH SPRING IN THE SAME LOCATION FROM WHICH YOU REMOVED IT. Because of weight distribution, not all of these springs are supposed to have the same tension.

SPEAKER HOOKUP--SS-200 OR AC-200

ONE SPEAKER:

Plug the speaker into the desired channel.

TWO HILTON SPEAKERS TO THE SAME CHANNEL:

Either plug both speakers directly into the amplifier, or plug one into the amplifier, and the other into the socket on top of the first speaker.

SPEAKERS OTHER THAN HILTON SPEAKERS:

Before connecting two speakers to the same channel, first find out their impedance. If they are 8- or 16-ohm speakers, use the same hookup as for Hilton speakers. If they are 4-ohm speakers, plug one of your series "Y" connectors into the amplifier, and connect one speaker to each leg of the "Y" connector.

MORE THAN TWO SPEAKERS:

DO NOT CONNECT MORE THAN TWO SPEAKERS TO THE SAME CHANNEL WITHOUT CAREFULLY READING AND FOLLOWING THE DIAGRAMS AND INSTRUCTIONS WHICH FOLLOW.

Hilton speakers are 8-ohm speakers. If you connect, for example, four of them directly to the same channel, this parallel connection will result in a 2-ohm net impedance, which at high drive levels can produce excessive heat. Your amplifier is equipped with a built-in thermal protection device which, should this occur, WILL SHUT OFF THE AMPLIFIER AND NOT ALLOW IT TO BE RESTARTED UNTIL THIS HEAT HAS DISSIPATED. No damage will occur to amplifier or speakers, but your program may suffer an embarrassing interruption, caused solely by incorrect hookup of speakers. The diagrams and instructions show correct use of the series "Y" connectors for hookup of 3, 4, 6, and 8 speakers, to obtain equal volume level from each speaker and to maintain proper net impedance. Diagrams and instructions are found at the end of this manual.

If you must use a speaker hookup not shown in these diagrams, or if you plan multiple hookup of speakers not manufactured by Hilton, the following points must be considered:

1. You must use a hookup which will produce a net impedance of not less than 4 ohms to an amplifier channel.

2. The net impedance to each leg of a series "Y" connector should be the same; or the speakers driven by one leg will receive more energy and therefore produce more volume than the speakers driven by the other leg.
3. Different makes and types of speakers have different degrees of efficiency and will produce different sound volumes even when driven at the same amplifier output.

HOW TO DETERMINE NET IMPEDANCE:

To determine the net impedance of a given speaker hookup, it is necessary to understand and apply the following:

IMPEDANCE: The resistance produced by the voice coil of a speaker, expressed in OHMS. Hilton speakers are 8-ohm speakers, others may have an impedance of anywhere from 4 to 16 ohms.

PARALLEL CONNECTION: A hookup in which the output of an amplifier is divided among speakers, with part of that output going to each speaker. The speaker sockets on your main channel are connected in parallel with each other, as are those of the monitor channel. The plug and socket on top of the Hilton speaker are also in parallel with each other.

SERIES CONNECTION: A hookup in which all of the amplifier output passes through each speaker, instead of being divided among them. If you plug a series "Y" connector into the amplifier and connect one speaker to each leg, you have the speakers connected in series.

SERIES-PARALLEL CONNECTION: If you have two groups of parallel-connected speakers, and connect each group to one leg of a series "Y" connector, you have a series-parallel connection.

NET IMPEDANCE: The combined impedance of speakers connected together:

IN PARALLEL--The impedance of 1 speaker, divided by the number of speakers.

IN SERIES--The impedance of 1 speaker, multiplied by the number of speakers.

IN SERIES-PARALLEL: The net impedance of each parallel group, multiplied by the number of groups.

THE USE OF THE OUTPUT METER

The SS-200 has a meter built into the front of the amplifier; the AC-200 does not, due to lack of space. Available for use with the AC-200 is the matching monitor record case, which incorporates a monitor speaker and vumeter identical to that of the SS-200, into a case with capacity for 60 records and a space for microphone and cords.

The output meter is a very valuable accessory, once you have learned how to evaluate the information that it gives you. It keeps you informed of three important things: The total volume of the program going to the floor, the volume of the music going to the floor, and the balance between the voice and music.

First, the total volume on the floor: For any given dance, it is desirable to have enough volume so that everyone in the hall can hear comfortably, without being so loud as to annoy the dancers, particularly in the front of the hall. Once you have established what the proper volume should be, by checking the meter reading it is very easy to maintain the proper sound level throughout the evening, without guesswork.

Second, the voice-music balance: In most cases, this can be checked easily by merely listening to a floor speaker as you call to determine that your voice is coming through clearly over the music so that the dancers do not have to strain to pick

out your commands. But in some cases where you have a recessed stage, and the floor speakers are out in front and to the sides of the stage, it is almost impossible to check balance from a floor speaker. By establishing total volume desired and maximum music volume which will not interfere with command, you can assure yourself that your volume and balance are correct, without having to rely on people on the floor to give you this information.

Third, the music volume: It must be far enough below the voice volume that your commands can be easily distinguished, while still being loud enough for the dancers to hear the beat and the melody, especially in the case of a singing call. It would be nice if all square and round dance records were recorded at the same level, but they are not. Here's an experiment you might try: Set up your equipment, set the output selector switch at Normal, phono bass and treble controls at Normal, and phono volume at 9 o'clock. Play several of your records, and check the meter readings. If your collection is typical, you will have readings as low as 2 and as high as 6, with the same volume setting! It is obvious that each time you change records it is necessary to adjust your phono volume to maintain proper voice-music balance.

Now, to put the three things together--let's take for example a hall in which the proper total volume to cover the floor reads 8 on your meter. For correct balance, the music volume should never get above 6, and it should average perhaps 4 or 5. As you call your dance, you will not have to change your mike setting once the crowd has all arrived; but you will constantly have to adjust your phono volume up and down to maintain the proper voice-music balance. The output meter can be a very valuable aid in accomplishing this.

MAKING TAPE RECORDINGS FROM YOUR HILTON

By following carefully these instructions for hookup, you can make excellent recordings with either a reel-to-reel or cassette recorder, directly from your Hilton amplifier.

DO NOT MAKE TAPE RECORDINGS BY CONNECTION TO THE SPEAKER SOCKETS. Some tape recorders have a shorting switch across their input. If you plug one of these into a speaker socket, it will cause the amplifier to overheat and shut itself off.

Reel-to-reel recorders: Use a shielded cable with a plug on one end which fits the tape record jack on the rear panel (Switchcraft #280 or equivalent) and a plug on the other end which fits the microphone input on the recorder. DO NOT USE ANY OTHER INPUT TO MAKE A TAPE FROM THE HILTON. Be careful not to over-record--this will make the playback sound mushy. If you under-record, your Hilton has plenty of power to produce all of the playback volume that you wish, and the program will be clean. If the recorder has a distortion light or a level meter, use it to prevent over-recording.

Cassette recorders: The correct hookup is the same as that described above--tape record jack to microphone input. A special cord may be required with a resistance network built in, since many cassette recorders are extremely sensitive in the input section, and susceptible to over-recording if a strong signal is fed in. If you have trouble with over-recording on a cassette, we have available a cord made up for the purpose, with a Switchcraft #780 plug on the recorder end. If this plug does not fit the mic input on your cassette, please state the make and number of the plug that you require.

PLAYING BACK A TAPE THROUGH YOUR HILTON

Do not use microphone inputs for tape playback. While it is possible to play back a tape by plugging into a microphone channel, it is not recommended, for two reasons: First, some tape recorders with built-in amplifiers have the capacity, if their output volume is accidentally turned full on, to seriously damage the microphone input section of your amplifier. Second, even if you are using a low-powered recorder or a tape deck, the treble-bass compensation latitude is not as satisfactory from the single control on the microphone input, as compared with that of the phono controls.

To play back a tape through your Hilton, use a shielded cable with a plug on one end which fits the external speaker output on the recorder. For the SS-200, you need a plug on the other end which fits the PHONO input on the rear panel--Cinch-Jones #P-306-CCT or equivalent. Connections are shield to #6 terminal and audio to #5. For the AC-200 you need a plug which fits the TAPE PLAYBACK input on the top deck. Set the output selector switch on the Hilton at Normal and the phono volume at about 9 o'clock. Turn up only enough volume on the tape recorder to get a soft listening level from the Hilton, then use the phono volume, bass, and the treble controls to produce the volume and compensation that you desire.

CORRECT HOOKUP FOR A SLAVE AMPLIFIER

In certain situations it is desirable to use not one, but two or more amplifiers, each driving its own speakers, for proper sound coverage in halls which are too large to cover with one amplifier; to put sound in an additional room which requires a different level of sound than the main hall; to cover an ell which requires less volume than the main section of the floor, etc.

On your Hilton amplifier, the TAPE RECORD jack is designed for this purpose, as well as that of making tape recordings. To connect a slave amplifier, use the following procedure:

Set up the main amplifier with its speakers to cover the area desired. Set up the slave amplifier with its speakers to cover its assigned area. If the slave amplifier is to be located no more than 30 feet maximum from the main amplifier, plug a shielded cable from the TAPE RECORD jack of the main amplifier into a MICROPHONE input of the slave amplifier. SET THE TONE CONTROL OF THIS MICROPHONE INPUT TO FULL BASS, ALL THE WAY COUNTERCLOCKWISE. Put a called record on the turntable of the main amplifier, and turn up enough volume so that its assigned floor area is covered with sound at a comfortable level. Then turn up the microphone volume control on the slave amplifier to produce coverage of its area at a comfortable level. No further adjustment of the slave amplifier will be necessary. Every adjustment of volume, treble, or bass which is made on the main amplifier will be duplicated by the slave amplifier.

The use of a plain shielded high impedance cable of over 30 feet maximum is not recommended for slave hookup. If the slave amplifier must be located more than 30 feet from the main amplifier, you should use sufficient length of LOW IMPEDANCE cable, and a pair of LINE MATCHING TRANSFORMERS, each with a Switchcraft #280 plug or its equivalent. Plug one transformer into the TAPE RECORD jack on the main amplifier, connect the low impedance cable to this transformer, connect the other transformer to the other end of the cable. Plug the second transformer into the microphone input of the slave amplifier, and proceed as outlined above.

GETTING THE MOST FROM YOUR HILTON, AND AVOIDING DAMAGE TO IT.

MICROPHONE TECHNIQUE: Always work close to your mike--never let it get as much as an inch from your lips. Work straight into it, as much as possible. Holding the mike too far from your lips, or calling across it rather than into it, can rob you of more than half of the power and efficiency built into your Hilton.

SPEAKER LOCATION: Speakers should be placed so that the entire floor is covered with sound. They must be high enough so that when the sound level is comfortable at the rear of the hall, it is not deafening to the dancers in the front. Speakers should, if possible, be aimed directly at the heads of the dancers at the rear, so that the most intense part of the beam of sound passes over the heads of the dancers at the front. They should if possible be placed near enough to you so that you can hear the voice-music balance, but not so close that you are continually fighting feedback.

FEEDBACK: The feedback squeal can occur any time that power is turned up on an amplifier and an open mike is near a speaker. The more power is turned up, or the closer the mike is to the speaker, the louder the feedback will be. The squeal is caused by sound from the speaker being picked up by the mike and fed back into the amplifier. It is almost always the result of bad mike technique working so far from your mike that you have to turn up an excess of power to cover the floor. It can also be caused by standing too close to a floor speaker. Only very rarely is feedback caused by any defect in the mike or amplifier.

HANDLING AND TRANSPORTATION: Your Hilton is designed for ruggedness, and with the normal handling to be expected in portable use, it will give years of trouble-free service. It should be protected as much as possible from dropping and banging around, obviously. For transportation to and from your dances, it may be stowed in any position for convenience, as long as it is protected from being scratched and bumped in hauling. It is recommended that the amplifier not be loaded so that its weight is supported by the spring feet of the turntable, to avoid fatiguing these springs and shortening their life.

NEEDLE CARE: The cartridge furnished is a slip-in type ceramic cartridge. To change it, merely grasp it by the sides and pull it straight out. It should last for hundreds of hours of normal use, but care should be taken not to drag it across records, or to drop it either on the record or on the exposed metal of the turntable. A soft foam pad is provided for a needle rest when changing records; this pad also assists in removing dust from the needle.

ROUTINE MAINTENANCE AND INSPECTION

Cleaning and maintenance of the turntable is covered in detail in another section of this manual. Routine cleaning and inspection of your amplifier, speakers, mike and cords will help in preventing trouble and maintain the appearance and performance of your Hilton. Here are a few suggestions for routine maintenance and checkup of your sound system:

CLEANING OF CONTROLS

If dust enters the operating parts of your volume controls, it will produce a noise that sounds like static when the knobs are turned. To clean the controls, use an aerosol cleaner or degreaser of the type used to clean radio or TV controls and tuners, which should be available at an electronic supply store. If the cleaner contains no lubricant, you can also use it for cleaning the drive wheel and platter on your turntable.

Remove the plastic knobs, tilt the amplifier so that the shafts point straight up; then flood the cleaner in around the shafts, rotating them as you do so. This will flush out dust and dirt from the inside of the controls.

CLEANING OF ALUMINUM, VINYL AND PLASTIC EXTERIOR SURFACES

A mild detergent and water on a soft cloth or sponge may be used to clean all of these surfaces, including the plastic knobs.

CHECKING OF CORDS, PLUGS, SOCKETS

Over a period of time, insertion and removal of plugs causes them and their sockets to wear--eventually to the point where they make intermittent contact. Also, the contact surfaces may corrode from moisture in the air, preventing good electrical contact. Cords can become frayed inside their insulation from repeated flexing, and become intermittent. Periodic inspection can prevent possible problems. Set up the sound system, plug in your mike and put on a record. As you call, wiggle each plug in its socket. Static and interruption of sound indicates worn plugs and/or sockets. Flex the speaker cords and mike cords, while listening for static and interruptions, which would indicate wear of the cords themselves.

CHECKING NEEDLE

Always keep a spare needle, in case of damage to the one you are using. The best way to check your needle is to put on a record and listen carefully, then put in the spare and with the same record playing listen for any difference in the sound. One symptom of needle wear is loss of the highs in the music, making it sound bassy.

MICROPHONE

A microphone in which the diaphragm is beginning to drag has opposite symptoms from those of a worn needle. There will be a loss of bass in the voice, the voice may sound a bit tinny, and there may be more susceptibility to feedback, with the same tone and volume setting.

CHECKING SPEAKERS

If a speaker has been dropped or handled roughly, it may develop a misalignment of the voice coil which can eventually cause what is known as a "draggy cone." To check for a dragging cone, hook up the speaker and put a record on. Shut the volume off, and turn the phono bass control to maximum and the treble to minimum. Put your ear in front of the speaker, and turn up just enough volume so that you can hear the music clearly. If the cone is dragging, you will hear a rasp on each bass note. The speaker may sound normal at your usual volume and tone settings, but the problem may gradually become worse until the speaker must be reconed. Any Hilton speaker which under normal use develops such a problem will be replaced without charge during its warranty period, and at a nominal exchange charge after warranty expires.

Having checked the speaker itself, check the plug and socket on top of the case. Then, with bass and treble controls at normal, turn up considerable volume and listen for any rattle or vibration caused from the grille or trim, and tighten or replace screws as necessary to correct. Use the same test procedures to check your monitor speaker, if you have one.

IN CASE OF TROUBLE

Your Hilton was carefully assembled and tested before delivery to you. It is backed by our two-year warranty against failure of any component in normal use, with the single exception of phonograph needles, which are intrinsically fragile. If trouble should occur from any cause, other than abuse or accident, we will promptly honor our warranty, PROVIDED THAT YOU NOTIFY US BEFORE ATTEMPTING REPAIR. Upon such notification, we will make every effort to correct the problem, by having repair done locally if feasible, by replacement of the defective unit at our expense, or by furnishing loaner equipment for your use while we accomplish repair in our shop.

NON-WARRANTY SERVICE

Even when your warranty is no longer effective, we advise that if a problem should develop, it would be wise to phone us before attempting repair locally. It is quite possible that we could save you both time and money, in getting your unit back into operation.

BEFORE NOTIFYING US

If any part of your Hilton equipment should develop a problem, the information you give us should be as detailed as possible, in order for us to provide you with the best service possible. For instance, if a microphone should stop working, the source of the trouble could be in the mike itself, in the mike cord, or in the mike input on the amplifier. A few simple tests before notifying us would be of great help in determining the source of the problem, and in correcting it quickly. Listed below are some of the tests you could make, which would be of great help to us, if you should have a problem.

SS-200: NO PROGRAM ON INTERNAL MONITOR SPEAKER

Check to see that selector switch is in INTERNAL position. If so, set switch to EXTERNAL, and plug one of your speakers into the monitor channel sockets. Recheck for program; this will determine if problem is caused by internal monitor speaker, or originates in the amplifier.

STROBE AND/OR PILOT LIGHTS ON, TURNTABLE OPERATIVE, NO VOICE OR MUSIC

Recheck speaker hookup. Check speaker cord(s) and speaker(s), if possible, by connecting them to another amplifier. If speakers and cords check OK, contact us for information re having local repairman check for possible shorted zener diode.

CIRCUIT BREAKER OPENS

Turn off power switch, press reset button, turn on power. If breaker again opens, turn off power switch, check line voltage, if possible. If line voltage is normal, disconnect speaker cords, and check again. If breaker remains closed, problem is in cord or speaker. If breaker repeatedly opens, contact us for information re having local repairman check for possible shorted diode in power supply.

MUSIC ONLY--NO VOICE

Change to other mike input. If both are inoperative, check mike inputs by plugging in another mike. If check with second mike shows one or both inputs inoperative, check to see if problem also affects monitor channel. Notify us of results, for prompt or replacement of mic, cord, or amplifier.