

HILTON
MICRO-75
SOUND SYSTEM

OPERATING INSTRUCTIONS

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PLEASE NOTE:

THE INSTRUCTIONS FOR SPEAKER HOOKUP WHICH ARE CONTAINED IN THIS INSERT SHEET APPLY TO ALL MICRO-75 AMPLIFIERS BEGINNING WITH SERIAL NO. 1177653.

IF THE LAST THREE DIGITS OF YOUR SERIAL NUMBER ARE 653 OR GREATER, DISREGARD THE SECTIONS OF THIS MANUAL WHICH ARE HEADED:

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HOOKUP FOR SPEAKERS OTHER THAN HILTON SPEAKERS, PAGE 4

EFFECTIVE WITH SERIAL NO. 1177653, EACH MICRO-75 IS PROVIDED WITH ONE CINCH S-302-AB SPEAKER SOCKET, THE SAME AS THOSE ON ALL OTHER HILTON AMPLIFIERS, INSTEAD OF THE TWO PHONE JACKS PREVIOUSLY PROVIDED. THIS MAKES IT POSSIBLE TO CONNECT ANY HILTON SPEAKER, EXCEPT THE HILTON SOUND COLUMN WHICH HAS BEEN DISCONTINUED, DIRECTLY TO THE MICRO-75.

HOOKUP FOR ONE HILTON FOLDED HORN SPEAKER

CONNECT DIRECTLY TO THE SOCKET ON THE REAR OF THE MICRO-75. IMPEDANCE WILL BE 8 OHMS.

HOOKUP FOR TWO HILTON FOLDED HORN SPEAKERS

PLUG THE SERIES Y CONNECTOR PROVIDED WITH THE UNIT INTO THE SOCKET ON THE REAR PANEL. CONNECT ONE SPEAKER TO EACH SOCKET ON THE SERIES Y CONNECTOR. IMPEDANCE WILL BE 16 OHMS.

HOOKUP FOR FOUR HILTON FOLDED HORN SPEAKERS

CONNECT THE FIRST TWO SPEAKERS USING THE Y CONNECTOR AS ABOVE; THEN CONNECT ONE MORE SPEAKER TO EACH OF THE SOCKETS ON THE TOPS OF THE FIRST TWO SPEAKERS. IMPEDANCE WILL BE 8 OHMS.

HOOKUP FOR SPEAKERS OTHER THAN HILTON SPEAKERS

BEFORE CONNECTING SPEAKERS NOT OF OUR MANUFACTURE TO THE MICRO-75, FIRST FIND OUT THEIR IMPEDANCE. MINIMUM IMPEDANCE LOAD RECOMMENDED FOR THE MICRO-75 IS 4 OHMS. DO NOT CONNECT SPEAKERS IN ANY COMBINATION WHICH PRODUCES A NET IMPEDANCE LOAD OF LESS THAN 4 OHMS. IF YOU DO, EXCESSIVE HEAT MAY BE GENERATED. THE AMPLIFIER HAS A BUILT IN PROTECTIVE DEVICE WHICH WILL SHUT IT OFF IF THIS OCCURS, BEFORE DAMAGE CAN BE DONE TO THE AMPLIFIER, AND YOU WILL NOT BE ABLE TO RESTART THE MICRO-75 UNTIL IT COOLS BELOW THE DANGER POINT.

TURNTABLE FEATURES AND OPERATION

TONE ARM: THE PICKUP CARTRIDGE IS LOCATED SO THAT THE NEEDLE IS EASY TO SEE, WHEN PLACING IT ON THE RECORD. THE CARTRIDGE IS A SLIP-IN CERAMIC TYPE WITH A 1-MIL DIAMOND NEEDLE, ASTATIC No. 89-1D. THE COUNTERWEIGHT 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 REQUIRES THE USE OF RICKETY TABLES AND STAGES. IT IS MUCH HEAVIER THAN THAT USED FOR A HOME HI-FI UNIT. THE TONE ARM SHOULD BE PLACED IN THE CLIP FOR CARRYING; DURING A DANCE THE FOAM PAD MAY BE USED AS AN ARM REST. TO PLAY 12" RECORDS, REMOVE THE TAPERED ADAPTOR AND SLIDE THE TONE ARM CLIP ALL THE WAY TO THE RIGHT TO CLEAR THE RECORD.

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 POWER TURNED ON 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. ITS GEAR NOISE WILL NOT INTERFERE WITH THE MUSIC PROGRAM, EVEN AT VERY HIGH DRIVE LEVELS.

SPEED CONTROL: CONTINUOUSLY VARIABLE FROM 31 TO 55 RPM. THE INNER STROBE DOTS INDICATE 45 RPM; THE OUTER DOTS 33 RPM. PLACE THE KNOB IN THE OFF POSITION TO DISENGAGE THE DRIVE WHEEL FROM THE UNDERSIDE OF THE PLATTER WHEN THE AMPLIFIER IS SHUT OFF.

REAR PANEL

AC RECEPTACLE: BEFORE PLUGGING IN, MAKE SURE THAT THE POWER SUPPLY IS 110-120 VOLTS. THE POWER CORD OF THE MICRO-75 IS DETACHABLE, AND AN ADAPTER IS PROVIDED FOR USE WHERE WALL SOCKETS ARE NOT OF THE 3-HOLE TYPE.

THE ON-OFF SWITCH CONTROLS POWER BOTH TO THE AMPLIFIER AND TO THE TURNTABLE MOTOR, WHICH CONTINUES TO RUN WHILE THE AMPLIFIER IS TURNED ON.

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, PRESS THE RESET BUTTON AND 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 JACKS: THESE JACKS ARE CONNECTED IN SERIES WITH EACH OTHER, AND ARE DESIGNED FOR OPERATION INTO A LOAD OF FROM 4 TO 8 OHMS. IF USING ONE SPEAKER, CONNECT IT TO EITHER JACK. IF USING MORE THAN ONE SPEAKER, FOLLOW THE INSTRUCTIONS IN THE SECTION OF THIS MANUAL TITLED SPEAKER HOOKUP.

MONITOR JACKS: THE JACK MARKED MUSIC MAY, IF DESIRED BE CONNECTED TO AN EXTERNAL MONITOR AMPLIFIER TO PLAY MUSIC ONLY FOR THE CALLER. THE

SAME JACK MAY BE USED TO PLAY BACK A TAPE THROUGH THE MICRO-75. SEE THE SECTION IN THIS MANUAL TITLED PLAYING BACK A TAPE. THE JACK MARKED ALL MAY BE CONNECTED TO AN EXTERNAL MONITOR AMPLIFIER SO THAT THE CALLER CAN MONITOR THE COMPLETE PROGRAM, AT THE SAME BALANCE AS THAT WHICH IS GOING TO THE FLOOR.

TAPE RECORD JACK: THIS IS ALSO A DUAL-PURPOSE JACK. TO MAKE A TAPE RECORDING, CONNECT IT TO THE MICROPHONE INPUT OF A TAPE RECORDER. FOR INSTRUCTIONS, SEE THE SECTION TITLED MAKING TAPE RECORDINGS. BY CONNECTING IT TO THE MICROPHONE INPUT OF A SECOND AMPLIFIER, THE SECOND AMPLIFIER CAN BE USED AS A SLAVE TO DRIVE ADDITIONAL SPEAKERS. SEE THE SECTION TITLED CORRECT HOOKUP FOR A SLAVE AMPLIFIER.

FRONT PANEL

PHONOGRAPH VOLUME CONTROL: ADJUSTS THE LOUDNESS OF THE MUSIC PROGRAM.
PHONO BASS AND TREBLE CONTROLS: ADJUST THE BASS AND TREBLE COMPENSATION FOR THE MUSIC PROGRAM ONLY; THEY HAVE NO EFFECT ON THE VOICE. VERY WIDE LATITUDE IS PROVIDED, AND WE RECOMMEND USING ONLY THE MINIMUM ADJUSTMENT FROM NORMAL WHICH WILL GIVE YOU THE MUSIC SOUND 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.

REMOTE CONTROL JACK: BY PLUGGING IN THE HILTON REMOTE CONTROL ASSEMBLY, THE MUSIC VOLUME CAN BE ADJUSTED WITH THE KNOB ON THE MICROPHONE, 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 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.

MICROPHONE INPUTS AND VOLUME CONTROL: TWO 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 TREBLE-BASS CONTROL: ONE OF THE FEATURES WHICH MAKE 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 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 TO 40 DEGREES TO THE LEFT OF NORMAL. THE EXTREME BASS SETTING ON THE MICRO-75 IS NOT DESIGNED FOR VOICE REPRODUCTION, BUT FOR USE IN INSTRUMENT PICKUP OR FOR CONNECTING THE

AMPLIFIER TO BE USED AS A SLAVE, WITH ALL COMPENSATION BEING DONE BY THE CONTROL AMPLIFIER. IF YOU HAVE NOT WORKED WITH HILTON EQUIPMENT BEFORE, DO NOT MAKE THE MISTAKE OF TUNING THE HIGHS OUT OF YOUR VOICE; TO DO SO WOULD BE SIMILAR TO BUYING A NEW COLOR TV SET, AND TUNING IT SO THAT THE PICTURE IS BLACK AND WHITE!

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 THE AMPLIFIER, ACCORDING TO THE INSTRUCTIONS GIVEN BELOW ON 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 YOURSELF 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 ITS 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 VOLUME AS DESIRED FOR YOUR OWN COMFORT. SEE ALSO THE SECTION TITLED GETTING THE MOST OUT OF YOUR HILTON.

SPEAKER HOOKUP

HOOKUP FOR HILTON SOUND COLUMNS

ONE COLUMN: PLUG INTO EITHER JACK ON THE BACK OF THE AMPLIFIER, AND INTO EITHER JACK ON THE HILTON COLUMN.

TWO HILTON SOUND COLUMNS: FOLLOW THESE DIRECTIONS CAREFULLY, TO INSURE THAT THE TWO COLUMNS WILL BE IN PHASE WITH EACH OTHER. (1) IF THE AMPLIFIER IS BETWEEN THE TWO COLUMNS: PLUG EACH SPEAKER CORD INTO THE JACK ON THE COLUMN WHICH IS MARKED "IN". PLUG THE CORDS INTO THE TWO JACKS ON THE BACK OF THE AMPLIFIER. (2) IF YOU MUST SET UP SO THAT BOTH COLUMNS ARE TO YOUR RIGHT OR TO YOUR LEFT: PLUG A SPEAKER CORD INTO ONE OF THE JACKS ON THE BACK OF THE AMPLIFIER. PLUG THE OTHER END INTO THE JACK MARKED "IN" ON THE COLUMN NEAREST THE AMPLIFIER. PLUG A SECOND CORD INTO THE JACK MARKED "OUT" ON THE SAME COLUMN. PLUG THE OTHER END OF THIS CORD INTO THE JACK MARKED "IN" ON THE COLUMN FARTHEST FROM THE AMPLIFIER. DO NOT USE ANY OTHER HOOKUP FOR HILTON SOUND COLUMNS, OR THEY WILL BE OUT OF PHASE, CAUSING THE SOUND TO BE MUSHY IN THE AREA BETWEEN THEM, WHERE THEIR CONES OF SOUND OVERLAP.

HOOKUP FOR HILTON FOLDED HORN SPEAKERS, JBL OR SS-ALT

PLUG THE PARALLEL Y CONNECTOR FURNISHED WITH THE MICRO-75 INTO ONE OF THE JACKS ON THE BACK OF THE AMPLIFIER. CONNECT THE SPEAKER TO EITHER OF THE SOCKETS IN THE Y CONNECTOR.

IF USING TWO SPEAKERS, CONNECT THE SECOND SPEAKER EITHER TO THE OTHER SOCKET IN THE Y CONNECTOR, OR TO THE SOCKET ON THE TOP OF THE FIRST SPEAKER.

HOOKUP FOR SPEAKERS OTHER THAN HILTON SPEAKERS

BEFORE CONNECTING SPEAKERS NOT OF OUR MANUFACTURE TO THE MICRO-75, FIRST FIND OUT THEIR IMPEDANCE: USUALLY 4, 8, OR 16 OHMS. THEN CONNECT AS FOLLOWS: ONE SPEAKER: CONNECT DIRECTLY TO EITHER SPEAKER JACK ON THE MICRO-75. TWO 4-OHM SPEAKERS: CONNECT ONE SPEAKER TO EACH SPEAKER JACK ON THE AMPLIFIER. THEY WILL THEN BE IN SERIES, WITH A NET IMPEDANCE OF 8 OHMS. TWO 8- OR 16-OHM SPEAKERS: CONNECT ACCORDING TO THE INSTRUCTIONS ABOVE FOR HOOKUP OF HILTON FOLDED HORN SPEAKERS. THEY WILL THEN BE IN PARALLEL, WITH A NET IMPEDANCE OF 4 OR 8 OHMS, RESPECTIVELY.

MAKING TAPE RECORDINGS FROM THE MICRO-75

BY FOLLOWING CAREFULLY THESE INSTRUCTIONS FOR HOOKUP, YOU CAN MAKE EXCELLENT RECORDINGS DIRECTLY FROM YOUR MICRO-75.

DO NOT MAKE TAPE RECORDINGS BY CONNECTING TO THE SPEAKER SOCKETS. SOME TAPE RECORDERS HAVE A SHORTING SWITCH ACROSS THEIR INPUT. IF YOU PLUG ONE OF THESE INTO A SPEAKER SOCKET, THE AMPLIFIER WILL PROBABLY OVERHEAT AND SHUT ITSELF OFF.

USE A SHIELDED CABLE WITH A PLUG ON ONE END WHICH FITS THE TAPE RECORD JACK ON THE REAR PANEL (SWITCHCRAFT #3502 OR EQUIVALENT) AND A PLUG ON THE OTHER END WHICH FITS THE MICROPHONE INPUT ON THE RECORDER. DO NOT ATTEMPT TO USE ANY OTHER INPUT ON THE RECORDER TO MAKE A TAPE FROM THE MICRO-75. BE CAREFUL NOT TO OVER-RECORD--THIS WILL MAKE THE PLAYBACK SOUND DISTORTED. IF YOU SHOULD UNDER-RECORD, YOUR AMPLIFIER 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.

PLAYING BACK A TAPE THROUGH THE MICRO-75

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 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 IS NOT AS SATISFACTORY FROM THE SINGLE CONTROL ON THE MICROPHONE INPUT AS THAT OF THE DUAL PHONO CONTROLS.

TO PLAY BACK A TAPE THROUGH THE MICRO-75, USE A SHIELDED CABLE WITH A PLUG ON ONE END WHICH FITS THE EXTERNAL SPEAKER OUTPUT ON THE RECORDER. THE OTHER END REQUIRES A PLUG WHICH FITS THE MONITOR JACKS ON THE BACK OF THE AMPLIFIER. CONNECT THIS PLUG TO THE MUSIC JACK. SET THE PHONO TONE CONTROLS AT NORMAL AND THE PHONO VOLUME AT ABOUT 9 O'CLOCK. TURN UP ENOUGH VOLUME ON THE TAPE RECORDER TO GET A SOFT LISTENING LEVEL, THEN ADJUST VOLUME AND TONE WITH THE PHONO CONTROLS.

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 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 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 AND PROCEED AS ABOVE.

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 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.

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 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 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 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 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. OBVIOUSLY, BEING DROPPED OR BANGED AROUND WILL DAMAGE YOUR EQUIPMENT; BUT YOU CAN STOW IT IN ANY POSITION FOR HAULING, AS LONG AS YOU PROTECT IT FROM BEING SCRATCHED AND BUMPED.

NEEDLE CARE: THE CARTRIDGE FURNISHED IS A SLIP-IN CERAMIC CARTRIDGE. TO REMOVE IT, SIMPLY GRASP IT AT THE SIDES AND PULL IT STRAIGHT OUT. IT SHOULD LAST FOR HUNDREDS OF HOURS OF NORMAL USE, BUT CARE SHOULD BE TAKEN NOT TO DROP IT ON A RECORD OR ANY OTHER HARD SURFACE, OR TO DRAG IT ACROSS THE SURFACE OF A RECORD.

ROUTINE MAINTENANCE AND INSPECTION

ROUTINE CLEANING AND INSPECTION OF YOUR SOUND SYSTEM, MIKE AND CORDS WILL HELP IN PREVENTING TROUBLE AND MAINTAIN THE APPEARANCE AND PERFORMANCE OF YOUR HILTON. HERE ARE SOME TIPS FOR PREVENTATIVE MAINTENANCE:

CLEANING OF CONTROLS. IF DUST ENTERS THE MOVING PARTS OF YOUR CONTROLS, IT WILL PRODUCE A STATIC SOUND WHEN THE KNOBS ARE TURNED. TO CLEAN THE CONTROLS, USE AN AEROSOL CLEANER OR DEGREASER OF THE TYPE USED TO CLEAN RADIO AND TV CONTROLS, WHICH SHOULD BE AVAILABLE AT AN ELECTRONICS SUPPLY STORE. IF THE CLEANER CONTAINS NO LUBRICANT, YOU CAN ALSO USE IT TO CLEAN THE DRIVE WHEEL AND PLATTER ON YOUR TURNTABLE. TURN THE KNOBS ALL THE WAY TO THE LEFT AND MARK THE LOCATIONS OF THE POINTERS. REMOVE THE KNOBS AND TILT THE AMPLIFIER SO THAT THE SHAFTS POINT STRAIGHT UP. THEN FLOOD THE CLEANER IN AROUND THE SHAFTS, ROTATING THEM AS YOU DO SO, TO FLUSH OUT DIRT AND DUST, AND REPLACE KNOBS.

ALUMINUM, VINYL AND PLASTIC 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.

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 LITTLE PROBLEMS FROM BECOMING BIG ONES. 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. LISTEN FOR STATIC AND

INTERRUPTIONS, WHICH ARE WARNING SIGNALS OF FUTURE TROUBLE!

CHECKING NEEDLE. ALWAYS KEEP A SPARE NEEDLE, IN CASE OF DAMAGE TO THE ONE YOU ARE USING. TO CHECK YOUR NEEDLE, PUT ON A FAMILIAR RECORD, AND LISTEN CAREFULLY TO THE MUSIC. THEN PUT IN YOUR SPARE, AND LISTEN FOR ANY DIFFERENCE. ONE SYMPTOM OF A WORN NEEDLE IS LOSS OF HIGHS, MAKING THE MUSIC SOUND BASSY.

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, MAKING IT SOUND TINNY, AND INCREASING SUSCEPTIBILITY TO FEEDBACK.

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. TURN THE VOLUME OFF, AND SET PHONO BASS AT MAXIMUM, TREBLE AT MINIMUM. PUT YOUR EAR IN FRONT OF THE SPEAKER, AND TURN UP JUST ENOUGH VOLUME TO 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 THE USUAL VOLUME AND TONE SETTINGS, BUT THE PROBLEM WILL GRADUALLY BECOME WORSE UNTIL IT IS NECESSARY TO REONE THE SPEAKER. ANY HILTON SPEAKER WHICH UNDER NORMAL USE DEVELOPS SUCH A PROBLEM WILL BE REPLACED WITHOUT CHARGE DURING ITS WARRANTY PERIOD, OR AT A NOMINAL CHARGE AFTER WARRANTY HAS EXPIRED.

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

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 CAN 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 AND NOT TURNING FREELY.

FOR ROUTINE MAINTENANCE, YOU SHOULD OBTAIN AN AEROSOL CAN OF A NON-LUBRICATING CLEANER OF THE TYPE USED FOR DEGREASING IN RADIO AND TV TUNERS AND CONTROLS. EVERY THREE MONTHS OR OFTENER IF SPEED IS FLUCTUATING, FOLLOW THE PROCEDURE DESCRIBED BELOW:

BEING CAREFUL NOT TO LOSE THE 3/16" BALL BEARING FROM THE BOTTOM OF THE TURNTABLE SHAFT WELL, LIFT THE PLATTER STRAIGHT OUT. DAMPEN A CLOTH IN THE CLEANER AND THOROUGHLY CLEAN THE UNDERSIDE OF THE PLATTER INSIDE THE STROBE DISC, THE RIM OF THE DRIVE WHEEL, AND THE SHAFT. USE A PIPE CLEANER TO GET THE CLEANER INTO THE SHAFT WELL. PUT A LIGHT FILM OF OIL ON THE TURNTABLE SHAFT. IF ANY SLIPPAGE WAS OCCURRING BECAUSE OF OILY FILM ON THE PLATTER OR WHEEL, OR BY EXCESSIVE FRICTION IN THE SHAFT BEARING, THIS WILL CORRECT IT AND SPEED WILL HOLD CONSTANT.

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. IF THE AMPLIFIER HAS BEEN DROPPED OR BUMPED, A CHANGE IN THE TENSION OF THIS SPRING CAN OCCUR. IT CAN BE EASILY READJUSTED AS FOLLOWS:

START TURNTABLE RUNNING AND SET SPEED SO THAT STROBE SHOWS 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.

TO ADJUST 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 SPRING TENSION, OR COUNTERCLOCKWISE TO INCREASE TENSION. TIGHTEN NO MORE THAN NECESSARY. WHEN TENSION IS CORRECT, TIGHTEN THE LOCKNUT AND REPLACE THE PLATTER AND THE TURNTABLE IS READY FOR USE.

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

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

RECHECK SPEAKER HOOKUP. IF USING ONLY ONE OF THE SPEAKER JACKS ON THE AMPLIFIER, SWITCH TO THE OTHER JACK. CHECK SPEAKER CORD(S) AND SPEAKER(S) IF POSSIBLE, BY HOOKING THEM TO ANOTHER AMPLIFIER; IF SPEAKERS AND CORDS CHECK OK THE PROBLEM IS IN THE AMPLIFIER. NOTIFY US OF RESULTS OF TESTING.

CIRCUIT BREAKER OPENS:

TURN OFF POWER SWITCH, PRESS RESET BUTTON, TURN ON POWER. IF BREAKER AGAIN TRIPS, TURN OFF SWITCH; CHECK LINE VOLTAGE IF POSSIBLE. IF VOLTAGE IS NORMAL, DISCONNECT SPEAKER CORDS FROM AMPLIFIER AND RECHECK.

IF BREAKER REMAINS CLOSED, PROBLEM IS IN THE CORD OR SPEAKER. IF BREAKER REPEATEDLY TRIPS, CONTACT US FOR NECESSARY ACTION.

MUSIC ONLY--NO VOICE

THIS PROBLEM USUALLY ORIGINATES IN THE MIKE OR CORD. USE ANOTHER MIKE TO CHECK AMPLIFIER. CHANGE MIKE CORDS, IF POSSIBLE, TO SEE WHETHER THE CORD OR THE MIKE IS AT FAULT.

VOICE ONLY--NO MUSIC

CHANGE NEEDLES BEFORE NOTIFYING US.

DISTORTION

CHECK TO DETERMINE IF BOTH VOICE AND MUSIC ARE DISTORTED. IF MUSIC ONLY, CHANGE NEEDLES. IF VOICE ONLY, RECHECK WITH A DIFFERENT MIKE. IF BOTH VOICE AND MUSIC ARE DISTORTED, RECHECK IF POSSIBLE WITH ANOTHER SPEAKER TO DETERMINE IF DISTORTION IS CAUSED BY THE AMPLIFIER OR BY THE SPEAKER.

SPEAKER DEAD OR INTERMITTENT

RECHECK SPEAKER HOOKUP. PLUG SPEAKER INTO THE OTHER SPEAKER JACK. CHANGE SPEAKER CORDS. TRY ANOTHER SPEAKER WITH THE SAME CORD, TO DETERMINE WHETHER THE FAULT IS IN THE SPEAKER OR IN THE CORD.

AMPLIFIER GOES DEAD

CHECK SOURCE OF AC POWER. PUSH RESET BUTTON ON CIRCUIT BREAKER. CHECK AMPLIFIER FOR EXCESSIVE HEAT BY PLACING YOUR HAND ON THE LEFT SIDE OF THE AMPLIFIER, WHERE THE SPEED CONTROL KNOB IS. IF IT FEELS EXCESSIVELY WARM, LEAVE POWER SWITCH ON TO SEE IF AMPLIFIER RESTARTS ITSELF AFTER IT COOLS. TO DETERMINE WHETHER OVERHEATING IS CAUSED BY DEFECT IN AMPLIFIER OR BY INCORRECT HOOKUP, BE SURE THAT SPEAKERS ARE CONNECTED ACCORDING TO OUR INSTRUCTIONS, AND THAT NO TAPE RECORDER IS CONNECTED TO SPEAKER JACKS OR SPEAKER CORDS. NOTIFY US OF RESULTS OF CHECKOUT.

TO PROTECT YOUR WARRANTY

THE HILTON WARRANTY AND CUSTOMER SERVICE POLICY ARE OUTSTANDING IN THE SQUARE DANCE FIELD. IF YOUR HILTON SHOULD DEVELOP A PROBLEM WITHIN TWO YEARS FROM ORIGINAL PURCHASE DATE, IT WILL BE CORRECTED TO YOUR COMPLETE SATISFACTION, PROVIDED ONLY THAT YOU HAVE DONE NOTHING TO VOID YOUR WARRANTY. YOU WILL BE REQUIRED TO BEAR ALL OR PART OF ANY REPAIR AND SHIPPING EXPENSE INVOLVED IF YOU:

1. ATTEMPT REPAIR OR AUTHORIZE REPAIR WITHOUT FIRST NOTIFYING US AND RECEIVING APPROVAL TO DO SO.
2. DAMAGE YOUR AMPLIFIER BY CONNECTING IT TO A 220 VOLT POWER SOURCE, OR TO ANY PORTABLE GENERATOR OR INVERTER.
3. USE ANY OTHER CONNECTION OR HOOKUP WHICH IS STATED IN THIS MANUAL TO BE IMPROPER AND LIKELY TO CAUSE DAMAGE TO YOUR SOUND SYSTEM.
4. HAVE DAMAGE WHICH IS CAUSED BY ACCIDENT AND NOT BY ANY DEFECT IN THE SOUND SYSTEM.
5. MODIFY THE SOUND SYSTEM IN ANY WAY, BY ADDING INPUTS OR OUTPUTS, OR PERMANENTLY CHANGING ITS APPEARANCE BY PAINTING, ENGRAVING, ETC.