

**HILTON**

**MICRO-75A**

**SOUND SYSTEM**

**OPERATING INSTRUCTIONS**

PLEASE READ THIS MANUAL CAREFULLY, AND KEEP IT IN A SAFE PLACE FOR FUTURE REFERENCE. IT CONTAINS VALUABLE INFORMATION ABOUT YOUR NEW HILTON MICRO-75A SOUND SYSTEM: ITS FEATURES, HOW TO OPERATE IT, HOW TO TAKE CARE OF IT, HOW TO AVOID DAMAGE TO IT, WHAT TO DO IF A PROBLEM SHOULD OCCUR.

IF YOU SHOULD ENCOUNTER ANY PROBLEM IN SETTING UP OR IN OPERATING YOUR HILTON SOUND SYSTEM, OR IF YOU HAVE ANY QUESTION WHICH IS NOT ANSWERED IN THIS MANUAL, PLEASE WRITE OR PHONE:

HILTON AUDIO PRODUCTS  
1033-E SHARY CIRCLE  
CONCORD, CALIF. 94518  
(415)682-8390

## GUARANTEE OF SATISFACTION

ANY PURCHASER OF HILTON SOUND EQUIPMENT, IF NOT COMPLETELY SATISFIED WITH IT, MAY RETURN SUCH EQUIPMENT IN UNDAMAGED CONDITION, FREIGHT CHARGES PREPAID, WITHIN 30 DAYS AFTER ORIGINAL PURCHASE, FOR FULL REFUND OF ITS PURCHASE PRICE.

## TWO-YEAR WARRANTY

FOR A PERIOD OF TWO YEARS AFTER INITIAL PURCHASE, HILTON AUDIO PRODUCTS WILL, AT ITS OPTION, EITHER REPAIR OR REPLACE WITHOUT CHARGE ANY HILTON SOUND SYSTEM OR COMPONENT THEREOF WHICH FAILS IN NORMAL SERVICE, SUBJECT TO THE EXCEPTIONS LISTED BELOW. ANY REASONABLE SHIPPING AND TRANSIT INSURANCE CHARGES INCURRED IN THE COURSE OF WARRANTY SERVICE WILL BE PAID BY HILTON AUDIO PRODUCTS.

## EXCEPTIONS TO WARRANTY

WARRANTY IS RESTRICTED TO CORRECTION OF ANY DEFECT WHICH BECOMES EVIDENT IN THE COURSE OF NORMAL USE AND OPERATION, AND DOES NOT COVER ANY OF THE FOLLOWING:

1. REPLACEMENT OF PHONOGRAPH NEEDLES, WHICH ARE INTRINSICALLY FRAGILE.
2. REPAIR OF NORMAL WEAR AND TEAR: SCRATCHES, NICKS, DENTS, ETC.
3. MODERNIZATION OR ALTERATION TO SPECIFICATIONS WHICH WERE NOT IN EFFECT AT THE TIME OF ORIGINAL PURCHASE.
4. REPAIR OF DAMAGE WHICH IS CAUSED BY ACCIDENT OR ABUSE AND NOT BY ANY DEFECT IN THE SOUND SYSTEM.
5. REIMBURSEMENT FOR ANY REPAIR CHARGES NOT AUTHORIZED BY HILTON AUDIO PRODUCTS.
6. REPAIR OF DAMAGE WHICH IS CAUSED BY CONNECTING THE SOUND SYSTEM TO A 220 VOLT POWER SOURCE OR TO ANY PORTABLE GENERATOR OR INVERTER.
7. REPAIR OF DAMAGE WHICH IS CAUSED BY USING ANY OTHER CONNECTION OR HOOKUP WHICH IS STATED IN THIS MANUAL TO BE IMPROPER AND LIKELY TO CAUSE DAMAGE TO THE SOUND SYSTEM.
8. REPLACEMENT OF ANY UNIT WHICH HAS BEEN MODIFIED OR ALTERED IN ANY WAY, BY ADDING INPUTS OR OUTPUTS, BY PERMANENTLY CHANGING ITS APPEARANCE BY PAINTING, ENGRAVING IN AN EXPOSED SPOT, ETC.
9. PAYMENT OF ANY TRANSIT CHARGES OTHER THAN FREIGHT AND INSURANCE, SUCH AS CUSTOMS CHARGES OR BROKERAGE FEES, WHICH MAY BE INCURRED IN PROVIDING WARRANTY SERVICE INVOLVING INTERNATIONAL SHIPMENT. ANY SUCH CHARGES, IF ADVANCED BY HILTON AUDIO PRODUCTS, WILL BE INVOICED TO THE OWNER OF THE EQUIPMENT.

## TOP DECK

### TONE ARM

THE PICKUP CARTRIDGE IS LOCATED SO THAT THE NEEDLE IS EASY TO SEE, WHEN PLACING IT ON THE RECORD. THE CARTRIDGE IS OF THE FLIPOVER TYPE, ONE SIDE FOR 78 RPM RECORDS AND THE OTHER FOR 45 AND 33 RPM RECORDS. IT IS A SLIP-IN CERAMIC CARTRIDGE WITH 1-MIL AND 3-MIL SAPPHIRE NEEDLES, ASTATIC NO. 89-T. TO REMOVE THE CARTRIDGE FOR INSPECTION OR REPLACEMENT, GRASP IT AT THE SIDES AND SLIP IT OUT OF THE FLIPOVER BRACKET. THE CARTRIDGE IS KEYED, SO THAT IT CANNOT BE INSTALLED UPSIDE DOWN.

THE COUNTERWEIGHT IS SET SO THAT THE TRACKING PRESSURE OF THE STYLUS IS CONSIDERABLY HEAVIER THAN THAT OF A HOME HI-FI TURNTABLE, TO INSURE AGAINST NEEDLE SKIPPING WHEN WORKING ON TEMPORARY STAGES OR RICKETY TABLES. TO DECREASE THIS TRACKING PRESSURE WILL INCREASE THE RISK OF NEEDLE SKIPPING, WITHOUT APPRECIABLY LENGTHENING THE LIFE OF EITHER NEEDLE OR RECORDS.

FOR 45 OR 33 RPM RECORDS, USE THE LP SETTING ON THE TONE ARM HEAD; FOR 78 RPM RECORDS FLIP THE HANDLE DOWN AND TO THE RIGHT. TO PLAY 12" RECORDS, SLIDE THE TONE ARM CLIP ALL THE WAY TO THE RIGHT, TO CLEAR THE RECORD. BE SURE TO SLIDE IT BACK ALL THE WAY TO THE LEFT BEFORE CLOSING THE AMPLIFIER LID. DURING A DANCE, THE FOAM NEEDLE REST MAY BE USED; IT WILL HELP CLEAN DUST OFF THE NEEDLE. FOR CARRYING, THE TONE ARM MUST BE LOCKED IN ITS CLIP.

### TURNTABLE AND DRIVE MECHANISM

THE FOAM PAD ON THE PLATTER IS SLIGHTLY LESS THAN THE DIAMETER OF A 7" RECORD, SO THAT RECORDS ARE EASY TO REMOVE. THE PLATTER RESTS ON A 3/16" BALL BEARING WHICH IS SECURED IN THE BOTTOM OF THE SHAFT WELL, AND SPINS ALMOST FREE OF FRICTION.

THE MOTOR IS A HYSTERESIS-SYNCHRONOUS GEARMOTOR. IT IS UNAFFECTED BY VOLTAGE FLUCTUATIONS AND WILL HOLD SPEED AT A VERY LOW VOLTAGE. THE MOTOR DRIVES THE PLATTER DIRECTLY, WITH A DRIVE WHEEL WHICH HAS A SOFT RUBBER RIM, AND SPEED CHANGE IS ACCOMPLISHED BY MOVING THE ENTIRE MOTOR ASSEMBLY TOWARD OR AWAY FROM THE CENTER OF THE PLATTER. SPEED IS INFINITELY VARIABLE FROM 30 TO 85 RPM. WHEN THE SPEED CONTROL KNOB IS IN THE OFF POSITION, THE DRIVE WHEEL IS DISENGAGED FROM THE UNDERSIDE OF THE PLATTER, AND THE MOTOR IS SHUT OFF. THIS KNOB SHOULD BE PLACED IN THE OFF POSITION FOR CARRYING, OR WHEN THE SYSTEM IS BEING USED WITHOUT THE TURNTABLE, FOR VOICE ONLY OR FOR TAPE PLAYBACK.

### STROBE

A NEON-LIGHTED STROBE IS PROVIDED; THE INNER ROW OF DOTS INDICATES 78 RPM, THE CENTER ROW 45 RPM, AND THE OUTER ROW 33 RPM. THE BULB IS A NEON, NO. NE 51H OR B2A. IT HAS A BAYONET BASE; TO REMOVE FOR INSPECTION OR REPLACEMENT, PUSH IN ON THE BULB, TURN IT TO THE LEFT (COUNTERCLOCKWISE) AND IT WILL POP OUT.

### POWER SWITCH

THE ON-OFF SWITCH IS LOCATED AT THE LEFT REAR OF THE TOP DECK. IT SHOULD ALWAYS BE OFF WHILE THE SYSTEM IS BEING HOOKED UP OR DISCONNECTED.

## REAR PANEL

BEFORE PLUGGING IN, MAKE SURE THAT THE POWER SOURCE IS 110-120 VOLTS AC. THE POWER CORD OF THE MICRO-75A IS DETACHABLE, AND AN ADAPTER IS FURNISHED FOR USE WHERE WALL SOCKETS ARE NOT OF THE 3-HOLE GROUND-ED TYPE. WHERE THE HOUSE RECEPTACLES ARE OF THE GROUND-ED TYPE, THIS ADAPTER SHOULD NOT BE USED.

### CIRCUIT BREAKER

PROTECTS THE AMPLIFIER FROM BEING DAMAGED BY A SURGE IN THE SUPPLY VOLTAGE, OR BY A SHORT CIRCUIT IN THE SYSTEM. IF THE BREAKER SHOULD TRIP, WAIT A MOMENT AND PRESS THE RESET BUTTON. NORMAL OPERATION SHOULD BE RESTORED. IF THE BREAKER AGAIN TRIPS ALMOST IMMEDIATELY, SHUT OFF THE AMPLIFIER AND DO NOT ATTEMPT TO USE IT UNTIL THE CAUSE OF THE PROBLEM HAS BEEN DETERMINED.

### SPEAKER OUTPUT SOCKET

THE SPEAKER SOCKET IS A CINCH-JONES S-302-AB, COMPATIBLE WITH THE PLUGS ON MANY TYPES OF SPEAKERS. OPTIMUM IMPEDANCE LOAD IS 8 TO 16 OHMS. DO NOT CONNECT ANY COMBINATION OF SPEAKERS WHICH PRODUCES A NET IMPEDANCE LOAD OF LESS THAN 4 OHMS. A SERIES Y CONNECTOR IS FURNISHED WITH THE MICRO-75A FOR USE IN CONNECTING TWO OR MORE SPEAKERS TO THE UNIT. SEE THE SECTION TITLED SPEAKER HOOKUP FOR DETAILED INSTRUCTIONS FOR HOOKUP OF MULTIPLE SPEAKERS. WITH PROPER HOOKUP, THE MICRO-75A WILL DRIVE AS MANY AS FOUR HILTON FOLDED HORN SPEAKERS, AND COVER MORE THAN 50 SQUARES.

### MONITOR JACKS

THE JACK MARKED ALL MAY BE CONNECTED TO AN EXTERNAL MONITOR AMP-LIFIER SO THAT THE CALLER CAN MONITOR THE COMPLETE PROGRAM, AT THE SAME VOICE-MUSIC BALANCE AS THAT WHICH IS GOING TO THE FLOOR.

THE JACK MARKED MUSIC MAY BE CONNECTED TO AN EXTERNAL MONITOR AMP-LIFIER TO PLAY BACK MUSIC ONLY FOR THE CALLER. THIS SAME JACK IS ALSO USED TO PLAY BACK A TAPE RECORDED PROGRAM THROUGH THE MICRO-75A. SEE THE SECTION TITLED PLAYING BACK A TAPE.

### TAPE RECORD JACK

THIS IS ALSO A DUAL-PURPOSE JACK. IT MAY BE USED TO MAKE A TAPE RE-CORDING OF THE FULL PROGRAM, VOICE AND MUSIC. SEE THE SECTION TITLED MAKING TAPE RECORDINGS. IT IS ALSO USED TO CONNECT THE MICRO-75A TO A SLAVE AMPLIFIER. SEE THE SECTION TITLED CORRECT HOOKUP FOR A SLAVE AMPLIFIER.

## FRONT PANEL

### PHONOGRAPH SECTION

THE VOLUME CONTROL KNOB ADJUSTS THE LOUDNESS OF THE MUSIC PROGRAM, WHILE PLAYING A RECORD OR PLAYING BACK A TAPE. EXTREMELY FINE AD-JUSTMENT OF PHONO VOLUME CAN BE DONE BY USING THE HILTON REMOTE VOLUME CONTROL ASSEMBLY IN CONJUNCTION WITH THE PHONO VOLUME CONTROL.

REMOTE CONTROL JACK: BY PLUGGING IN THE HILTON REMOTE VOLUME CONTROL ASSEMBLY, THE MUSIC VOLUME CAN BE ADJUSTED WITH THE KNOB ON THE MIC-ROPHONE, WITHOUT TOUCHING THE KNOB ON THE FRONT PANEL. RECOMMENDED OPERATION: PLUG IN THE REMOTE CONTROL AND TURN ITS VOLUME FULL ON. SET THE PHONO VOLUME CONTROL AT A LEVEL SLIGHTLY HIGHER THAN YOU

DESIRE FOR BEST VOICE-MUSIC BALANCE. WITH THE REMOTE CONTROL, DECREASE THE MUSIC VOLUME TO THE PROPER LEVEL SO THAT YOUR VOICE COMES OUT CLEARLY OVER THE MUSIC. WITHOUT TOUCHING THE AMPLIFIER KNOB, YOU CAN NOW EITHER DROP THE MUSIC VOLUME TO 25% OF ITS PRESET LEVEL FOR TALK-THRU SPOTS OR INCREASE IT FOR ADDED EXCITEMENT AND LIFT FOR SING-ALONG CHORUSES.

**BASS AND TREBLE CONTROLS:** ADJUST THE BASS AND TREBLE COMPENSATION FOR THE MUSIC PROGRAM ONLY; THEY HAVE NO EFFECT ON THE VOICE PROGRAM. VERY WIDE LATITUDE IS PROVIDED, AND WE RECOMMEND USING ONLY THE MINIMUM ADJUSTMENT FROM NORMAL WHICH WILL GIVE YOU THE MUSIC SOUND THAT YOU DESIRE. FOR VERY WORN, SCRATCHY RECORDS, TURNING THE TREBLE CONTROL ABOUT 45 DEGREES TO THE LEFT WILL FILTER OUT A LARGE PORTION OF THE SURFACE NOISE. SEE ALSO THE SECTION TITLED GETTING THE MOST OUT OF YOUR HILTON.

**TAPE MUSIC JACK:** THIS JACK MAY BE USED TO RECORD THE MUSIC PROGRAM ONLY, ON ONE TRACK OF A STEREO TAPE. IT MAY ALSO BE USED TO PLAY BACK ONE TRACK OF A STEREO TAPE. SEE THE SECTIONS TITLED MAKING A TAPE AND PLAYING BACK A TAPE.

### MICROPHONE SECTION

**MICROPHONE INPUTS AND VOLUME CONTROL:** TWO HIGH IMPEDANCE MICROPHONE INPUTS ARE PROVIDED AND BOTH ARE CONTROLLED BY THE SAME VOLUME AND TONE CONTROL. FOR A HAND HELD MIKE, USE EITHER INPUT. THE SECOND INPUT IS PROVIDED SO THAT A WIRELESS MICROPHONE MAY BE USED WITHOUT UNPLUGGING THE HAND HELD MIKE. THE RECEIVER OF THE WIRELESS MIKE WILL HAVE ITS OWN VOLUME CONTROL, SO THAT YOU CAN VARY ITS VOLUME WITHOUT DISTURBING THAT OF THE HAND HELD MICROPHONE.

**MICROPHONE TONE CONTROL:** ONE OF THE FEATURES WHICH MAKE THE HILTON SOUND SYSTEM OUTSTANDING IS THE ABILITY OF ITS MICROPHONE CIRCUITS TO REPRODUCE CLEANLY THE HIGH FREQUENCIES WHICH ARE ABSOLUTELY ESSENTIAL FOR CLARITY AND UNDERSTANDABILITY OF COMMANDS. IF YOU HAVE A RATHER DEEP BASS VOICE, TURN THE KNOB FAR ENOUGH TO THE RIGHT TO MAKE SURE THAT THERE IS NO BOOMINESS IN THE VOICE; IF YOU ARE A BARITONE LEAVE IT AT OR NEAR THE NORMAL SETTING. EVEN IF YOUR VOICE IS HIGH IN PITCH, DO NOT TURN THE CONTROL MORE THAN 30 OR 40 DEGREES TO THE LEFT OF NORMAL. THE EXTREME BASS SETTING ON THIS TONE CONTROL IS NOT DESIGNED FOR VOICE REPRODUCTION, BUT FOR CONNECTING THE MICRO-75A FOR USE AS A SLAVE AMPLIFIER. IF YOU HAVE NOT WORKED WITH HILTON EQUIPMENT BEFORE, DO NOT MAKE THE MISTAKE OF TUNING THE HIGHS OUT OF YOUR VOICE PROGRAM. TO DO SO WOULD BE SIMILAR TO BUYING A NEW COLOR TV SET, AND TUNING IT SO THAT THE PICTURE IS BLACK AND WHITE!

**TAPE VOICE JACK:** MAY BE USED TO RECORD THE VOICE PROGRAM ONLY, ON ONE TRACK OF A STEREO TAPE. IT MAY ALSO BE USED TO PLAY BACK ONE TRACK OF A STEREO TAPE. SEE THE SECTIONS TITLED MAKING A TAPE AND PLAYING BACK A TAPE.

## SETUP AND OPERATION

TURN ALL VOLUME CONTROLS OFF, POWER SWITCH OFF, SET TONE CONTROLS AT NORMAL. SET UP SPEAKER OR SPEAKERS, LOCATING THEM ABOVE THE HEADS OF THE DANCERS, AND POSITIONED SO THAT THEIR CONE OF SOUND COVERS ALL AREAS OF THE FLOOR. CONNECT THEM TO AMPLIFIER, FOLLOWING THE INSTRUCTIONS GIVEN IN THE SECTION TITLED SPEAKER HOOKUP. PLUG IN YOUR MICROPHONE.

CHECK TO BE SURE THAT THE POWER SOURCE IS 110-120 VOLTS. 220 VOLTS WOULD SERIOUSLY DAMAGE YOUR AMPLIFIER. PLUG IN THE POWER CORD, AND TURN THE SYSTEM ON. START THE TURNTABLE AND SEE THAT IT STROBES CORRECTLY. TURN ON THE MICROPHONE AND TEST BY SPEAKING INTO IT-- NOT BY BLOWING INTO IT. PUT ON A RECORD AND CHECK MUSIC VOLUME AND TONE CONTROLS. IN A STRANGE HALL, PUT ON A CALLED RECORD AND WALK THE FLOOR TO MAKE SURE THAT SPEAKER(S) ARE PROPERLY LOCATED TO COVER THE ENTIRE FLOOR WITH A COMFORTABLE LEVEL OF SOUND.

IF YOU USE AN EXTERNAL MONITOR AMPLIFIER, ALWAYS START EACH RECORD WITH MONITOR VOLUME SHUT OFF, UNTIL YOU HAVE MADE SURE THAT TOTAL VOLUME AND VOICE-MUSIC BALANCE ARE PROPERLY SET FOR THE COMFORT OF THE DANCERS; THEN TURN UP AS MUCH MONITOR VOLUME AS YOU WANT. FOR MORE INFORMATION ABOUT OPERATION, SEE THE SECTION TITLED GETTING THE MOST OUT OF YOUR HILTON.

### SPEAKER HOOKUP

DEPENDING UPON THE SIZE, SHAPE, AND ACOUSTIC CHARACTERISTICS OF A HALL, GETTING COMFORTABLE SOUND COVERAGE MAY REQUIRE ONE, TWO, OR MORE SPEAKERS. IT IS IMPORTANT TO LOCATE THEM PROPERLY, FOR BEST COVERAGE OF ALL AREAS OF THE FLOOR. FOR INFORMATION ON LOCATING SPEAKERS IN A HALL, SEE THE HEADING SPEAKER LOCATION IN THE SECTION TITLED GETTING THE MOST OUT OF YOUR HILTON.

IT IS ALSO VERY IMPORTANT TO CONNECT THEM PROPERLY, TO THE AMPLIFIER AND TO EACH OTHER, TO GET THE BEST PERFORMANCE FROM THE AMPLIFIER AND FROM THE SPEAKERS.

IN MULTIPLE SPEAKER HOOKUP, IT IS NECESSARY TO CONSIDER IMPEDANCE. THIS IS THE ELECTRICAL RESISTANCE OF THE VOICE COILS OF THE SPEAKERS. THE LOWER THE IMPEDANCE, THE MORE ELECTRICAL ENERGY IS APPLIED TO THE SPEAKERS. THIS IS WHY SPECIFICATIONS ON POWER AMPLIFIERS WILL SHOW A GIVEN POWER RATING INTO AN 8-OHM LOAD, AND A CONSIDERABLY HIGHER POWER OUTPUT INTO A 4-OHM LOAD.

IF A LOUDSPEAKER WERE 100% EFFICIENT, ALL OF THE ELECTRICAL ENERGY DELIVERED TO IT BY THE AMPLIFIER WOULD BE CONVERTED INTO SOUND ENERGY. UNFORTUNATELY, SPEAKERS ARE NOT 100% EFFICIENT; IN FACT EVEN THE HIGHEST QUALITY SPEAKERS IN THE BEST DESIGNED ENCLOSURES ARE ONLY 20-25% EFFICIENT. THE ELECTRICAL ENERGY WHICH IS NOT CONVERTED INTO SOUND BY A SPEAKER IS CONVERTED INTO ANOTHER FORM OF ENERGY-- HEAT. THIS HEAT MUST BE DISSIPATED AT TWO POINTS: THE VOICE COIL OF THE SPEAKER, AND AT THE AMPLIFIER. EXCESSIVE HEAT AT EITHER POINT CAN CAUSE DAMAGE TO THE SOUND SYSTEM.

THE HILTON K-110 AND K-120 SPEAKERS ARE THE MOST EFFICIENT SPEAKERS-- MOST SOUND PER AMPLIFIER WATT--IN THE SQUARE DANCE FIELD. EVEN SO, IMPROPER HOOKUP CAN CAUSE EXCESSIVE HEAT DISSIPATION, AND THIS PROBLEM IS COMPOUNDED WHEN LESS EFFICIENT SPEAKERS ARE USED.

IF YOU DRIVE AT HIGH SOUND LEVEL INTO A LOW IMPEDANCE LOAD, EXCESSIVE HEAT MAY BE GENERATED. YOUR MICRO-75A HAS A BUILT-IN PROTECTIVE DEVICE WHICH WILL SHUT THE AMPLIFIER OFF IF THIS HAPPENS, BEFORE IT REACHES A TEMPERATURE WHICH WOULD CAUSE DAMAGE TO THE AMPLIFIER. IF THIS DEVICE OPERATES, THE AMPLIFIER CAN NOT BE RESTARTED UNTIL IT COOLS TO A SAFE OPERATING TEMPERATURE.

THE OPTIMUM NET IMPEDANCE LOAD FOR THE MICRO-75A IS 8 TO 16 OHMS. BY CAREFULLY FOLLOWING THE INSTRUCTIONS IN THIS MANUAL FOR SPEAKER HOOKUP, YOU WILL MAINTAIN THE BEST NET IMPEDANCE LOAD FOR VARIOUS SPEAKER COMBINATIONS.

IMPROPER HOOKUP OF SPEAKERS CAN CAUSE EMBARRASSING INTERRUPTIONS OF YOUR PROGRAM, EVEN IF USING HILTON SPEAKERS. IF USING SPEAKERS NOT OF OUR MANUFACTURE, OVERDRIVING SUCH SPEAKERS OR CONNECTING THEM IMPROPERLY CAN CAUSE DAMAGE TO THE SPEAKERS, AND IN EVENT OF A SHORTED VOICE COIL, CAN CAUSE DAMAGE TO YOUR AMPLIFIER.

#### ONE HILTON FOLDED HORN SPEAKER:

PLUG DIRECTLY INTO THE SOCKET ON THE REAR PANEL. IMPEDANCE LOAD WILL BE 8 OHMS.

#### TWO HILTON FOLDED HORN SPEAKERS:

IF SETTING UP WITH ONE SPEAKER ON YOUR RIGHT AND ONE ON YOUR LEFT: PLUG THE SERIES Y CONNECTOR FURNISHED WITH THE UNIT INTO THE SOCKET ON THE REAR PANEL. PLUG ONE SPEAKER INTO EACH OF THE SOCKETS ON THE Y CONNECTOR. IMPEDANCE WILL BE 16 OHMS.

IF YOU MUST SET UP WITH BOTH SPEAKERS TO YOUR RIGHT OR TO YOUR LEFT: PLUG ONE OF YOUR SPEAKER CORDS INTO THE SOCKET ON THE REAR PANEL. PLUG YOUR SERIES Y CONNECTOR INTO THE SOCKET ON THE OTHER END OF THIS CORD. PLUG ONE SOCKET OF THE Y CONNECTOR TO THE PLUG ON THE TOP OF THE FIRST SPEAKER. PLUG YOUR OTHER SPEAKER CORD INTO THE OTHER SOCKET ON THE Y CONNECTOR, AND CONNECT THIS CORD TO THE SECOND SPEAKER. IMPEDANCE WILL BE 16 OHMS.

NOT RECOMMENDED: IF YOU CONNECT ONE SPEAKER TO THE AMPLIFIER AND THE SECOND SPEAKER TO THE FIRST SPEAKER WITHOUT USING THE SERIES Y CONNECTOR, THE NET IMPEDANCE LOAD WILL BE ONLY 4 OHMS. YOU CAN GET AWAY WITH THIS HOOKUP IF YOU ARE OPERATING AT LOW VOLUME, BUT AT HIGH DRIVE LEVELS, THIS HOOKUP MAY GENERATE EXCESSIVE HEAT. EITHER OF THE HOOKUPS DESCRIBED ABOVE WHICH USE THE Y CONNECTOR ARE PREFERRED TO THE PARALLEL HOOKUP WITHOUT THE Y CONNECTOR.

#### THREE HILTON FOLDED HORN SPEAKERS:

THE ONLY WAY THAT YOU CAN CONNECT THREE SPEAKERS TO YOUR AMPLIFIER AND GET THEM TO PRODUCE EQUAL SOUND VOLUME WHILE MAINTAINING AN IMPEDANCE LOAD OF MORE THAN 4 OHMS IS TO CONNECT ALL THREE SPEAKERS IN SERIES, BY USING TWO Y CONNECTORS. PLUG ONE Y CONNECTOR INTO THE AMPLIFIER, AND THE SECOND Y CONNECTOR INTO ONE OF ITS SOCKETS. THIS WILL LEAVE YOU THREE SOCKETS; PLUG ONE SPEAKER INTO EACH OF THE THREE SOCKETS. THIS WILL GIVE AN IMPEDANCE LOAD OF 24 OHMS; THE HOOKUP WILL OPERATE SATISFACTORILY, AND THE SOUND LEVEL WILL BE THE SAME FROM ALL THREE SPEAKERS.

IF YOU USE ONE SERIES Y CONNECTOR AND HOOK ONE SPEAKER TO ONE OF ITS SOCKETS AND THE OTHER TWO SPEAKERS IN PARALLEL TO THE OTHER SOCKET, THE IMPEDANCE LOAD WILL BE OK, BUT THE TWO SPEAKERS IN PARALLEL WILL PRODUCE A DIFFERENT SOUND LEVEL FROM THAT OF THE SINGLE

SPEAKER ON THE OTHER SOCKET OF THE Y CONNECTOR. THIS CAN PRODUCE A SOUND PROBLEM OUT ON THE FLOOR.

IF YOU CONNECT THREE SPEAKERS IN PARALLEL, THE IMPEDANCE LOAD WILL BE LOW, AND EXCESSIVE HEAT MAY WELL BE PRODUCED.

### SPEAKERS OTHER THAN HILTON SPEAKERS

IF IMPEDANCE IS KNOWN, CONNECT IF POSSIBLE TO PRODUCE A NET IMPEDANCE LOAD OF FROM 8 TO 16 OHMS. IF IMPEDANCE IS UNKNOWN, FOLLOW THE INSTRUCTIONS ON THE PRECEDING PAGE FOR HOOKUP OF ONE, TWO, THREE, OR FOUR SPEAKERS. SOME MANUFACTURERS PROVIDE INSTRUCTIONS FOR HOOKUP OF THEIR SPEAKERS TO HILTON AMPLIFIERS.

THERE IS ON THE MARKET A COLUMN WHICH IS BUILT IN TWO SECTIONS, WHICH CAN BE DIVIDED TO USE ONE HALF ONLY, THE TWO HALVES SPREAD APART, OR THE TWO HALVES STACKED AS A SINGLE COLUMN. TO USE ONE HALF OF THIS COLUMN, PLUG IT DIRECTLY INTO THE AMPLIFIER. TO USE THE TWO HALVES SPREAD APART PLUG THE SERIES Y INTO THE AMPLIFIER AND CONNECT ONE HALF TO EACH SOCKET ON THE Y CONNECTOR. TO USE THE TWO HALVES STACKED AS A SINGLE COLUMN: DO NOT USE THE PARALLEL Y CONNECTOR PROVIDED WITH THE COLUMN. CONNECT THE TWO HALVES IN SERIES WITH EACH OTHER. IF YOU OWN A COLUMN OF THIS TYPE, YOU CAN EITHER PURCHASE A SERIES Y CONNECTOR FROM US, OR MAKE ONE UP YOURSELF.

IF YOU HAVE QUESTIONS ABOUT SPEAKER HOOKUP FOR CERTAIN HALLS OR FOR CERTAIN TYPES OF SPEAKERS, PLEASE WRITE OR PHONE US. OUR STAFF WILL BE GLAD TO HELP YOU AS MUCH AS WE CAN, TO GET THE BEST PERFORMANCE FROM YOUR HILTON SOUND SYSTEM.

## MAKING TAPE RECORDINGS

### MAKING CASSETTE RECORDINGS

THERE ARE MANY TYPES AND BRANDS OF CASSETTE RECORDERS ON THE MARKET, RANGING FROM THE VERY COMPACT AND INEXPENSIVE, UP TO PREMIUM QUALITY MODELS WITH QUITE SOPHISTICATED FEATURES. EVEN WITHIN THE SAME PRICE RANGE, ONE MODEL MAY HAVE DIFFERENT CHARACTERISTICS FROM ANOTHER, AND THE SAME HOOKUP WHICH PRODUCES GOOD RESULTS WITH ONE RECORDER MAY NOT DO SO WITH ANOTHER. THEREFORE, IT MAY REQUIRE A BIT OF EXPERIMENTING TO ARRIVE AT THE HOOKUP WHICH GIVES THE BEST RESULTS WITH A GIVEN CASSETTE RECORDER.

TO MAKE A CASSETTE RECORDING, CONNECT A SHIELDED CORD TO THE TAPE RECORD JACK ON THE REAR PANEL OF THE MICRO-75A. CONNECT THIS CORD TO THE MICROPHONE INPUT ON THE RECORDER. PUT ON A RECORD AND MAKE A TEST TAPE. IF YOU HAVE ONE OF THE VERY INEXPENSIVE CASSETTE MODELS, THE SIGNAL FROM THE TAPE RECORD JACK MAY BE STRONG ENOUGH TO OVERLOAD THE MIC INPUT, AND THE PLAYBACK WILL BE DISTORTED. IF SO, SWITCH FROM THE MIC INPUT TO THE AUXILIARY INPUT ON THE RECORDER, AND MAKE ANOTHER TEST TAPE. THE AUXILIARY INPUT IS DESIGNED FOR A STRONGER SIGNAL THAN THAT OF THE MICROPHONE INPUT. ONE OR THE OTHER OF THESE HOOKUPS SHOULD PRODUCE GOOD RESULTS. SINCE IT IS IMPOSSIBLE WITH A SINGLE OUTPUT JACK TO PRODUCE A SIGNAL WHICH IS COMPATIBLE WITH THE INPUTS ON EVERY ONE OF THE MULTITUDE OF MAKES AND MODELS OF CASSETTE RECORDERS, WE OBVIOUSLY CAN NOT GUARANTEE THAT ANY DIRECT HOOKUP WILL PRODUCE TAPES OF PROFESSIONAL QUALITY IN EVERY INSTANCE.



ANOTHER WAY TO MAKE CASSETTE RECORDINGS IS BY THE USE OF A TELEPHONE PICKUP. THESE ARE AVAILABLE AT MANY OUTLETS--RADIO SHACK, FOR INSTANCE, AT A COST OF ABOUT \$2.00. TO USE ONE OF THESE PICKUPS, LOOP YOUR SPEAKER CORD AROUND IT, AND SECURE IT SNUGLY WITH A RUBBER BAND. PLUG THE OTHER END OF THE CORD INTO THE MICROPHONE INPUT ON THE RECORDER. WITH SOME CASSETTE RECORDERS, THIS PRODUCES BETTER RESULTS THAN A DIRECT HOOKUP. NO MATTER WHAT RECORDER IS USED, NO DAMAGE CAN BE CAUSED, BECAUSE THERE IS NO DIRECT CONTACT WITH YOUR SOUND SYSTEM; THE PICKUP IS MADE THROUGH THE INSULATION ON THE SPEAKER CORD. (THE CORD MUST BE CONNECTED TO A SPEAKER, OR NO SIGNAL WILL BE PRODUCED.)

THE BETTER THE QUALITY OF YOUR CASSETTE RECORDER, THE BETTER THE QUALITY OF YOUR RECORDINGS WILL BE. IF YOU HAVE ONE OF THE BETTER UNITS, IN THE MEDIUM OR HIGHER PRICE RANGE, ITS AUTOMATIC RECORDING LEVEL CONTROL WILL PRODUCE GOOD RECORDINGS WITH A WIDE RANGE OF INPUT SIGNAL STRENGTH, AND SOME OF THESE UNITS ALSO HAVE A MANUAL ADJUSTMENT FOR RECORDING LEVEL.

### REEL TO REEL RECORDINGS

MOST REEL TO REEL RECORDERS HAVE ADJUSTABLE RECORDING LEVEL CONTROLS, AND A BIT OF EXPERIMENTING SHOULD ENABLE YOU TO MAKE RECORDINGS OF EXCELLENT QUALITY FROM THE MICRO-75A. IF THE RECORDER HAS A LEVEL METER OR DISTORTION LIGHT, USE IT TO PREVENT OVER-RECORDING.

### CAUTION:

DO NOT ALLOW ANYONE TO CONNECT A TAPE RECORDER DIRECTLY TO THE SPEAKER SOCKET, TO THE SERIES Y CONNECTOR, OR TO ANY SOCKET ON A SPEAKER. SOME RECORDERS HAVE A SHORTING SWITCH ACROSS THEIR INPUT; IF THIS SWITCH IS CLOSED, IT WILL CAUSE YOUR AMPLIFIER TO WORK INTO A SHORT CIRCUIT. SOME RECORDERS HAVE INPUTS OF SUCH LOW IMPEDANCE THAT IF THEY ARE CONNECTED IN A SPEAKER CIRCUIT THEY PRODUCE THE SAME EFFECT AS IMPROPER SPEAKER HOOKUP. IN EITHER CASE, YOUR AMPLIFIER WILL OVER-HEAT AND SHUT ITSELF OFF.

### MAKING STEREO RECORDINGS

ON THE FRONT PANEL ARE TWO JACKS, MARKED TAPE MUSIC AND TAPE VOICE. THESE JACKS MAY BE CONNECTED TO A STEREO DECK TO MAKE RECORDINGS WITH VOICE ON ONE TRACK AND MUSIC ON THE OTHER. AGAIN, THE QUALITY OF THE RECORDINGS WILL DEPEND UPON THE QUALITY OF THE RECORDING EQUIPMENT; BUT WITH A GOOD STEREO DECK YOU CAN MAKE RECORDINGS OF EXCELLENT QUALITY.

THE OUTPUT FROM THESE JACKS IS COMPATIBLE WITH THE LINE OR AUXILIARY INPUTS OF A STEREO DECK, AND WOULD PROBABLY OVERLOAD THE MICROPHONE INPUTS. THE OUTPUT SIGNAL IS NOT COMPENSATED, AND IS NOT AFFECTED BY THE VOLUME OR TONE CONTROLS ON THE MICRO-75A.

CONNECT A SHIELDED CORD FROM THE TAPE MUSIC JACK TO THE LEFT LINE OR AUXILIARY INPUT ON THE STEREO DECK, AND ANOTHER CORD FROM THE TAPE VOICE JACK TO THE RIGHT LINE OR AUXILIARY INPUT. PUT ON A RECORD, AND ADJUST THE CONTROL FOR THE LEFT CHANNEL TO PROPER RECORDING LEVEL. CALL INTO THE MICROPHONE AND ADJUST THE RIGHT CHANNEL TO PROPER RECORDING LEVEL. ALL ADJUSTMENTS OF RECORDING LEVEL MUST BE DONE ON THE RECORDER, SINCE THE AMPLIFIER VOLUME CONTROLS HAVE NO EFFECT ON THE OUTPUT LEVEL TO THE RECORDER.

NOW SET THE VOLUME AND TONE CONTROLS ON THE MICRO-75A TO THE VOICE-MUSIC BALANCE, VOLUME, AND TONE QUALITY THAT YOU DESIRE, AND AS YOU CALL YOU CAN TAPE THE MUSIC PROGRAM ON THE LEFT CHANNEL AND THE VOICE PROGRAM ON THE RIGHT CHANNEL.

### PLAYING BACK TAPE RECORDINGS

#### MONAURAL TAPES, CASSETTE OR REEL TO REEL

CONNECT A SHIELDED CORD FROM THE OUTPUT OF THE TAPE RECORDER TO THE JACK ON THE REAR PANEL MARKED MONITOR MUSIC. SET THE PHONO TREBLE AND BASS CONTROLS AT NORMAL AND THE PHONO VOLUME AT OR BELOW NINE O'CLOCK. TURN UP ONLY ENOUGH VOLUME ON THE TAPE RECORDER TO GET A SOFT LISTENING LEVEL, THEN ADJUST THE PHONO VOLUME CONTROL TO THE VOLUME THAT YOU DESIRE AND THE TONE CONTROL FOR THE SOUND QUALITY THAT YOU WANT, JUST AS IF YOU WERE PLAYING A PHONOGRAPH RECORD.

#### PLAYING BACK A STEREO TAPE

SINCE THE MICRO-75A IS A SINGLE-CHANNEL AMPLIFIER, ANY STEREO TAPE PLAYED BACK THROUGH IT WILL PRODUCE A MONAURAL PROGRAM. HOWEVER, A STEREO TAPE MAY BE PLAYED BACK THROUGH THE MICRO-75A, AND YOU CAN CONTROL THE LEFT/RIGHT BALANCE AS YOU WISH, AND ALSO CONTROL THE TONE COMPENSATION OF EITHER CHANNEL INDEPENDENTLY OF THE OTHER.

TO PLAY BACK A TAPE WHICH WAS MADE FROM THE MICRO-75A ACCORDING TO THE INSTRUCTIONS GIVEN ABOVE:

CONNECT A SHIELDED CORD FROM THE LEFT CHANNEL OUTPUT JACK ON THE TAPE RECORDER TO THE TAPE MUSIC JACK ON THE FRONT PANEL. CONNECT FROM THE RIGHT CHANNEL OUTPUT TO THE TAPE VOICE JACK. SET THE OUTPUT CONTROLS ON THE TAPE RECORDER TO APPROXIMATELY EQUAL BALANCE.

YOU CAN NOW PLAY BACK YOUR TAPE RECORDING, AND BY USING THE PHONO AND MICROPHONE VOLUME CONTROLS, SET ANY VOICE-MUSIC BALANCE THAT YOU CHOOSE; YOU CAN ADJUST THE BASS AND TREBLE COMPENSATION FOR THE MUSIC WITHOUT CHANGING THE TONE OF THE VOICE PROGRAM; YOU CAN ADJUST THE VOICE TO BE AS CRISP OR AS MELLOW AS YOU WISH WITHOUT AFFECTING THE MUSIC PROGRAM.

#### CAUTION:

DO NOT USE MICROPHONE INPUTS FOR TAPE PLAYBACK. WHILE IT IS POSSIBLE TO PLAY BACK A TAPE BY PLUGGING INTO A MICROPHONE INPUT, IT IS NOT RECOMMENDED, FOR TWO REASONS: FIRST, SOME TAPE RECORDERS WITH BUILT-IN AMPLIFIERS HAVE THE CAPACITY, IF THEIR OUTPUT 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 SINGLE TONE CONTROL ON THE MICROPHONE INPUT WILL NOT GIVE YOU NEARLY AS MUCH LATITUDE IN ADJUSTING THE BASS AND TREBLE AS THE DUAL CONTROLS ON THE PHONO CHANNEL.

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

### MICROPHONE TECHNIQUE

ALWAYS WORK CLOSE TO YOUR MIKE--NEVER LET IT GET MORE THAN 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 WHICH IS BUILT INTO YOUR HILTON. THE SAME RULE APPLIES TO THE USE OF A WIRELESS MIKE: THE CLOSER IT IS TO YOUR LIPS THE BETTER THE VOICE REPRODUCTION WILL BE, AND THE LESS THE RISK OF FEEDBACK.

### VOICE-MUSIC BALANCE

FOR THE DANCERS TO HEAR AND UNDERSTAND YOUR COMMANDS, YOUR VOICE MUST COME OUT CLEARLY OVER THE MUSIC. NEVER TURN UP SO MUCH MUSIC THAT YOUR COMMANDS CANNOT BE HEARD CLEARLY. OFTEN, WHEN A CALLER'S VOICE IS BURIED IN THE MUSIC, DANCERS MAY ASK FOR MORE VOICE. IF THE VOICE PROGRAM IS LOUD ENOUGH TO BE HEARD ALL OVER THE HALL, WHAT IS REALLY REQUIRED IS NOT MORE VOICE, BUT LESS MUSIC. AS A GENERAL RULE, THE LARGER THE HALL, OR THE MORE REVERBERANT, THE MORE THE VOICE MUST STAND OUT OVER THE MUSIC, IN ORDER FOR THE DANCERS TO HEAR. IF YOU CAN'T JUDGE THE PROPER BALANCE YOURSELF, GET SOMEONE YOU CAN TRUST, OUT ON THE FLOOR, TO HELP YOU GET THE PROPER VOLUME AND VOICE-MUSIC BALANCE FOR THAT PARTICULAR HALL.

### 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 AT THE FRONT. SPEAKERS SHOULD BE ELEVATED AND AIMED AT THE DANCERS AT THE REAR OF THE HALL, SO THAT THE MOST INTENSE PART OF THE BEAM OF SOUND PASSES OVER THE HEADS OF THE DANCERS AT THE FRONT. YOU SHOULD SET UP SO THAT YOU CAN GET CLOSE ENOUGH TO A SPEAKER TO BE ABLE TO HEAR THE VOICE-MUSIC BALANCE, BUT NOT SO CLOSE THAT YOU ARE CONTINUALLY FIGHTING FEEDBACK. TRY NEVER TO AIM A SPEAKER DIRECTLY AT A HARD, FLAT, PAINTED OR PANELLED WALL, WHICH WILL CAUSE ECHO AND BOUNCE-BACK OF SOUND. IF YOU MUST DIRECT SPEAKERS TOWARD SUCH A SURFACE, TILT THEM DOWNWARD, SO THAT THE BEAM OF SOUND IS AIMED AT DANCERS, NOT AT A WALL. WHEREVER IT IS PRACTICABLE, DIRECT SPEAKERS TOWARD AN ABSORBENT SURFACE--ONE WHICH IS DRAPED OR ACOUSTICALLY TREATED.

### FEEDBACK

THE FEEDBACK SQUEAL CAN OCCUR AT ANY TIME THAT POWER IS TURNED UP ON AN AMPLIFIER AND AN OPEN MIKE IS NEAR A LOUDSPEAKER. 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 AMPLIFIER 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 THE MIKE THAT YOU HAVE TO TURN UP AN EXCESS OF POWER IN ORDER TO COVER THE FLOOR. IT CAN ALSO BE CAUSED BY STANDING TOO CLOSE TO A SPEAKER. ONLY VERY RARELY IS FEEDBACK CAUSED BY ANY DEFECT IN THE MIKE OR IN THE AMPLIFIER.

## USING YOUR TONE CONTROLS

IN A HALL WHICH IS EXCELLENT ACOUSTICALLY, YOU CAN SET YOUR TONE CONTROLS, WITHIN LIMITS, ALMOST ANY WAY THAT YOU CHOOSE, TO GET THE SOUND QUALITY OF VOICE AND MUSIC THAT YOU PREFER.

BUT IN A HALL WHICH IS REVERBERANT, NOT ONLY MUST THE VOICE-MUSIC BALANCE BE ADJUSTED TO COMPENSATE FOR THE ACOUSTIC CONDITIONS, BUT THE TONE CONTROLS FOR BOTH MUSIC AND VOICE MUST ALSO BE ADJUSTED. IN A REVERBERANT HALL, NOT ONLY MUST YOU CUT THE MUSIC VOLUME DOWN, BUT YOU SHOULD ALSO USE YOUR TONE CONTROLS TO REMOVE EXCESS BASS BOOMINESS FROM THE MUSIC, AND TAKE OUT SOME OF THE HIGHS IN THE MUSIC, WHICH WOULD INTERFERE WITH THE HIGHS IN THE CALLER'S VOICE. ADDING MORE TREBLE WITH THE MIKE TONE CONTROL WILL HELP IN MAKING THE VOICE STAND OUT OVER THE MUSIC. IN A HALL WITH A LOT OF ECHO, THE OBJECT IS TO GET AS MUCH INTELLIGIBILITY INTO THE PROGRAM AS POSSIBLE, EVEN AT THE SACRIFICE OF A PLEASING OVERALL SOUND QUALITY. EVEN IF THE OVERALL EFFECT IS NOT WHAT YOU WOULD PREFER TO HEAR, IF THE DANCERS CAN UNDERSTAND THE CALLER, IT IS POSSIBLE FOR THEM TO DANCE.

TO DETERMINE THE REVERBERATION TIME OF A HALL, STAND IN THE CENTER OF THE EMPTY HALL, CLAP YOUR HANDS, AND CAREFULLY COUNT THE NUMBER OF SECONDS BEFORE THE SOUND DIES AWAY COMPLETELY. 1 SECOND OR LESS--EXCELLENT ACOUSTIC CONDITIONS. 2 TO  $2\frac{1}{2}$  SECONDS--NOT GOOD, BUT WITH SPEAKERS PLACED PROPERLY AND CAREFUL ATTENTION TO VOICE-MUSIC BALANCE AND TONE COMPENSATION, IT IS POSSIBLE TO GET FAIR SOUND, WITH GOOD INTELLIGIBILITY. 3 SECONDS OR MORE--THE SOUND WILL NOT BE GOOD, NO MATTER WHAT EQUIPMENT YOU USE OR HOW WELL YOU OPERATE IT. ONLY ACOUSTIC TREATMENT OF SUCH A HALL WILL PRODUCE SOUND WHICH IS ADEQUATE FOR SQUARE DANCING.

## NEEDLE CARE

YOUR NEEDLE SHOULD WITH PROPER CARE LAST FOR HUNDREDS OF HOURS. BE CAREFUL NOT TO DROP IT ON THE RECORD OR ON ANY METAL SURFACE, OR TO DRAG IT ACROSS THE SURFACE OF THE RECORD. USE THE FOAM NEEDLE PAD, AND BE SURE THAT THE TONE ARM IS LOCKED FIRMLY IN PLACE AND THAT THE CLIP IS ALL THE WAY TO THE LEFT BEFORE SECURING THE AMPLIFIER.

## HANDLING AND TRANSPORTATION

YOUR HILTON IS DESIGNED FOR RUGGEDNESS, AND WITH THE NORMAL HANDLING TO BE EXPECTED IN PORTABLE USE, IT WILL GIVE YOU YEARS OF TROUBLE-FREE SERVICE. BY USING THE PROTECTIVE CARRYING CARTONS FURNISHED WITH EACH HILTON SOUND SYSTEM, YOU MAY STOW COMPONENTS IN ANY POSITION FOR HAULING, AS LONG AS THEY ARE PROTECTED FROM BEING BUMPED AND BANGED AROUND.

## ROUTINE INSPECTION AND MAINTENANCE

ROUTINE CLEANING AND INSPECTION OF YOUR SOUND SYSTEM, MICROPHONE AND CORDS WILL HELP IN PREVENTING TROUBLE AND MAINTAIN THE APPEARANCE AND PERFORMANCE OF YOUR HILTON.

### PAINTED AND FINISHED SURFACES

A SOFT CLOTH OR SPONGE DAMPENED IN A MILD DETERGENT SOLUTION MAY BE USED TO CLEAN ALL OF THESE SURFACES, INCLUDING THE PLASTIC KNOBS. THE USE OF CHEMICAL CLEANERS OR CAUSTIC SOLUTIONS IS NOT RECOMMENDED BECAUSE SOME OF THEM MAY DISSOLVE PAINT OR PLASTIC.

### CHECKING AND CLEANING NEEDLE

ALWAYS KEEP A SPARE CARTRIDGE, IN CASE OF DAMAGE TO THE ONE THAT YOU ARE USING. TO CHECK YOUR NEEDLE, PUT ON A FAMILIAR RECORD, AND LISTEN CAREFULLY TO THE MUSIC. THEN, GRASPING THE CARTRIDGE AT THE SIDES, SLIP IT OUT, AND PUT IN YOUR SPARE. LISTEN CAREFULLY AGAIN FOR ANY DIFFERENCE IN SOUND. ONE SYMPTOM OR A WORN NEEDLE IS LOSS OF HIGHS IN THE MUSIC, MAKING IT SOUND BASSY.

USING THE FOAM NEEDLE PAD BETWEEN TIPS AND WHILE CHANGING RECORDS WILL HELP IN KEEPING DUST FROM ACCUMULATING AROUND THE NEEDLE. IF DUST DOES ACCUMULATE AROUND THE NEEDLE, REMOVING THE CARTRIDGE AND BLOWING GENTLY WILL REMOVE IT.

### TURNTABLE MAINTENANCE AND ADJUSTMENT

ANY FLUCTUATION OF TURNTABLE SPEED IS THE RESULT OF SLIPPAGE BETWEEN THE DRIVE WHEEL AND THE UNDERSIDE OF THE TURNTABLE PLATTER. SUCH SLIPPAGE MAY BE CAUSED BY AN ACCUMULATION OF OILY FILM ON THE UNDERSIDE OF THE PLATTER AND THE RIM OF THE DRIVE WHEEL; OR BY THE SHAFT AND BEARING BECOMING DRY OR GUMMED UP SO THAT THE PLATTER DOES NOT SPIN FREELY.

FOR ROUTINE MAINTENANCE, YOU SHOULD OBTAIN A SPRAY CAN OF A NON-LUBRICATING CLEANER OF THE TYPE USED FOR DEGREASING IN RADIO AND TV TUNERS AND CONTROLS. EVERY THREE MONTHS OR MORE OFTEN IF THE UNIT IS IN HEAVY USE, FOLLOW THE PROCEDURE DESCRIBED BELOW:

LIFT THE PLATTER STRAIGHT UP OUT OF THE SHAFT WELL. DAMPEN A CLOTH WITH THE CLEANER AND THOROUGHLY CLEAN THE UNDERSIDE OF THE PLATTER INSIDE THE STROBE DOTS, THE PLATTER SHAFT, AND THE RIM OF THE DRIVE WHEEL. USE A PIPE CLEANER DAMPENED WITH THE CLEANER TO CLEAN THE INSIDE OF THE SHAFT WELL. PUT A LIGHT FILM OF OIL ON THE SHAFT. IF ANY SLIPPAGE WAS OCCURRING BECAUSE OF OILY FILM ON THE PLATTER OR DRIVE WHEEL, OR BY EXCESSIVE FRICTION IN THE SHAFT BEARING, THIS WILL CORRECT THE PROBLEM AND SPEED WILL HOLD CONSTANT.

IF THE TURNTABLE IS CLEAN AND PROPERLY LUBRICATED AND 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. IF THE UNIT HAS BEEN DROPPED OR BUMPED, A CHANGE IN THE TENSION OF THIS SPRING CAN OCCUR.

TO CHECK THE TENSION OF THIS SPRING, START THE TURNTABLE RUNNING AND SET SPEED AT 45 RPM. STOP THE PLATTER WITH YOUR FINGER. YOU SHOULD FEEL A RESISTANCE FROM THE TORQUE OF THE MOTOR. WHEN YOU REMOVE YOUR FINGER, THE PLATTER SHOULD REACH NORMAL SPEED IN LESS THAN ONE

REVOLUTION. IF IT DOES NOT, THE SPRING TENSION IS TOO WEAK, AND THE DRIVE WHEEL IS SLIPPING.

TO ADJUST THE SPRING TENSION, LIFT THE PLATTER OUT AND LOCATE THE SLOTTED ADJUSTMENT SCREW, ABOUT  $\frac{1}{4}$ " FROM THE RIM OF THE DRIVE WHEEL. LOOSEN THE LOCKNUT, AND TURN THE SCREW CLOCKWISE TO DECREASE THE SPRING TENSION, OR COUNTERCLOCKWISE TO INCREASE TENSION. TIGHTEN THE SPRING NO MORE THAN NECESSARY. WHEN THE TENSION IS CORRECT, TIGHTEN THE LOCKNUT AND REPLACE THE PLATTER AND THE TURNTABLE IS READY FOR USE.

### CHECKING OF PLUGS, SOCKETS, CORDS

IN NORMAL USE, YOUR CORDS, PLUGS AND SOCKETS TAKE MORE PUNISHMENT THAN ANY OTHER COMPONENTS OF YOUR SOUND SYSTEM. FOR THIS REASON THEY SHOULD GET A LITTLE EXTRA ATTENTION--MORE FREQUENT CHECKUPS, EXTRA CARE IN HANDLING AND STOWING--TO PREVENT FAILURES WHILE IN OPERATION AND TO PROLONG THEIR LIFE. FORTUNATELY, THERE ARE ADVANCE WARNING SIGNALS BEFORE THESE COMPONENTS FAIL. IF YOU KNOW WHAT TO LOOK FOR, YOU CAN AVOID EMBARRASSING INTERRUPTIONS OF YOUR DANCE PROGRAMS.

**WEAR OF PLUGS AND SOCKETS:** IF PLUGS SLIP IN AND OUT OF THEIR SOCKETS MUCH MORE EASILY THAN WHEN THEY WERE NEW, THEY ARE BECOMING WORN AND SHOULD BE REPLACED BEFORE THEY BEGIN TO MAKE INTERMITTENT CONTACT.

**CORROSION OF PLUGS AND SOCKETS:** CONTACT SURFACES OF PLUGS AND SOCKETS MAY BECOME CORRODED FROM MOISTURE IN THE AIR, PARTICULARLY IN VERY HUMID CLIMATES. THIS CORROSION PREVENTS GOOD ELECTRICAL CONTACT. IF YOUR SPEAKER PLUGS AND THE PLUGS ON SPEAKER CORDS BECOME TIGHTER RATHER THAN LOOSER, IT IS THE RESULT OF CORROSION. ONE GOOD WAY TO SLOW DOWN THIS PROCESS OF CORROSION, AND EVEN RESTORE GOOD ELECTRICAL CONTACT AFTER AN OXIDIZED FILM HAS BEGUN TO BUILD UP, IS BY CLEANING PLUGS AND SOCKETS WITH WD-40, WHICH IS AVAILABLE AT ALMOST ANY HARDWARE STORE. PUT A LITTLE WD-40 ON THE PLUGS OF YOUR CORDS AND SPEAKERS; PLUG THEM IN AND OUT OF THEIR SOCKETS A FEW TIMES TO WORK SOME OF THE MATERIAL INTO THE SOCKETS, AND WIPE AWAY ANY EXCESS. THIS WILL HELP PREVENT BUILDUP OF FILM WHICH WOULD CAUSE INTERMITTENT CONTACT.

**BROKEN STRANDS IN CORDS:** CORDS CAN BECOME FRAYED INSIDE THEIR INSULATION FROM REPEATED FLEXING AND BENDING. TO CHECK YOUR CORDS, SET UP YOUR SOUND SYSTEM, PLUG IN YOUR MIKE AND PUT ON A RECORD. AS YOU CALL, WIGGLE EACH PLUG IN ITS SOCKET AND FLEX EACH CORD ALONG ITS LENGTH. LISTEN FOR STATIC AND INTERRUPTIONS, WHICH ARE WARNING SIGNALS OF FUTURE TROUBLE.

REMEMBER, ANY WIRE CAN BE BENT ONLY SO MANY TIMES, AND IT WILL EVENTUALLY BREAK. YOU CAN MAKE YOUR CORDS LAST MUCH LONGER IF YOU FORM THE HABIT WHEN YOU PUT THEM AWAY OF COILING THEM WITHOUT SHARP BENDS. THIS IS PARTICULARLY IMPORTANT IN THE CASE OF SHIELDED CABLES, INCLUDING MICROPHONE CORDS.

### CHECKING MICROPHONE

A MIKE 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 PROGRAM, MAKING IT SOUND TINNY, AND THERE WILL BE AN INCREASED SUSCEPTIBILITY TO FEEDBACK.

CARE OF A MICROPHONE IS FAIRLY OBVIOUS. DON'T DROP IT; DON'T BLOW INTO IT; DON'T SPRAY OR SQUIRT ANY MATERIAL INTO IT IN AN ATTEMPT TO CLEAN IT. IF YOU CAN, KEEP IT IN A DRY PLACE WHEN NOT IN USE. EXCESSIVE MOISTURE INSIDE A MICROPHONE CAN INTERFERE WITH THE FREE MOTION OF THE DIAPHRAGM, CAUSING THE VOICE TO SOUND UNNATURAL. A MICROPHONE STORED IN A VERY COLD OR DAMP PLACE MAY DISPLAY THIS SYMPTOM. A MICROPHONE WITH INADEQUATE FILTERING MAY EVEN DEVELOP THIS SYMPTOM WHILE IN USE, FROM MOISTURE IN THE CALLER'S BREATH. IN EITHER CASE, THE PROBLEM WILL PROBABLY BE GONE WHEN THE MICROPHONE IS DRY. EXCESSIVE MOISTURE WILL ALSO EVENTUALLY CAUSE CORROSION AND OXIDIZATION OF COMPONENTS INSIDE THE MICROPHONE, CAUSING IT TO FAIL.

### CHECKING SPEAKERS

IF A SPEAKER HAS BEEN DROPPED OR HANDLED ROUGHLY, IT MAY DEVELOP A MISALIGNMENT OF THE VOICE COIL WHICH CAN EVENTUALLY LEAD TO WHAT IS CALLED A "DRAGGING CONE." TO CHECK FOR THIS, HOOK UP THE SPEAKER AND PUT ON A RECORD. TURN THE PHONO VOLUME OFF, AND SET THE BASS AT MAXIMUM AND TREBLE AT MINIMUM. PUT YOUR EAR IN FRONT OF THE SPEAKER AND TURN UP ONLY ENOUGH VOLUME SO THAT YOU CAN HEAR THE MUSIC CLEARLY. IF THE CONE IS BEGINNING TO DRAG, YOU WILL HEAR A RASP ON EACH BASS NOTE. THE SPEAKER MAY SOUND NORMAL AT YOUR USUAL VOLUME AND TONE SETTINGS, BUT OVER A PERIOD OF TIME THE PROBLEM MAY GRADUALLY BECOME WORSE SO THAT THE SPEAKER MUST BE RECONED. ANY HILTON SPEAKER WHICH IN NORMAL USE DEVELOPS SUCH A PROBLEM WILL BE REPLACED WITHOUT CHARGE DURING ITS WARRANTY PERIOD, OR AT A NOMINAL EXCHANGE CHARGE AFTER WARRANTY HAS EXPIRED.

HAVING CHECKED THE SPEAKER ITSELF, RESET THE TONE CONTROLS AT NORMAL AND TURN UP CONSIDERABLE VOLUME. CHECK FOR ANY RATTLE OR VIBRATION FROM THE GRILLE OR TRIM, AND TIGHTEN UP SCREWS AS NECESSARY.

### IN CASE OF TROUBLE

YOUR HILTON WAS CAREFULLY ASSEMBLED AND TESTED BEFORE IT WAS DELIVERED 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 IN THE COURSE OF NORMAL USE AND OPERATION, WHICH IS NOT CAUSED BY ABUSE OR ACCIDENT, WE WILL PROMPTLY HONOR THE TERMS OF 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, OR BY REPLACEMENT OF THE DEFECTIVE UNIT AT OUR EXPENSE, OR BY FURNISHING LOANER EQUIPMENT FOR YOUR USE WHILE WE DO THE NECESSARY REPAIR IN OUR SHOP.

NON-WARRANTY REPAIR: 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. IT IS QUITE POSSIBLE THAT WE COULD SAVE YOU TIME AND MONEY IN HELPING YOU TO GET YOUR SOUND SYSTEM BACK IN OPERATION.

### BEFORE NOTIFYING US

IF ANY PART OF YOUR HILTON SOUND SYSTEM SHOULD DEVELOP A PROBLEM, THE INFORMATION THAT YOU GIVE US SHOULD BE AS DETAILED AS POSSIBLE, IN ORDER FOR US TO PROVIDE YOU THE BEST AND FASTEST SERVICE POSSIBLE.

FOR EXAMPLE, IF A MICROPHONE SHOULD STOP WORKING, THE SOURCE OF THE TROUBLE MIGHT BE IN THE MICROPHONE ITSELF, IN THE CORD, OR IN THE INPUT ON THE AMPLIFIER. A FEW SIMPLE TESTS BEFORE NOTIFYING US WOULD BE OF GREAT VALUE IN ISOLATING THE SOURCE OF THE PROBLEM AND CORRECTING IT QUICKLY FOR YOU. LISTED BELOW ARE SOME TESTS THAT YOU COULD MAKE IN EVENT OF TROUBLE, WHICH WOULD BE OF GREAT HELP TO US IN GIVING YOU THE BEST POSSIBLE CUSTOMER SERVICE.

#### STROBE BULB OUT OR INTERMITTENT:

THE BULB PROBABLY NEEDS TO BE REPLACED. IF THE BULB FLICKERS OR IS ON PART OF THE TIME, THE PROBLEM IS NOT LIKELY TO BE IN THE CIRCUIT, BUT IN THE BULB ITSELF. REPLACEMENT BULB SHOULD BE A NO. NE-51H OR NO. B2A NEON. IF THEY ARE NOT AVAILABLE LOCALLY, REPLACEMENTS CAN BE ORDERED FROM US. TO REMOVE THE STROBE BULB, PUSH STRAIGHT IN AND TURN IT TO THE LEFT (COUNTERCLOCKWISE).

#### STROBE LIGHT ON, TURNTABLE OPERATES, NO VOICE OR MUSIC:

RECHECK YOUR SPEAKER HOOKUP TO BE SURE THAT ALL TERMINALS ARE FIRMLY CONNECTED, AND THAT CORRODED CONTACTS ARE NOT THE CAUSE OF THE PROBLEM.

IF THIS PROBLEM OCCURS WHILE YOU ARE USING ONE SPEAKER, IF POSSIBLE RECHECK THE SAME SPEAKER WITH ANOTHER CORD, AND THE SAME CORD WITH ANOTHER SPEAKER, TO SEE IF THE PROBLEM IS CAUSED BY THE SPEAKER, THE CORD, OR BY A PROBLEM IN THE AMPLIFIER.

IF THIS PROBLEM OCCURS WHILE YOU ARE USING TWO OR MORE SPEAKERS WITH A SERIES Y CONNECTOR: REMOVE THE Y CONNECTOR AND CHECK EACH SPEAKER AND CORD INDIVIDUALLY BY PLUGGING ONE SPEAKER AT A TIME DIRECTLY INTO THE AMPLIFIER. THIS WILL DETERMINE IF THE PROBLEM IS IN ONE OF THE SPEAKERS, ONE OF THE CORDS, THE Y CONNECTOR, OR IN THE AMPLIFIER ITSELF. IN A SERIES HOOKUP, IF ONE SPEAKER OR ONE CORD HAS A BAD CONNECTION, YOU WILL GET NO SOUND AT ALL FROM THE OTHER SPEAKERS. BY ELIMINATING A FAULTY COMPONENT FROM A SERIES HOOKUP, THE REST OF THE SYSTEM MAY BE RECONNECTED AND WILL OPERATE PROPERLY.

IF THE CORDS, THE SPEAKERS, AND THE Y CONNECTOR CHECK OUT OK, THEN THE PROBLEM IS IN THE AMPLIFIER. IF YOU DO THESE TESTS BEFORE CALLING US, WE CAN IDENTIFY THE FAULTY COMPONENT AND CORRECT YOUR PROBLEM MUCH FASTER.

#### CIRCUIT BREAKER OPENS:

TURN OFF THE POWER SWITCH, PRESS THE RESET BUTTON, TURN POWER BACK ON. IF THE BREAKER AGAIN TRIPS, TURN OFF THE SWITCH AND CHECK LINE VOLTAGE IF POSSIBLE. BE SURE THAT THE POWER SOURCE IS 110/120 VOLTS AC. IF THE VOLTAGE IS NORMAL, DISCONNECT ALL SPEAKERS, TAPE RECORDERS, ETC. FROM THE AMPLIFIER AND SEE IF THE BREAKER REMAINS CLOSED. IF THE BREAKER REPEATEDLY TRIPS, SHUT THE SYSTEM OFF AND CONTACT US.

#### MUSIC ONLY--NO VOICE:

TRY THE OTHER MICROPHONE JACK. IF POSSIBLE, TRY ANOTHER MICROPHONE TO SEE IF IT WORKS WITH THE AMPLIFIER. IF POSSIBLE, TRY THE SAME MICROPHONE WITH A DIFFERENT CORD.

#### VOICE ONLY--NO MUSIC:

CHANGE NEEDLES BEFORE NOTIFYING US.



### DISTORTION:

LISTEN CAREFULLY TO DETERMINE IF BOTH VOICE AND MUSIC ARE DISTORTED. IF MUSIC ONLY, CHANGE NEEDLES. IF VOICE ONLY, CHECK WITH A DIFFERENT MICROPHONE. IF BOTH VOICE AND MUSIC ARE DISTORTED, RECHECK IF POSSIBLE WITH ANOTHER SPEAKER TO DETERMINE IF THE PROBLEM IS CAUSED BY A FAULT IN THE AMPLIFIER OR IN THE SPEAKER.

### SPEAKER DEAD OR INTERMITTENT:

RECHECK SPEAKER HOOKUP. CHECK FOR CORRODED TERMINALS. CHANGE SPEAKER CORD. TRY ANOTHER SPEAKER WITH THE SAME CORD, TO DETERMINE WHETHER THE FAULT IS IN THE SPEAKER, THE CORD, OR THE AMPLIFIER.

### AMPLIFIER GOES DEAD:

CHECK THE SOURCE OF AC POWER AND MAKE SURE THAT THE CORD IS PLUGGED IN FIRMLY AT THE AMPLIFIER AND AT THE RECEPTACLE. PUSH THE RESET BUTTON ON THE CIRCUIT BREAKER. CHECK THE AMPLIFIER FOR EXCESS HEAT BY PLACING YOUR HAND ON THE LEFT SIDE OF THE TOP DECK, WHERE THE SPEED CONTROL KNOB IS. IF IT FEELS EXCESSIVELY WARM, LEAVE THE POWER SWITCH ON TO SEE IF THE AMPLIFIER RESTARTS ITSELF AFTER IT COOLS. TO DETERMINE WHETHER ANY OVERHEATING IS CAUSED BY A DEFECTIVE COMPONENT IN THE AMPLIFIER, OR BY INCORRECT HOOKUP, MAKE SURE THAT THE SPEAKERS ARE CONNECTED ACCORDING TO THE INSTRUCTIONS IN THIS MANUAL, AND THAT NO TAPE RECORDER IS CONNECTED TO ANY SPEAKER SOCKET, SPEAKER, OR SPEAKER CORD.

### 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 SOUND LEVEL THAN THE MAIN HALL; TO COVER AN ELL WHICH REQUIRES LESS VOLUME THAN THE MAIN SECTION OF THE FLOOR, ETC.

ON ALL HILTON AMPLIFIERS, 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 SALVE 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 CHANGE 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, YOU SHOULD USE SUFFICIENT

LENGTH OF LOW IMPEDANCE CABLE, AND A PAIR OF LINE MATCHING TRANSFORMERS. PLUG ONE TRANSFORMER INTO THE TAPE RECORD JACK ON THE MAIN AMPLIFIER, CONNECT THE CABLE AND THE OTHER TRANSFORMER. PLUG THE SECOND TRANSFORMER INTO THE MICROPHONE JACK ON THE SLAVE AMPLIFIER AND PROCEED AS DESCRIBED ABOVE.

INSURANCE AND TAX RECORD

AMPLIFIER SERIAL NO. \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

COST \_\_\_\_\_

SPEAKER(S):

MAKE & MODEL NO. \_\_\_\_\_

SERIAL NUMBER(S) \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

COST \_\_\_\_\_

MICROPHONE(S):

MAKE & MODEL NO. \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

COST \_\_\_\_\_