

BELL & HOWELL MODELS
770, 775G-1, 775G-10BELL & HOWELL MODELS
770, 775G-1, 775G-10

GENERAL INFORMATION

This manual covers the maintenance and repair of Models 770, 775G-1 and 775G-10 recorders. All three recorders have essentially the same transport mechanism, amplifier and speakers.

The Models 775G-1 and 775G-10 are mounted in combination metal and reinforced plastic cases, and have such features as dual recording level lamps, pause control, odometer type program indicator and speaker monitor switch.

The Model 770 recorder is mounted in a leatherette covered wooden case and is equipped with a single recording level lamp. The pause control, program indicator and speaker monitor switch are omitted.

The Model 775G-1 recorder is equipped with a combination erase-play-record head, that will be referred to as a Shure Brothers Head. The Model 770 and 775G-10 (Serial Number above 2702) recorders are equipped with separate erase heads and play-record heads that will be referred to as Bell & Howell heads. These are mounted in a tape guide block and can be individually removed or adjusted. Circuit and component changes, resulting from the change in heads, are set forth in the schematic diagram and parts list.

These recorders are designed to operate 60 cycle, 115 Volts, AC supply only. Before connecting to your line supply, be absolutely certain that it agrees with the above specifications.

Manufactured by :

Bell & Howell Co.
7125 N. Kimball Ave
Chicago 45, Illinois

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C354

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OPERATING INSTRUCTIONS

Setting-Up The Recorder - MODELS 775

Open the recorder lid by pressing the gray buttons located on either end of the carrying handle. Remove the power cord from the rear storage section of the recorder and plug it into a conventional 115 volt, 60-cycle, alternating current (AC) outlet.

Loading The Tape

This recorder will accept reels of tape up to 7" in diameter. Before attempting to load the recorder, depress the "Stop" button (red button at upper left side of control panel). Place the empty reel on the right hand spindle and the full reel on the left hand spindle. The full reel should be mounted so that it will rotate counterclockwise as the tape is unwound. Unwind about two feet of tape and lead it through the loading slot. Slip the end into one of the slots in the empty reel. Be sure that the tape is not twisted and that the empty reel will fill as it rotates in a counterclockwise direction. Turn the reel by hand to take up the slack.

Preparing To Record

Tape may be recorded either through the microphone or Radio-Phono cord, both of which plug into the "Input" jack. The microphone is used to make live recordings, or it may be placed in front of the speaker of a radio, phonograph, or television set. The Radio-Phono cord may be connected directly to the speaker terminals of a radio, phonograph, or television set, thus eliminating extraneous background noises which are sometimes picked up by a microphone.

The microphone should be plugged into the INPUT jack on the lower right side of the control panel. Turn the MONITOR switch on the left-hand corner of the control panel to "NORMAL" position. This will disconnect the speakers and prevent squeal from acoustical feed back.

Changing Speeds

The record or playback speed of the recorder may be set to either 3 3/4 or 7 1/2 inches per second. The faster speed provides higher fidelity for recording musical selections, while the slower speed has the advantage of longer continuous programming. To change speeds move the SPEED CHANGE shaft up or down; up for 3 3/4" per second, down for 7 1/2" per second. Before setting the shaft make sure the STOP button is depressed. Operation of the recorder is the same for either speed except for the setting of the SPEED CHANGE shaft.

Volume Control

The recorder is turned on by rotation of the VOLUME control in a clockwise direction. The first few degrees of rotation operate the on-off switch; further rotation increases the volume. The TONE CONTROL is not involved during recording but TONAL balance is properly pre-set in the recording.

Before starting to record, allow about one minute for tube warm up. Press the RECORD button down, hold it there, and press the PLAY button to lock it in place. This two-step operation prevents accidental erasure of previous recordings.

Setting Record Level - MODELS 775

The recording level is monitored by the twin Record-Level indicator lamps. Adjust the VOLUME control knob so that the NORMAL indicator flashes regularly in step with variations of the recorded sound level and the MAX. LEVEL indicator flashes intermittently for peak variations. The level is too high if both indicators flash almost continuously and too low if neither one flashes.

Model 770 has a single "record-level" lamp that should flash during all but the lowest passages.

Pause Lever - Models 775

The PAUSE lever, immediately to the right of the RECORD button, can be used to temporarily halt the travel of the tape without disturbing the settings of other controls. This permits recording or playback to be interrupted without the "click" which would develop if the machine were halted by pressing the STOP button.

The PAUSE lever is operated by sliding it to the left and holding it there for any desired interval. When released, it slides back into position, and recording or playback proceeds as before. The PAUSE lever can be useful in obtaining the proper volume level prior to the actual recording. First turn the VOLUME dial counterclockwise to lowest level. Depress the RECORD and PLAY buttons, then hold the PAUSE lever to the left. Adjust the VOLUME dial for proper indication by the Record-Level indicators, then release the PAUSE lever.

Erasing

The recording process automatically erases any previous material recorded on that track of the tape. To completely erase a recorded track, remove all input connections from the recorder, reduce volume to lowest level, and run the tape through in RECORD mode.

Dual-Track System

The Bell & Howell Models 770 and 775 are dual track recorders. To record on the second half of the tape, turn the full reel over and place it on the left spindle, after moving the empty reel to the right. Re-thread the tape and proceed as before.

Using The Radio-Phono Cord

To record directly from the speaker of a radio, phonograph, or television receiver, use the Radio-Phono cord. Insert the plug on the Radio-Phono cord into the INPUT socket on the lower right side of the control panel. Connect the two alligator clips on the opposite end of the cord to the speaker terminals.

BELL & HOWELL MODELS
770, 775G-1, 775G-10

FOLDER 6

When the Radio-Phono cord is used, the program being recorded can be monitored if the monitor switch is moved to the "Monitor" position.

Tone Control

The TONE control knob is located directly to the left of the VOLUME knob. Rotation of the knob in a clockwise direction emphasizes the low frequencies and subdues the high frequencies. Rotation in a counterclockwise direction emphasizes the high frequencies and subdues the low frequencies. No change in volume is produced by a change in setting of the TONE control.

Rewind And Fast Forward

When a tape has been completely played or recorded, press the STOP button to stop the recorder (the STOP button can be used at anytime during any mode of operation). To return the tape back to the original supply reel, press the REWIND button, then use the STOP button when the tape is completely re-wound. For rapid advance of the tape in a forward direction, press the FORWARD button. When either the FORWARD or REWIND buttons are pressed the tape travels at approximately 180 inches per second. Be sure to take up any slack in the tape before using either of these fast speeds.

The recorder is designed so that the STOP button must be pressed before changing from one mode of operation to another. Thus to go from FORWARD or REWIND to another function the machine must first

come to a complete stop. This feature protects the tape from damage.

Program Indicator - Models 775

This feature is useful in "logging" material as it is recorded or in relocating previously logged material. The indicator should be set to "000" at the start of a reel of tape, then any desired point on the tape can be logged or relocated. The counter adds when the tape travels in a forward direction and subtracts for the reverse direction, as during rewind.

Public Address

The Bell & Howell Model 775G tape recorder can be used as a public-address unit in the following manner. Plug the microphone into the front panel INPUT jack and turn the power on. Remove all tape from the recorder. Set the MONITOR switch at the "P.A." position. Press the RECORD button and lock it in place by pressing the PLAY button.

Keep the microphone to one side or behind the speakers to avoid feed-back squeal.

Dictation And Transcription Machine

An ear-phone unit is available as an accessory. With its use the recorder will perform as a dictation and transcription machine, limiting the sound to one person.

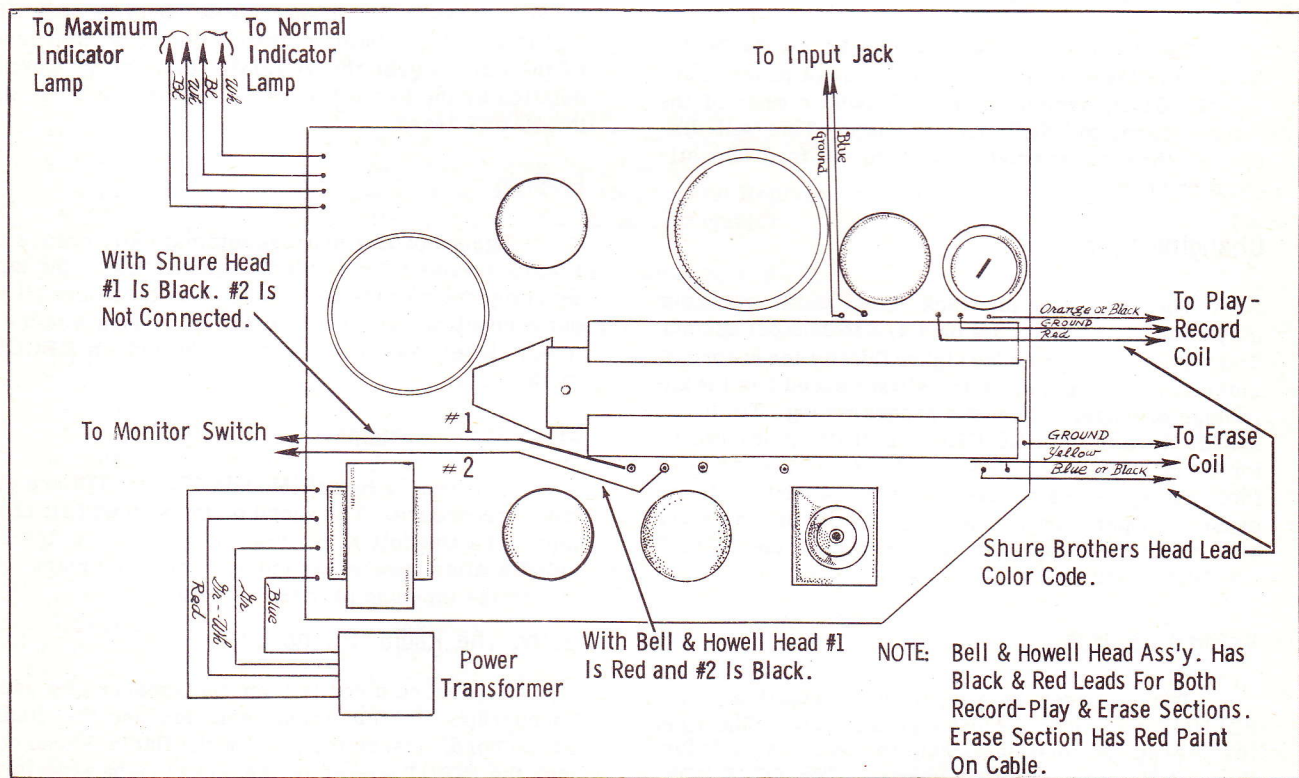


FIGURE 1.

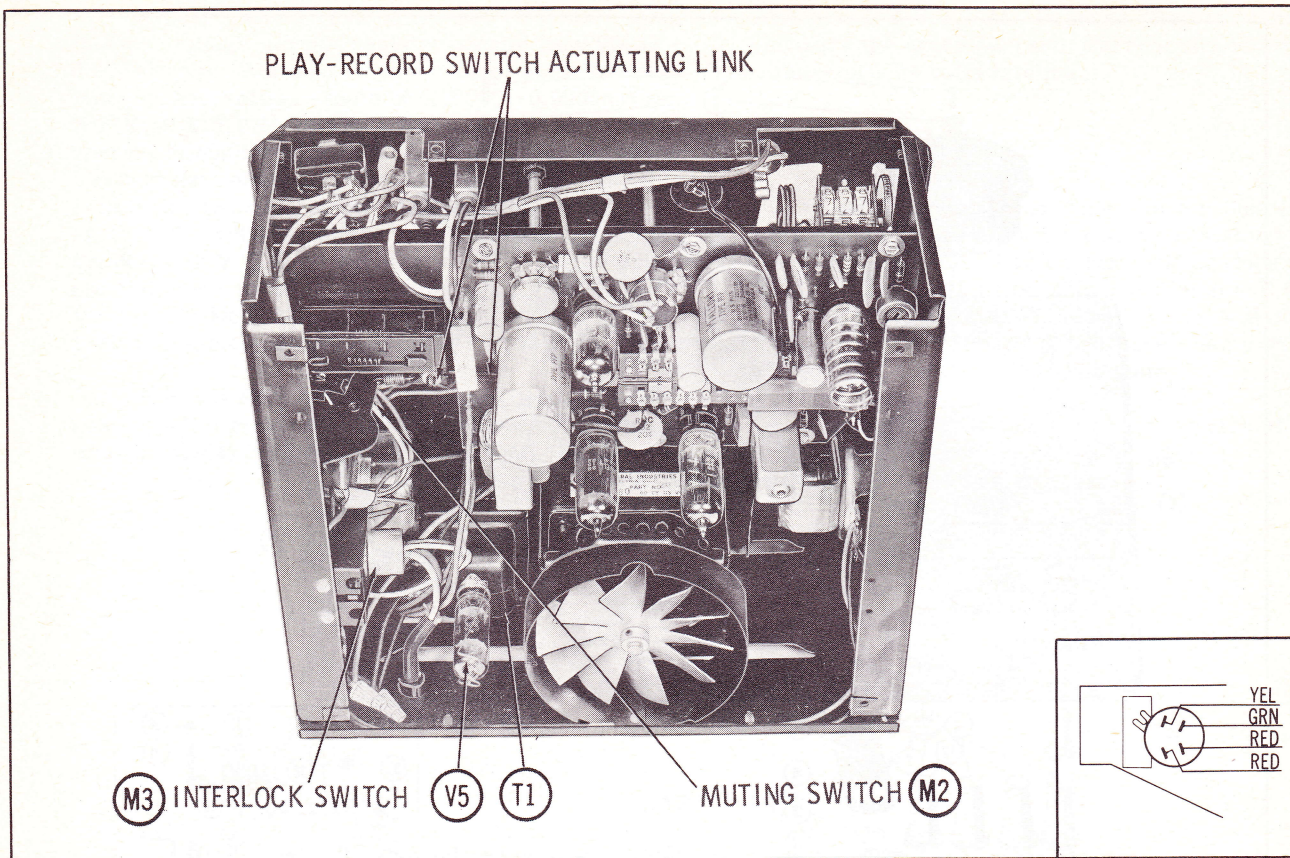


FIGURE 2

DISASSEMBLY INSTRUCTIONS

To Test Or Replace Tubes

Remove the bottom grille assembly, held in place by 4 Phillips head screws. The two longer screws are used for that side of the grille which has the name plate.

To Remove Amplifier And Tape Mechanism From Case

1. Remove the two reel spindles held in place by Phillips head machine screws and flat washers.
2. Remove PAUSE, VOLUME, and TONE control knobs from their shafts.
3. Remove the top plate assembly (5) secured in place by 4 Phillips head machine screws. This will give access to the magnetic head, pressure pad assembly, idler drive wheels, upper linkage parts, Veeder Root counter assembly, and level indicating lamps.
4. Remove the plastic carrying handle, secured in place by two screws. On early models, screws are accessible from under side of the handle.
5. Place the recorder in its upright position and remove the two plastic feet, secured in place by the

Phillips head machine screws at the back of the case. Remove the bottom grille as described under TO TEST OR REPLACE TUBES.

6. Remove the two Phillips head screws accessible through the openings in the channel metal support for the plastic handle.

7. Withdraw the mechanism assembly from the case, being careful not to damage the speaker cones.

Removal Of Amplifier Assembly

1. Disconnect all plug-in leads shown in Fig. 1.

NOTE: Refer to Figure 2 for location of items mentioned below.

2. Disconnect the slide switch wire link from the slide switch by first loosening the 3/8" switch position adjustment nut.
3. Unsolder the leads to the on-off switch and the interlock muting switch (M2 Fig. 2).
4. Unscrew the volume and tone control locking nuts.

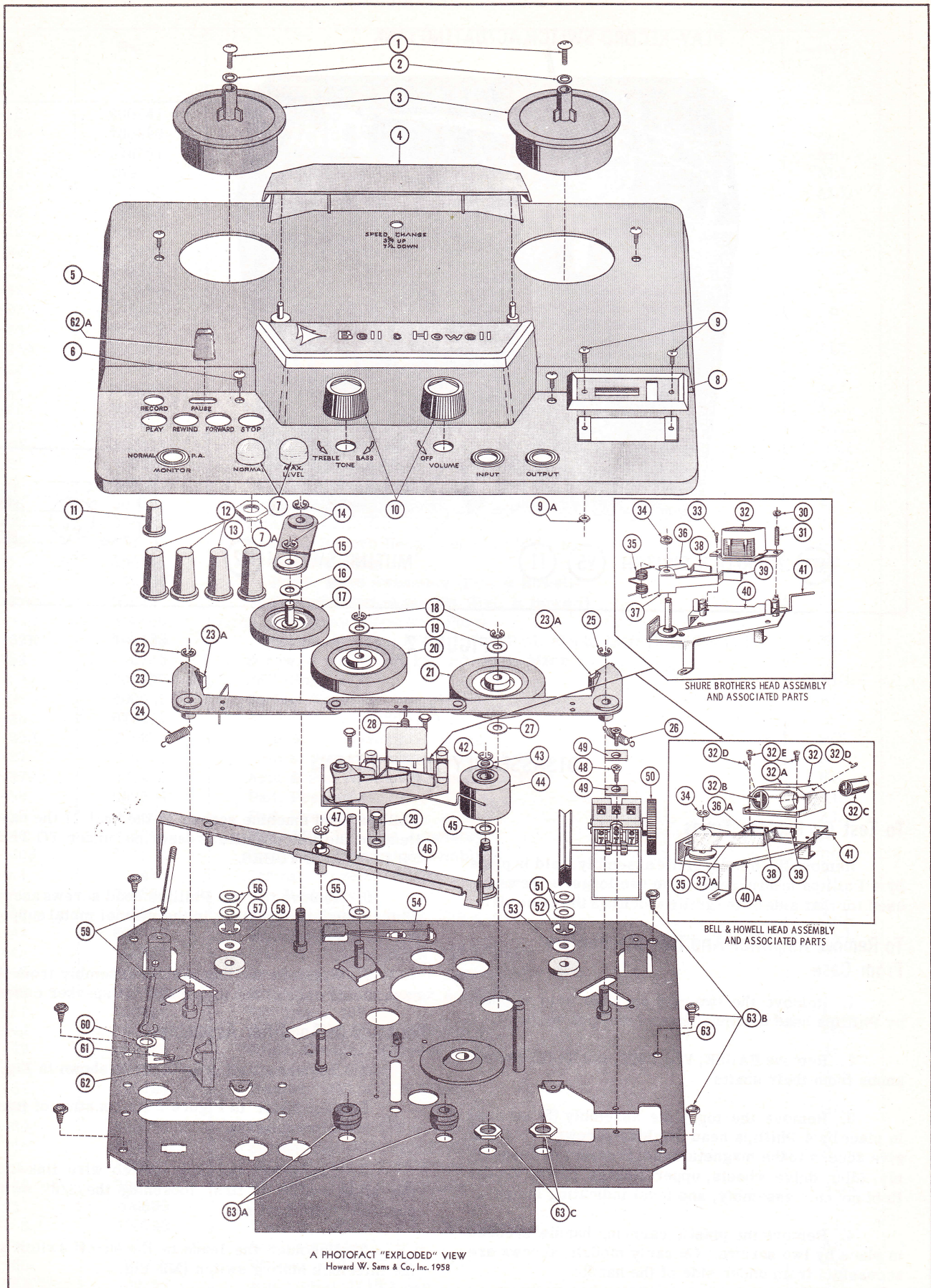
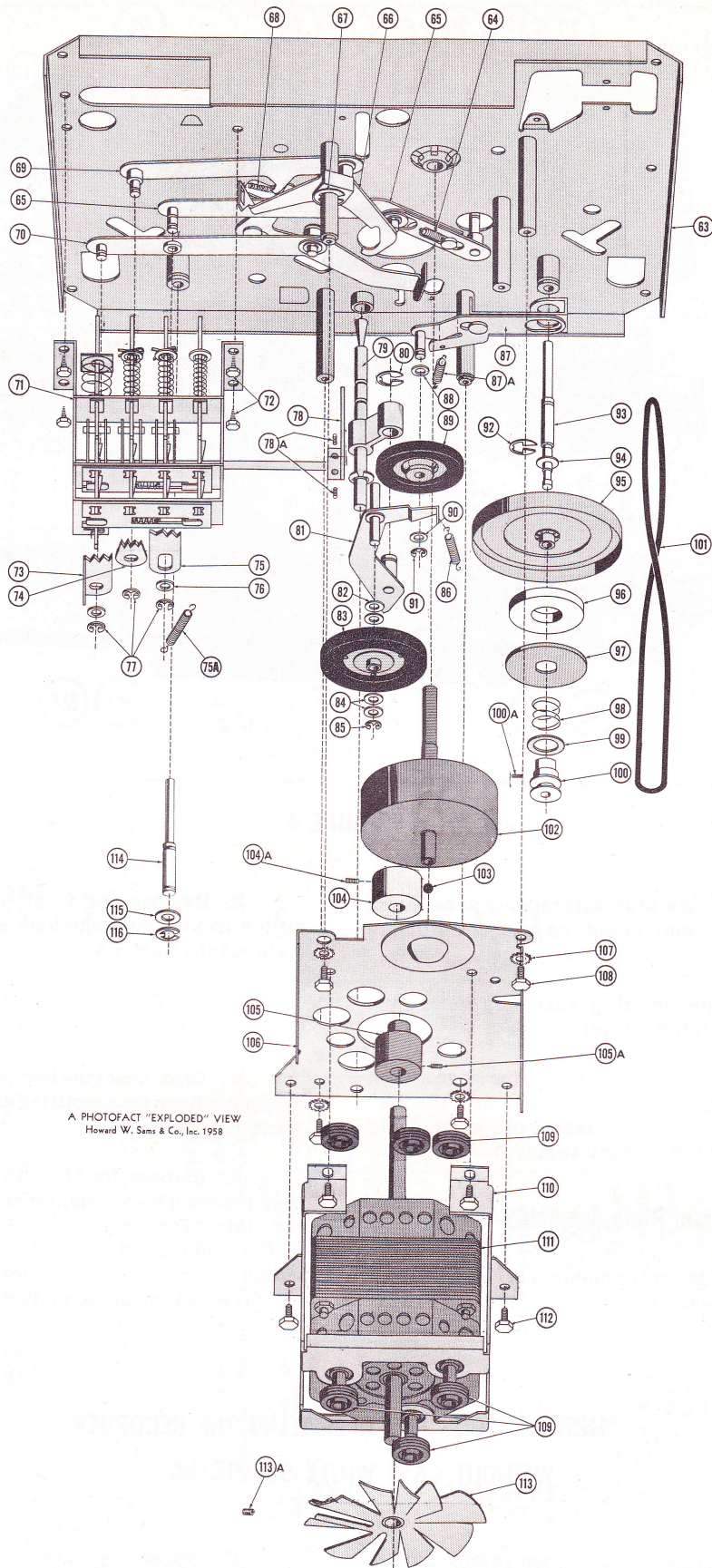


FIG. 3A. EXPLODED VIEW OF PARTS ABOVE MECHANISM PLATE.



A PHOTOFAC "EXPLODED" VIEW
Howard W. Sams & Co., Inc. 1958

FIG. 3B. EXPLODED VIEW OF PARTS BELOW MECHANISM PLATE.

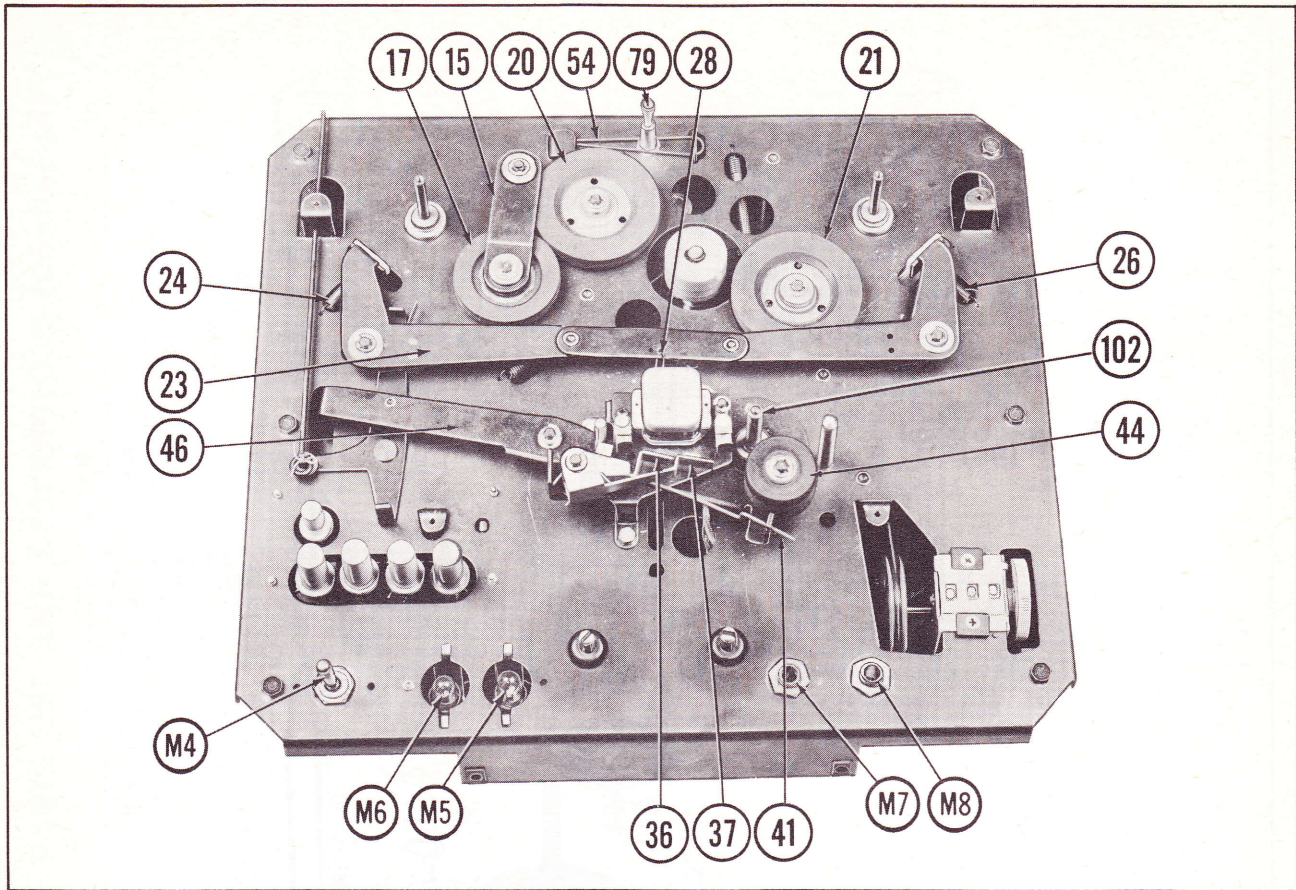


FIGURE 4

5. Remove the six 1/4" self tapping screws and flat washers along the bottom and top edge of the printed circuit board.

6. Withdraw the amplifier assembly, using care not to damage the printed circuit board.

NOTE: After reassembly adjust the slide switch position and secure the adjustment with the 3/8" nut so that the slide switch makes proper contacts when changing from record to play back position.

Removal Of Mechanism Plate Assembly

1. Disconnect the drive motor (111) leads by removal of the solderless connectors.

2. Remove the input, output jack and monitor switch locking nuts which hold these components to the main mechanism plate.

3. Remove the two indicator lamp assemblies from the main mechanism plate.

4. Disconnect the two cables of the magnetic head assembly from the amplifier and free these cables from their cable clamps.

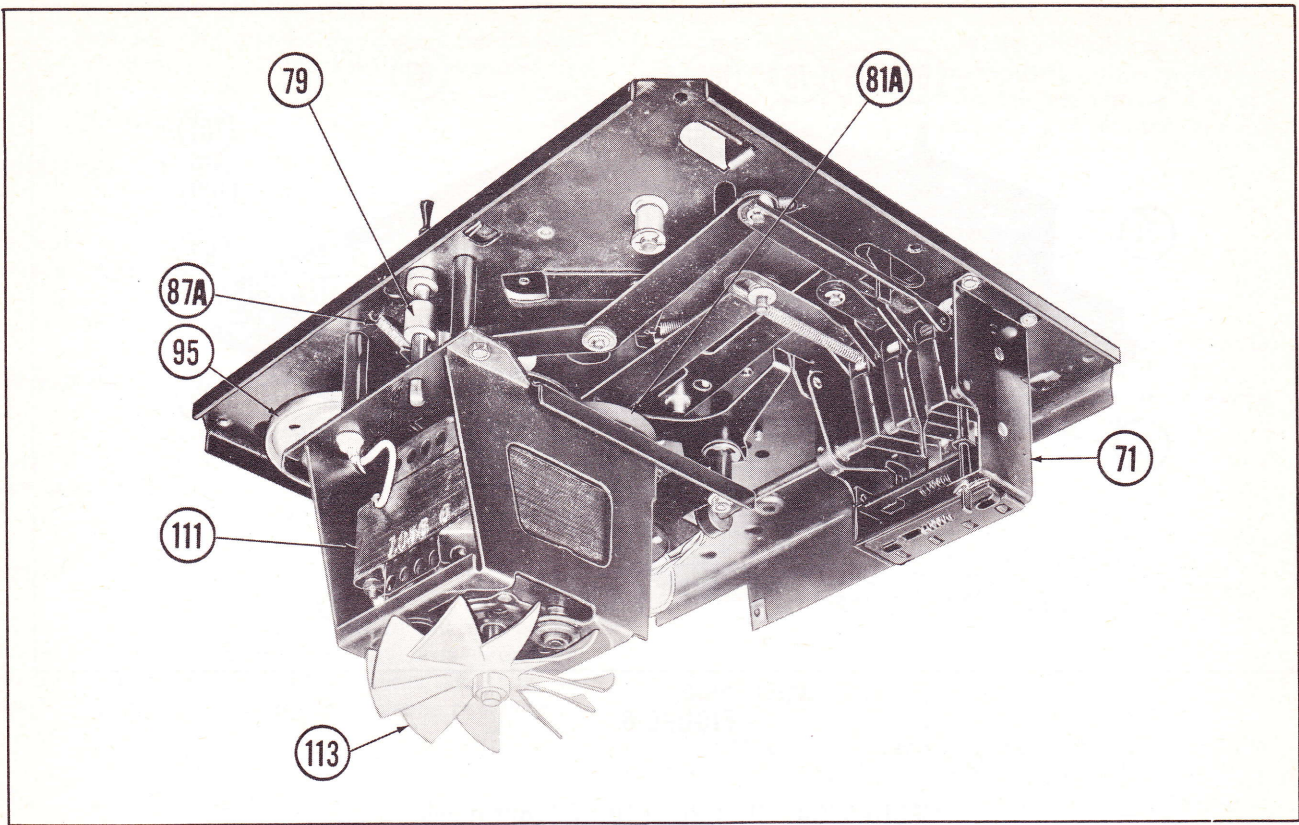
5. Remove the six 5/16" self tapping screws that hold the main mechanism plate to each speaker mounting plate. The main mechanism plate can now be withdrawn, and the drive motor, clutch assembly, and push button control switches from the linkage system may be inspected, cleaned, and adjusted if necessary.

INSTRUCTIONS FOR OPERATING THE RECORDER WITHOUT CASE WHILE SERVICING

In order to operate the unit when removed from the case it is necessary to close the interlock switch. Use a wedge to hold the switch in a closed position. Be sure to restore the interlock to normal condition before reassembling the recorder.

The speaker cones should be protected by covers of cardboard or masking tape.

The unit should be operated in an upright position or otherwise supported in such manner that the ventilating fan is not obstructed during operation.



INTRODUCTION

Troubles that may be encountered are arranged in mechanical and electrical groupings, depending upon origin. Due to the fact that some defects in reproduced sound are actually of mechanical origin, troubles such as "Wow" or "Flutter" and off pitch conditions are

listed as mechanical troubles.

Wherever reference is made to the use of lubricants, apply only enough lubricant to coat the moving surfaces. All excess lubricant should be removed.

MECHANICAL TROUBLE CHART

SYMPTOM	POSSIBLE CAUSE	REMEDY
Noisy push button operation.	Lack of lubrication.	Apply Bell & Howell # Spec. 1543 oil (Hodson Gear Oil) to neoprene pads on push button shafts.
Vibration noise emanating from case when in fast forward or rewind position.	Top plate assembly seated improperly.	Remove top plate assembly (5 Fig. 3A) and bend the front end of top plate down slightly so when secured in place the front edge will seat against the tape recorder bottom case assembly.
Volume or tone controls bind and are difficult to turn.	Printed circuit assembly not centered.	Reposition assembly, align shafts into rubber grommets.
	Lack of lubrication or "tacky" condition of rubber grommets.	Check condition of rubber grommets where tone and volume control shafts pass through main mechanism plate. Lubricate rubber grommets with DOW-Corning 200-350CS fluid silicon grease.
Clicking noise when recorder is in fast forward or rewind.	Damaged Veeder Root counter.	Check Veeder Root counter for loose springs or lack of lubrication. If necessary, lubricate gear teeth with DOW-Corning 200-350CS fluid silicon grease.

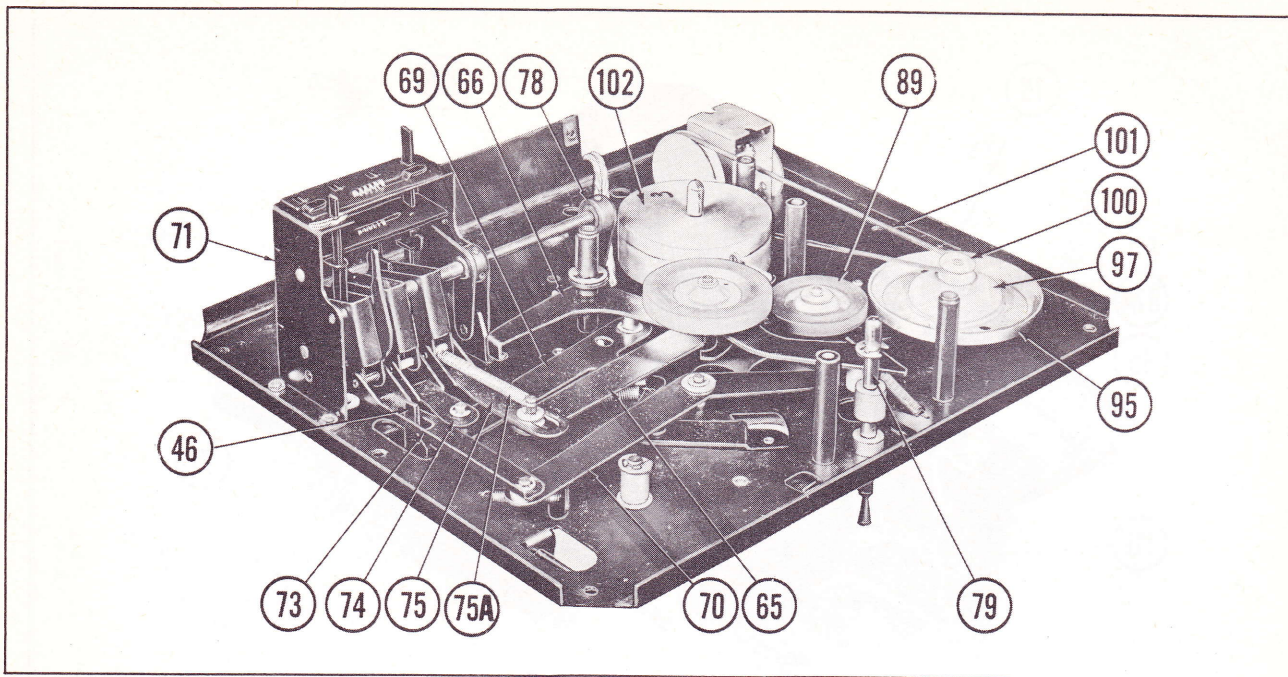


FIGURE 6

MECHANICAL TROUBLE CHART (Continued)

SYMPTOM	POSSIBLE CAUSE	REMEDY
Case upper lid assembly will not lock properly.	Alignment of locking prongs incorrect.	Bend the two locking prongs riveted to the upper lid assembly approximately ten degrees inward and to the right or left as required to make proper contact with the lock catches in the lower case assembly.
Speed change shaft binding.	Lack of lubrication.	Apply lubricant, Bell & Howell Spec. #1544 (Hodson non-melting white lubricant) to speed change shaft.
Drive erratic on both speeds.	Position of drive pulley (105 Fig. 3-B) incorrect.	Check position of drive pulley on drive motor. Loosen Allen screw and position bottom of drive pulley to distance of .218 to top of motor shell.
Thumping or scraping noise when in forward or rewind position.	Position of forward and rewind pulley (104 Fig. 3-B) incorrect.	If position of forward and rewind pulley is too high on its shaft, it will scrape the underside of the top plate assembly; if position of pulley is too low, the Allen screw opening in the pulley will strike against the rubber molded wheel. Readjust as necessary.
Take up reel doesn't revolve in play or record position.	Take-up idler spring (87A Fig. 3-B) off or broken.	Replace.
	Oil on take up idler rim (95 Fig. 6).	Moisten cloth in alcohol and clean surface of rubber rim.
	Clutch slipping on clutch wheel assembly.	Reposition clutch pulley (100 Fig. 6) on shaft and tighten Allen screw.
Take up reel does not revolve in fast forward position.	Oil on rim of fast forward idler wheel (21 Fig. 4).	Moisten cloth in alcohol and clean surface of rubber rim.
	Fast forward lever spring (75A Fig. 6) off or broken.	Replace.

MECHANICAL TROUBLE CHART (Continued)

SYMPTOM	POSSIBLE CAUSE	REMEDY
	Fast forward idler spring (64 Fig. 3-B) off or broken.	Replace.
Supply reel does not revolve in rewind position.	Oil on rewind idler wheel (17 Fig. 4) or rewind drive wheel (20).	Moisten cloth in alcohol and clean surfaces of rubber rims of (17) and (20).
	Rewind idler spring (68 Fig. 3-B) off or broken.	Replace.
Reels do not stop when stop button is depressed.	Brake actuating spring (28 Fig. 3-A) off or broken.	Replace.
	Brake lining worn.	Replace. (See Adjustments & Tests.)
	Brake lever (78 Fig. 6) loose on shaft.	Reposition brake lever (78) and tighten Allen screws.
Counter mechanism does not operate.	Defective counter (50 Fig. 3-A).	Check gear teeth in counter for damage. Replace if necessary.
	Counter belt (101 Fig. 7) off or broken.	Replace.
Wow; flutter or chirps.	Improper pressure between capstan (102 Fig. 4) and pressure roller (44).	See Adjustments & Tests.
	Excessive takeup tension.	See Adjustments & Tests.
	Counter (50 Fig. 7) binding.	Check for chips or dirt in gears and for scored shaft. Clean and lubricate. Use Dow-Corning 200-350CS fluid silicon grease.
	Dirty pressure pads (38 Fig. 3A)	Saturate with alcohol. Brush contact surfaces in direction of normal tape travel.
	Pressure roller (44 Fig. 3A) binding on shaft or damaged.	Remove roller and clean bearing with pipe cleaner dampened with alcohol. Clean roller stud, if scored, polish with crocus cloth. Apply a light coating of Hodson 2-478 non-melting grease to the stud before reassembling.
	Scored flywheel shaft (102 Fig. 4) or flywheel shaft bearings.	If shaft is only lightly scored, polish with crocus cloth. WARNING: DO NOT USE EMORY CLOTH. If bearings are scored, drill out rivets, remove bearings and replace them.
	Worn idler wheel assembly (83 Fig. 3-B).	Some dents in the driving surface can be ironed out by pressing the flat side of a screw driver blade against the tire, while the wheel is revolving. If tire is nicked or torn, replace the wheel assembly. Apply a light coating of Hodson 2-478 non-melting grease to the stud, before reassembling.
	Bent fan blades (113 Fig. 5) or bent motor shaft.	Place fan (hub up) on a flat surface. The ends of all blades should contact the surface. If any blades are out of alignment by more than 0.015", reshape those blades. If motor shaft is bent, replace the motor.
	Pitch of sound, from pre-recorded tape is low.	Capstan drive mechanism is slipping. Remove top panel (5 Fig. 3A). Dampen a pipe cleaner with alcohol and clean all driving surfaces. NOTE: All driving surfaces can be reached thru holes in the mechanism plate

BELL & HOWELL MODELS
770, 775G-1, 775G-10

FOLDER 6

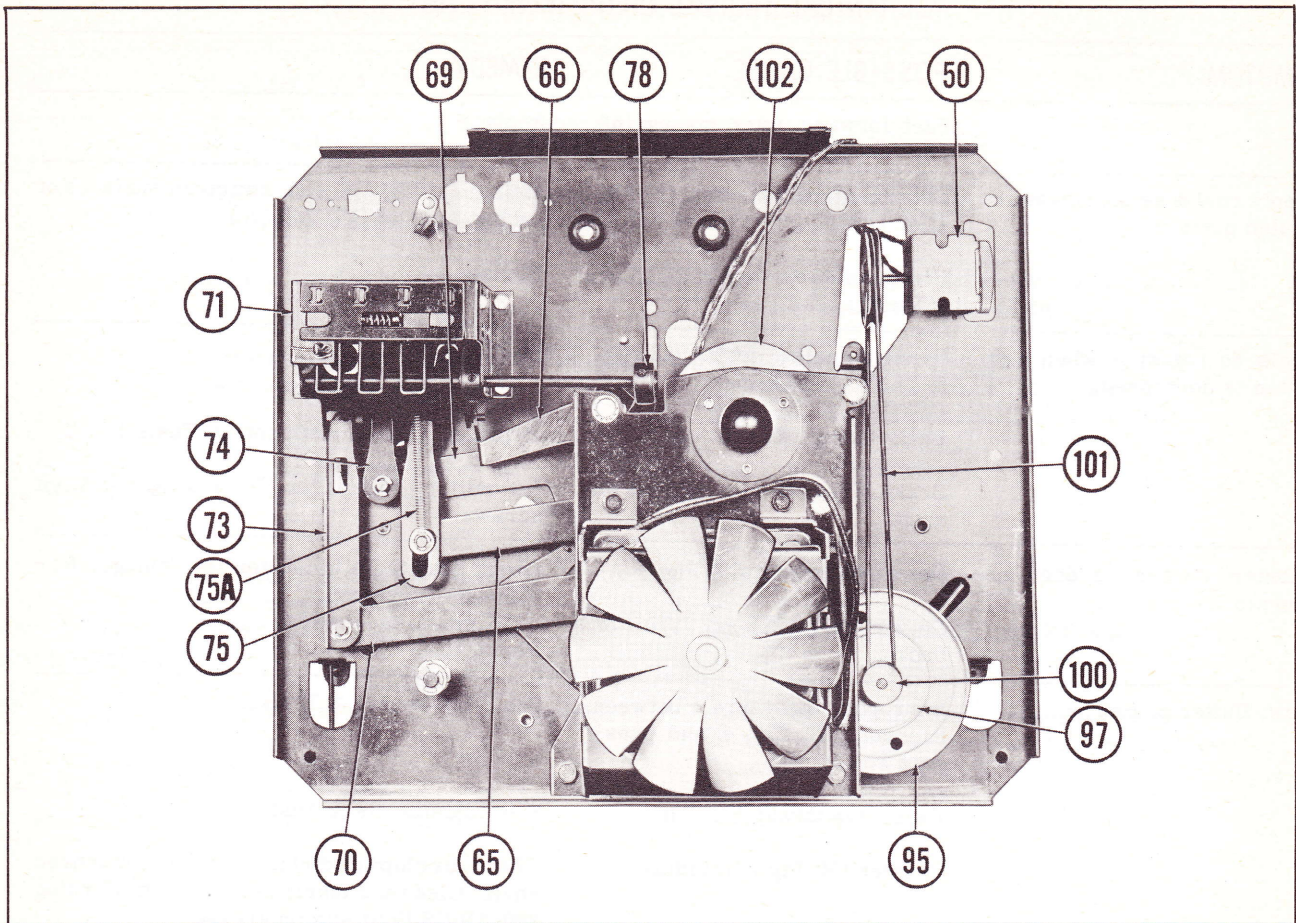


FIGURE 7

MECHANICAL TROUBLE CHART (Continued)

SYMPTOM	POSSIBLE CAUSE	REMEDY
		(63 Fig. 3B). CAUTION: KEEP FINGERS OUT OF ROTATING PARTS.
Loss of high frequencies (Record and playback).	Pressure pads (38 & 39 Fig. 3A) loose or worn.	Check spring tension of pressure pad spring Replace worn pads (see Replacement of Pressure Pads in Adjustments & Tests Section).
	Foreign material collected in tape guide channel.	Remove caked material with wooden or soft plastic probe. Wipe channel with pipe cleaner or cloth dampened with alcohol.
Loss of high frequencies from previously recorded tape.	Azimuth adjustment of head is incorrect.	See Adjustments & Tests.
Rattles.		Use damping fluid.

ELECTRICAL TROUBLE CHART

SYMPTOM	POSSIBLE CAUSE	REMEDY
Recording lamps fail to indicate.	Defective neon lamp. (M5 or M6).	Replace.
	Red lead of muting switch (M2) shorted to ground. Neon lamp socket shorted to ground.	Check circuits with ohm meter.

ELECTRICAL TROUBLE CHART (Continued)

SYMPTOM	POSSIBLE CAUSE	REMEDY
	Cold solder connection to record-play-back switch (M1).	Reheat solder connection.
Motorboating.	12AX7 tube defective or not fully seated in socket.	Check and replace as necessary.
Right speaker dead.	Left speaker lead shorted to ground.	Make visual check.
Distortion.	Black lead of speaker harness loose.	Make visual check.
	Defective 12AT7 or 6CM6 tube.	Test and replace if necessary.
	Defective record level neon lamp.	Test and replace if necessary.
	Hum control (R3) center rotating section shorted to ground. Resistance of center section to ground should be 270 ohms.	Check with ohm meter.
	Resistor R16 (22K ohm in plate circuit of 12AT7) open.	Check with ohmmeter.
Low Output.	Recording level too low.	See Power Output test under Adjustments & Tests. Check microphone.
	Record current too low.	See Adjustments & Tests.
	Foreign material on tape guide or head.	Remove.
	Worn head pads or insufficient pressure.	See "Loss of High Frequencies".
Low Output and Distortion.	No bias or low bias.	Oscillator coil open. Shorted erase head. Record-Play switch (M-1) not functioning. Check bias. (See Adjustments & Tests).
	Foreign material on tape guide or head.	Remove.
Poor low frequency response.	Defective magnetic head assembly.	Replace.
Low sound output.	Tone control (R2) shorted to ground at the capacitor network C12 and C13.	Check with ohmmeter.
6X4 rectifier plates red hot.	Red B leads of power transformer shorted to ground.	Check with ohmmeter.
	B+ filter capacitor shorted.	Check sections A and B of filter capacitor C1 and replace if necessary.
Hum.	Open hum adjusting control (R3).	Replace.
	Printed circuit wiring from output transformer frame to filter capacitor open.	Check with ohmmeter.
	Cold solder connection of capacitor C4, .1 mfd (in input circuit).	Reheat the solder connections.
	Cold solder connection of output transformer frame.	Reheat the solder connection.
	Cold solder connection of rectifier tube retaining spring where attached to power transformer shell.	Reheat the solder connection.

**BELL & HOWELL MODELS
770, 775G-1, 775G-10**

FOLDER 6

ELECTRICAL TROUBLE CHART (Continued)

SYMPTOM	POSSIBLE CAUSE	REMEDY
	Defective tubes.	Check and replace as necessary.
	12AX7 tube shield missing or not making firm contact against ground lip.	Replace shield; bend lip to make firm contact.
	AC line cord polarity.	Reverse polarity of AC line cord in wall receptacle to obtain minimum hum.
	Condition and/or position of felt erase pad improper.	The top of the felt pad must pass just beneath the magnetic head shield front edge cut out. If frayed, the felt pad should be replaced.
Internal or external speakers do not operate.	Defective monitor switch (M4).	Check with ohmmeter.
	Defective muting switch (M2).	Check with ohmmeter.
Excessive hiss in record and playback.	Noisy 12AX7 and/or 12AT7.	Substitute new tubes and test for noise.
	Magnetized Record-playback head.	Use head demagnetizer on head. (Note: it is considered good practice to demagnetize heads after each 10 or 20 hours of use.)
Plays back pre-recorded material but will not record.	Defective 6S4A tube.	Test and replace if necessary.
	Defective oscillator coil (L1).	Test and replace if necessary.

ADJUSTMENTS AND TESTS

Interlock Adjustments

The interlock switch is a DPDT spring loaded switch, which opens the AC input line when the bottom grille assembly is removed from the case. If this switch fails to operate properly it may be due to poor lead contact connections or to mechanical reasons.

The switch should close when the bottom grille is secured in place. If it fails to do so, check the height of the switch arm which operates the interlock. The end of this arm should be from 7/8" to 1" above the grille assembly for proper switch operation.

Improper Tracking Of Tape Reels

The feed and take-up plastic reel spindles are identical and are held in place with Phillips head screws and flat washers. The reel spindles are mounted on a flanged shaft. If the plastic reel spindles wear and the tape scrapes on the reels, shim washers can be added between reel and flange shaft until the reels are in proper alignment. The PLAY button should be depressed

whenever the spindles are being replaced in order to prevent damage to the cork brake lining.

Adjustment Of The Recording Case Locking Mechanism

1. Remove the two plastic latch release knobs by pulling them straight out, away from the case.

2. Remove the two Phillips head machine screws visible through the small openings in the metal handle bracket.

3. Drive out the two roll pins that secure the handle bracket to the two spring loaded shafts by the following method:

a. Place the handle bracket on a firm surface and use a 1/8" hard steel rod to drive out the roll pins. Do not use a pointed rod or the roll pins will spread and be very difficult to remove.

b. Remove the cover from the locking mechanism and inspect the linkage for freedom of movement. If lubrication is required use Bell & Howell Spec. #1544 (Hodson Non-Melting White Lubricant).

Replacement Of Brake Linings

If damage or wear makes it necessary to replace the brake linings, scrape the old lining from the metal surface. Apply Ambroid liquid cement (Mfd. by Ambroid Company, Boston, Mass.) to the metal surfaces and set the new cork linings in place.

Replacement Of Pressure Pads

Worn pressure pads may cause loss of volume and a falling off of higher frequencies. The two pressure pads are identical. To replace, scrape off the old pads and affix the new pads with Ambroid liquid cement.

Pressure Roller Against Capstan

Connect an inch-ounce scale to end of pressure arm assembly (46 Fig. 4). Pull the pressure roller free from the capstan. If reading is less than 16 in.-oz., bend the spring (41) in order to increase pressure.

Take Up Tension Adjustment

Place an empty 7" reel on the take up spindle. Attach a short loop of string to the outside reel edge. Connect a gram scale, Chatillon horizontal type (with a minimum reading of 60 grams) to the string. Hold the scale parallel to the recorder and at right angles to the take up spindle. Depress the "play" button and note the reading. If the reading is over or below the tolerance listed herein, remove the mechanism from the case assembly as described under "Disassembly Instructions".

Next remove the back mechanism plate secured in place by the six Phillips head sheet metal screws. Disengage the counter drive belt from the clutch pulley (100 Fig. 5B). Remove the pulley secured by a 8/36 x 3/16" set screw. The tension spring (98 Fig. 3B) and felt lining (96 Fig. 3B) can now be slipped off the take up spindle (93 Fig. 3B). If the reading was over 60 grams, the felt should be saturated in a solution composed of one part Standard Oil Company (New Jersey) turbine oil #31 and 15 parts carbon tetrachloride. After saturation allow the felt to dry for 30 minutes before reassembly of the clutch. If the reading was less than 30 grams, replace the tension spring and/or felt as required.

After reassembly engage the counter drive belt properly in order that the counter "counts" up when the "play" or "forward" button is depressed.

Recheck the tape recorder for proper operation after service has been completed.

Azimuth Adjustments

Thread recorder with azimuth test tape of 1.0 mil. wavelength. (Available from Toogood Recording

Company., 221 N. LaSalle Street, Chicago, Ill.) Turn volume control to "ON". While recorder is warming up, connect an AC voltmeter (0-5 volt range) to a standard phone plug and drop the plug into the "Output" jack. (Do not insert plug all the way into the jack, or the speakers will be disconnected).

Place the speed change shaft (79 Fig. 4) in the 7 1/2 I.P.S. position and proceed as follows:

Shure Head

Start recorder (Play) and adjust volume control to produce a voltmeter reading of approx. 1 volt. Rotate azimuth adjusting screw (33 Fig. 3A) and observe meter reading. Adjust for maximum output.

Bell & Howell Head

Loosen head locking setscrew (32D Fig. 3A). Grasp the fin at the rear of the head with long-nose pliers or tweezers and rotate the head to obtain maximum output. Hold head in position, while tightening the locking setscrew.

Power Output

Make a test recording of a 400 cycle or 1000 cycle tone at the level where the "Distort" lamp flickers very faintly on the Model 775 or where the "Record" lamp flashes strongly on the Model 770. Connect an AC voltmeter, oscilloscope and 6 ohm 5 watt resistor across a standard phone plug and insert plug into the "Output" jack. Depress "Play" button, adjust volume control and observe distortion, note output. Output voltage should be at least 3.5 volts (5% harmonic distortion level).

Signal To Noise Ratio

Make a test recording of a 1000 cycle tone at 7 1/2 I.P.S., set oscillator level low enough so that "Volume" control knob can be turned to at least 3/4 open position. Disconnect oscillator and rewind about 1/2 of recorded tape (do not touch volume control). Re-record over last 1/2 of tape without any signal. Rewind all of tape. Connect 6 ohm 5 watt resistor and VTVM across a phone plug and insert plug in "Output" jack. Depress "Play" button and adjust volume control to produce an output of 1 volt. When re-recorded (erased) section of tape reaches head, output should drop at least 36 DB.

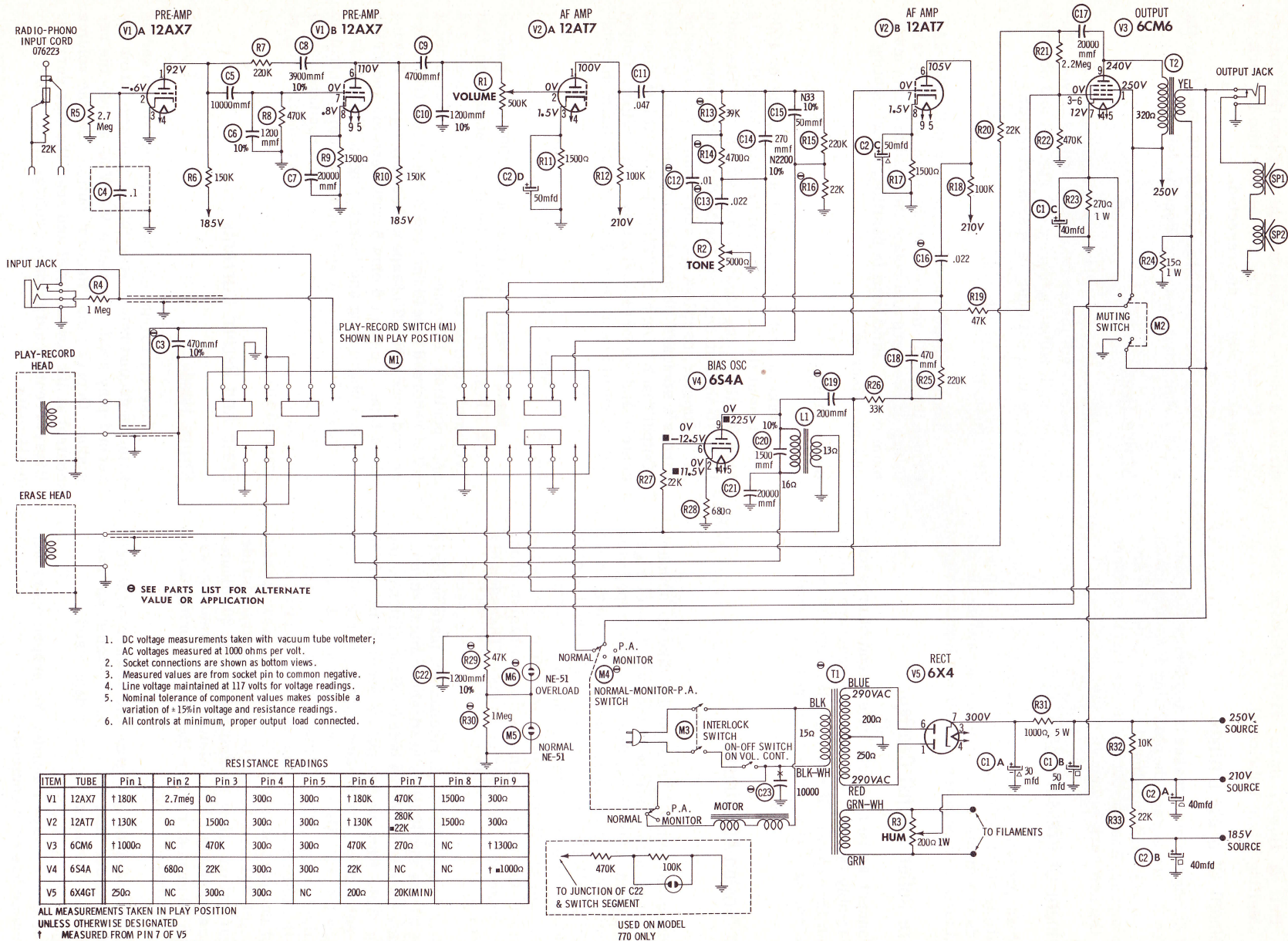
Erase And Record Currents

Shure Head

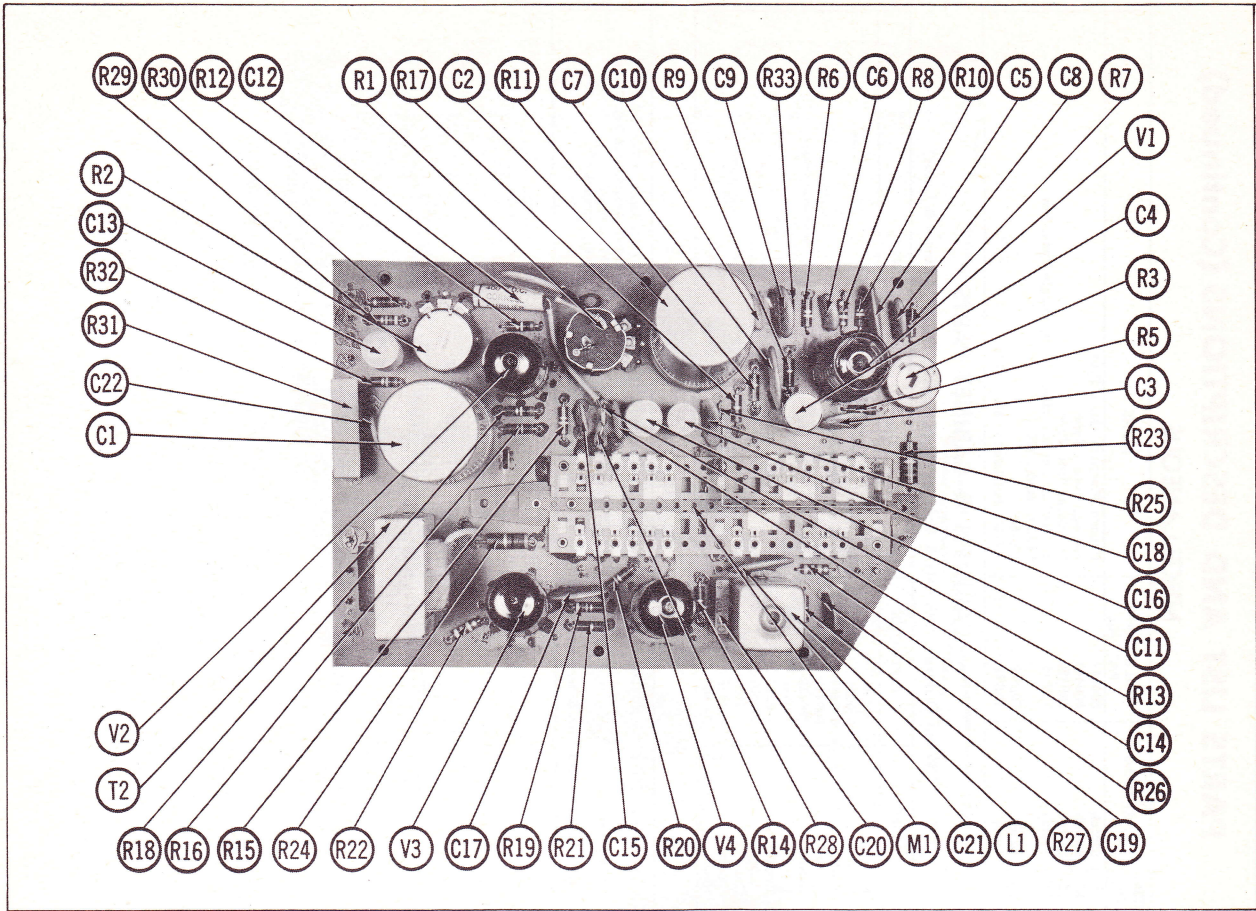
Insert a 10 ohm non-inductive resistor in series with the ground return lead (black or orange) from the record-play head. Connect a V.T.V.M. across the resistor. Depress the "Record" button. Set the volume control at its lowest level and read the bias current. Bias current should produce a voltage reading of 0.011 - 0.016 volts.

Remove 6S4A tube, connect an audio oscillator (set at 1000 C.P.S.) to the input of the recorder and adjust oscillator input so that "Distort" lamp will flash when volume control is 3/4 open.

SCHEMATIC OF 770, 775G-1 AND 775G-10 AMPLIFIERS.



CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS TUBES (GENERAL ELECTRIC, PENNSYLVANIA)

ITEM No.	USE	TYPE	NOTES	ITEM No.	USE	TYPE	NOTES
V1	Preamplifier	12AX7		V4	Bias Osc. Rectifier	6S4A	
V2	AF Amplifier	12AT7		V5		6X4GT	
V3	Audio Output	6CM6					

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP. VOLT.	REPLACEMENT DATA					SPRAGUE PART No.
		Bell & Howell PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	
C1A	450	701800					R2684 *
C1B	50						
C1C	350						
C2A	40	701681					R2683 *
C2B	40						
C2C	300						
C2D	40						
C2E	300						
C2F	25						

* Non-Catalog Item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP. VOLT.	REPLACEMENT DATA							NOTES
		Bell & Howell PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.		
C3	470	701796	D6-471	5R5T47	ACE401	MS-347		10% ①	
C4	.1	701808	P288N-1	BC2PJ	DC511	2SE-P10			
C5	10000	701793	BPD-01	BYA6S1		5HK-81		10%	
C6	1200	701790		IR5D12		MS-212		10%	
C7	20000	701794	BPD-02	BYB6S2		5HK-52		10%	
C8	3900	701791		IR5D39		MS-239		10%	
C9	4700	701792	BPD-0047	BYA10D47	UC-5247	5HK-D47		10%	
C10	1200	701790		IR5D12		MS-212		10%	
C11	.047	701797	P488N-047	BC6S47J	ACE6147	4SE-S47		② ③	
C12	.01	701694	P288N-01	CUB2S1	GEM-211	2TM-S1		② ③	
C13	.022	701798	P488N-022	BC6S22J	ACE412	4SE-S22		② ③	
C14	270	701789		BC6S27J		4SE-S22		② ③	
C15	50	701788		BC6S50J	ACE412	4SE-S22		② ③	
C16	.022	701798	P488N-022	BPD-02	UC-532	5HK-52		④	
C17	20000	701794		BYB6S2		5GA-T2		⑤	
C18	470	701796	BPD-0002	LI0T2		MS-215		⑤	
C19	200	701802	1464-0015	IR5D15		5HK-52		⑤	
C20	1500	701799	BPD-02	BYB6S2		MS-212		⑤	
C21	20000	701794		IR5D12		5HK-81		⑥	
C22	1200	701790	BPD-01	BYA6S1	DC511				
C23	10000	701793							

① Models 775-G-10 and 770 use 270mmfd 10% in this application (Part # 701788)

② Not used in Models 775-G-10 and 770.

③ Models 775-G-10 and 770 use .047 @ 400V in this application (Part # 701797)

④ Some versions use .033mfd @ 400V in this application.

⑤ Models 775-G-10 and 770 use 250mmfd 1000V in this application (Part # 800669)

⑥ Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA				INSTALLATION NOTES
		Bell & Howell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	
R1A	500K	702008				Volume
R2	5000Ω Switch	702007				Tone
R3	200Ω	701849				Hum Adj. Wire Wound

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		Bell & Howell PART No.	NOTES	ITEM No.	RATING		Bell & Howell PART No.	NOTES
	OHMS	WATT				OHMS	WATT		
R4	1meg		701829		R19	47K		701838	
R5	2.7meg		701990		R20	22K		701820	
R6	150K		701834		R21	2.2meg		701940	
R7	220K		701819		R22	470K		701835	
R8	470K		701835		R23	270Ω	1	701836	
R9	1500Ω		701857		R24	15Ω	1	701822	
R10	150K		701834		R25	220K		701819	
R11	1500Ω		701857		R26	33K		701840	
R12	100K		701826	①	R27	22K		701820	
R13	39K		701983	②	R28	680Ω		701831	
R14	470Ω		701859		R29	47K		701838	④
R15	220K		701819		R30	1meg		701828	⑤
R16	22K		701820	③	R31	1000Ω	5	702010	
R17	1500Ω		701857		R32	10K		701832	
R18	100K		701826		R33	22K		701820	

- ① Not used in Models 775-G-10 and 770
- ② Models 775-G-10 and 770 use 47K in this application (Part #701838)
- ③ Models 775-G-10 and 770 use 15K in this application (Part #701954)
- ④ Model 770 use 470K in this application (Part #701835)
- ⑤ Model 770 use 100K in this application (Part #701826)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	Bell & Howell PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC ③.44A	580VCT ③.060A	6.3VAC ③.1.6A	076221 (777-39)						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Bell & Howell PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5000Ω	6-8Ω	800566 (777327)	Z10040	A-2900①	AU-608①	A-3850①	24S60①	S-51X①	① Use Original Channel Frame

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		Bell & Howell PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Bias Osc.	800556				

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Bell & Howell PART No.	QUAM PART No.	
SP1	5 1/4"	PM	3-4Ω	800445 (777-45)	52A1	
SP2	5 1/4"	PM	3-4Ω	800446 (777-47)	52A1	

PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	Bell & Howell PART No.	NOTES
M1	Switch	800448	Record-Playback, Slide Type
M2	Switch	800447	Muting, Rotary Type
M3	Switch	800450	Interlock, Snap Type
M4	Switch	701109	3 Position, Normal-Monitor-Pa, Toggle Type, Not Used in Model 770
M5	Lamp	701173	NE-51
M6	Lamp	701173	NE-51, Not Used in Model 770

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	701508	2 Used, Tone and Volume
Knob	040020	Catch Release, Not Used in Model 770
Knob	076265	Pause, Not Used in Model 770
Button	800440	Record
Button	800439	Push
Button	800441	Stop
Push Button	076263	Ass'y.
Case	040007	Ass'y, Not Used on Model 770
Case	076411	Ass'y, Model 770
Handle	430038	Not Used on Model 770
Handle	800860	Model 770

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) Use BELDEN No. 8401

Adjust volume control so that "Normal" lamp flashes, voltage across resistor should be 0.00033 - 0.00047 volts. Advance volume control until "Distort" lamp flashes; voltage should be 0.00065 - 0.00095 volts. NOTE: If V.T.V.M. will not indicate these low voltages, connect an oscilloscope in place of the meter and adjust Vertical gain of scope to produce a pattern of suitable amplitude; transfer scope leads to the low (10 ohm) section of a 1000/1 voltage divider, bridge complete divider with V.T.V.M. and oscillator. Adjust output of oscillator to produce the same scope deflection - voltage produced by record current will be approx. 1/1000 of meter reading.

Replace 6S4A tube in socket and insert a 1 ohm non-inductive resistor in series with the ground return (blue or black) lead from the erase head. Bridge re-

sistor with a V.T.V.M. Depress "Record" button and measure the erase current. Current should produce a voltage of 0.04 volts minimum.

Bell & Howell Head

Use the same procedures as for Shure heads except insert 100 ohm non-inductive resistor in place of 10 ohm resistor. Bias current will produce a voltage of 0.013 - 0.018 volts. "Normal" lamp will flash at 0.0025 - 0.0035 volts. "Distort" lamp will flash at 0.0052 - 0.0068 volts. "Record Level" lamp on Model 770 will flash at 0.0036 - 0.005 volts.

Erase current will produce a voltage of 0.0042 volts across a 1 ohm resistor.

PARTS LIST

The following pages list, by part number and name, parts of the Tape Recorders covered in this manual. To help make positive identification of parts when ordering replacements, order by part number and model number and give serial number of Recorder.

The "Usable On Code" column refers to the model or models in which each part is used. Wherever "ALL" appears in this column, that particular part is used in all three models covered by this manual. Otherwise, the code is as follows:

775-G-1 Shure Head Model - Code A
 775-G-10 Bell & Howell Head Model - Code B
 770 Bell & Howell Head Model - Code C

MECHANICAL PARTS LIST

Fig. & Index No.	Part No.	Description	Usable on Code.
5A-1	700245	Screw, 4 - 40 x 1/4 Truss Head Phillips	ALL
" -2	700716	Washer, .116 x .281 x .020	ALL
" -3	800423	Spindle, Reel	ALL
" -4	800795	Cover Ass'y., Removable	ALL
" -5	076343	Top Plate Assembly	AB
" -5	076344	Top Plate Assembly	C
" -6	700245	Screw, 4 - 40 x 1/4 Truss Hd. (Attaching Parts)	ALL
" -7	800574	Cap, Neon Plastic	ALL
" -7A	700477	Nut, Hex., 9/16 - 27 (Attaching Part)	ALL
" -8	800573	Escutcheon, Counter	AB
" -9	700245	Screw, 4 - 40 x 1/4 Truss Hd. (Attaching Parts)	AB
" -9A	700550	Nut, Tinnerman (Attach. Parts)	AB
" -10	701508	Knob, Tone & Volume	ALL
" -11	800440	Button, Record	ALL
" -12	800439	Button, Push	ALL

MECHANICAL PARTS LIST (Cont.)

Fig. & Index No.	Part No.	Description	Usable on Code.
5A-13	800441	Button, Stop	ALL
" -14	700890	"E" Ring, Retaining .187	ALL
" -15	076191	Rewind Idler Arm Assembly	ALL
" -16	700797	Washer, .191 x 7/16 Fibre	ALL
" -17	076183	Idler, Second Rewind	ALL
" -18	700890	"E" Ring, .187	ALL
" -19	700797	Washer, .191 x 7/16 Fibre	ALL
" -20	076180	Idler Wheel, Rewind Drive	ALL
" -21	076239	Idler Wheel, Fast Forward	ALL
" -22	700890	"E" Ring, .187	ALL
" -23	076190	Brake Assembly	AB
" -23	076402	Brake Assembly	C
" -23A	800478	Brake Lining	ALL
" -24	800536	Spring, Brake	ALL
" -25	700890	"E" Ring, .187	ALL
" -26	800536	Spring, Brake	ALL
" -27	700797	Washer, .191 x 7/16 Fibre	ALL
" -28	800572	Spring, Brake Actuating	ALL
" -29	700343	Screw, #6 x 1/4 Hex. Hd. Sht. Metal	ALL
" -30	700897	"E" Ring, .437 Shaft	A
" -31	800546	Spring, Azimuth	A
" -32	076195	Azimuth Plate (Record & Erase Head)	A
" -32	076415	Erase & Record Head Assembly (Bell & Howell)	BC
" -32A	800645	Base Housing	BC
" -32B	076178	Erase Head Assembly (Bell & Howell)	BC
" -32C	076179	Record Head Assembly (Bell & Howell)	BC
" -32D	700440	Set Screw (Attaching Part)	BC
" -32E	700188	Screw, 6 - 32 x 1/4 Fil. Hd. Phil. Mach. (Attaching Part)	BC
" -33	700183	Screw, 4 - 40 x 3/8 Fil. Hd. Phil. Mach.	A
" -34	700890	"E" Ring, .187	ALL
" -35	800023	Spring, Torsion	ALL
" -36	076212	Arm & Pad Assembly, Erase	A
" -36A	076273	Arm & Pad Assembly, Erase	BC
" -37	076232	Arm & Pad Assembly, Record & Play	A
" -37A	076274	Arm & Pad Assembly, Record & Play	BC
" -38	800564	Pad, Pressure	ALL
" -39	800564	Pad, Pressure	ALL
" -40	076194	Head Mtg. Bracket Assembly	A
" -40A	076272	Head Mtg. Bracket Assembly	BC
" -41	800476	Spring, Pressure Roller	ALL
" -42	700890	"E" Ring, .187	ALL
" -43	700806	Washer, Nylon, .191 x .375 x .015	ALL
" -44	800714	Pressure Roller	ALL
" -45	700807	Washer, Nylon, .257 x .437 x .015	ALL
" -46	076185	Pressure Roller Lever Assembly	AB
" -46	076326	Pressure Roller Lever Assembly	C
" -47	700890	"E" Ring, .187	ALL
5A-48	700088	Screw, Flat Hd., 4 - 40 x 1/4	AB
" -49	800599	Clips, Counter Mounting	AB
" -50	076261	Counter Assembly	AB
" -51	700797	Washer, .191 x 7/16 Fibre	ALL
" -52	700889	"E" Ring, .250	ALL
" -53	700798	Washer, .265 x 1/2 x .030 Fibre	ALL
" -54	800587	Spring, Speed Change Shaft	ALL
" -55	700797	Washer, .191 x 7/16 Fibre	ALL
" -56	700797	Washer, .191 x 7/16 Fibre	ALL
" -57	700889	"E" Ring, .250	ALL
" -58	700798	Washer, .265 x 1/2 x .030 Fibre	ALL
" -59	800607	Link, Remote Control	AB
" -60	700797	Washer, .191 x 7/16 Fibre	AB
" -61	700553	Pin, Cotter 1/16 x 3/8	AB
" -62	800560	Lever, Pause	AB
" -62A	076265	Knob, Pause	AB

MECHANICAL PARTS LIST (Cont.)

Fig. & Index No.	Part No.	Description	Usable on Code.
5A-63	076189	Mechanism Plate Assembly	AB
" -63	076403	Mechanism Plate Assembly	C
" -63A	701367	Grommets, Rubber	ALL
" -63B	700348	Screws, Hex. Hd. Sht. Mtl.	ALL
" -63C	800728	Nut, Lock, Jack	ALL
5B-63	076189	Mechanism Plate Assembly	AB
" -63	076403	Mechanism Plate Assembly	C
" -64	800548	Spring, Fast Forward Idler	ALL
" -65	076260	Forward Idler Lever Assembly	ALL
" -66	800576	Retractor	ALL
" -67	700894	"E" Ring, .375	ALL
" -68	800477	Spring, Rewind Idler	ALL
" -69	076184	Rewind Lever Assembly	ALL
" -70	076186	Take-Up Arm Assembly	ALL
" -71	076263	Pushbutton Assembly	ALL
" -72	700345	Screw, #10 x 1/4 Hex. Hd. Sht. Metal (Attaching Parts)	ALL
5B-73	076201	Pressure Roller Link Assembly	ALL
" -74	076202	Rewind Lever Link Assembly	ALL
" -75	076200	Forward Lever Link Assembly	ALL
" -75A	800547	Spring, Fast Forward Lever	ALL
" -76	700712	Washer, .196 x 7/16 x .030 Steel	ALL
" -77	700890	"E" Ring, .187	ALL
" -78	800624	Brake Lever	ALL
" -78A	700438	Screw, Set, #6 - 32 x 3/16 Cone Pt. (Attaching Part)	ALL
" -79	076199	Speed Change Shaft Assembly	ALL
" -80	700895	"E" Ring, .312	ALL
" -81	076198	Speed Change Link Assembly	ALL
" -82	700806	Washer, .191 x .375 x .015 Nylon	ALL
" -83	076180	Idler Wheel Assembly, Speed Change	ALL
" -84	700806	Washer, .191 x .375 x .015 Nylon	ALL
" -85	700890	"E" Ring, .187	ALL
" -86	800545	Spring, Take-Up Idler	ALL
" -87	076192	Take-Up Idler Lever Assembly	ALL
" -88	700797	Washer, .191 x 7/16 x .015 Fibre	ALL
" -89	076204	Idler Wheel, Take-Up Assembly	ALL
" -90	700797	Washer, Fibre (Attaching Part)	ALL
" -91	700890	"E" Ring, .187 (Attaching Part)	ALL
" -92	700896	"E" Ring, .437	ALL
" -93	800461	Shaft, Take-Up Spindle	ALL
" -94	700797	Washer, .191 x 7/16 x .015 Fibre	ALL
" -95	076196	Wheel Assembly, Clutch	ALL
" -96	800459	Lining, Clutch	ALL
" -97	800458	Plate, Clutch	ALL
" -98	800460	Spring, Clutch	ALL
" -99	800655	Washer, .484 x 3/4 x .010 Fibre	ALL
" -100	800542	Pulley, Clutch	ALL
" -100A	700424	Screw, Set	ALL
" -101	800544	Belt, Counter	AB
" -102	076231	Capstan & Flywheel Assembly	ALL
" -103	800568	Ball Bearing .1875 Dia.	ALL
" -104	800520	Pulley, Forward & Rewind	ALL
" -104A	700420	Screw, Set, 8 - 32 x 1/4 (Attaching Part)	ALL
" -105	800462	Pulley, Drive	ALL
" -105A	700420	Screw, Set, #8 - 32 x 1/4 (Attaching Part)	ALL
" -106	076188	Sub-Plate Assembly	ALL
" -107	700734	Washer, #10 Ext. Tooth (Attaching Part)	ALL
" -108	700230	Screw, #10 - 32 x 3/8 Hex. Hd. (Attaching Parts)	ALL
" -109	701338	Mount, Rubber Shock	ALL
" -110	076264	Plate Assembly, Motor Mtg.: Includes	ALL
"	800435	Plate, Motor Mtg.	ALL
"	701338	Mount, Rubber Shock	ALL
" -111	701426	Motor, Drive	ALL

BELL & HOWELL MODELS
770, 775G-1, 775G-10

FOLDER 6

MECHANICAL PARTS LIST (Cont.)

Fig. & Index No.	Part No.	Description	Usable on Code.
5B-112	700348	Screw, Sht. Metal, #10 x 1/4 Hex. Hd. (Attaching Part for Motor Mtg. Plate Assembly)	ALL
" -113	701587	Fan, Ventilating	ALL
" -113A	700424	Screw, Set (Attaching Part)	ALL
" -114	800479	Shaft, Spindle Rewind	ALL
" -115	700798	Washer, .265 x 1/2 Fibre (Attaching Part)	ALL
" -116	700889	"E" Ring, .250 (Attaching Part)	ALL
	076284	Back Plate Assembly (Not Shown On Exploded View)	BC
	076209	Back Plate Assembly (Not Shown On Exploded View)	A

ACCESSORIES

Part No.	Description	Usable on Code
800449	Microphone	ALL
701317	Power Cord	ALL
800077	Reel 7"	ALL
076223	Cord, Ass'y. Input (Fits All Models)	B
701014	Plug, 3 Conductor	B
702011	Resistor, Carbon 22K Ω , 1/3 W.	B
701202	Cord, 2 Conductor 72"	B
701039	Clip, Alligator	B

CASE PARTS LIST (NOT SHOWN IN DIAGRAM FORM)

Part No.	Description	Usable on Code.
040007	Case Assembly	AB
430094	Screw #8 - 32 x 3/8" Ph. Rd. Hd. (Case Front to Chassis)	AB
430103	Foot, Plastic	ALL
430093	Screw, 8 - 32 x 7/8" Ph. Rd. Hd. (Attaching Part)	ALL
430092	Screw, #8 - 32 x 5/16" Ph. Rd. Hd. (Rear Bottom To Chassis)	AB
040024	Cover Ass'y., Case	AB
430038	Handle, (Attaching Screws Exposed)	AB
430145	Screw, #10 x 3/8" F-Z Hex Hd. Self Tap. (Attaching Parts)	AB
24736	Nut, Speed (Attaching Parts)	AB
040015	Handle (Attached W/Hidden Rivets) Replace with 430038	AB
076362	Grille Ass'y, Bottom (Less Nameplate)	ALL
430103	Foot, Plastic	ALL
430086	Rivet, Tubular (Attaching Part-Foot)	ALL
430087	Rivet, Tubular (Attaching Part For Nameplate)	ALL
430091	Screw, 8 - 32 x 3/8 Ph. Bd. Hd. Sht. Metal	AB
430102	Nut, Speed #8	AB
040020	Knob, Catch Release	AB
430156	Actuator, Latch L.H.	AB
430157	Actuator, Latch R.H.	AB
430106	Stud (Attaching Part)	AB
11921	Spring, Latch	AB
040026	Baffle Board L.H.	AB
040027	Baffle Board R.H.	AB
430123	Screw, #8 x 3/8 Sht. Mtl. Hex. Hd. (Attaching Part)	AB
800617	Gasket, Speaker	AB
076411	Case, Assembly	C
430103	Foot, Plastic	ALL
430093	Screw, #8 - 32 x 7/8 Ph. Rd. Hd. (Attaching Part)	ALL
800649	Screw, #8 - 32 Ph. Truss Hd. (Attaching Mech. To Case)	C
700545	Nut, Tinnerman - (Attaching Bottom Mech. To Case)	C
800650	Screw, 8 - 32 x 1 1/8" Lg. Oval Hd. Ph. (Attaching Front Mech. To Case)	C
800651	Washer, Finishing (Attaching Front Mech. To Case)	C
076362	Grille Ass'y, Bottom (Less Nameplate)	ALL

CASE PARTS LIST (NOT SHOWN IN DIAGRAM FORM) (Cont.)

Part No.	Description	Usable on Code.
430103	Foot, Plastic	ALL
430086	Rivet, Tubular (Attaching Part - Foot)	ALL
430087	Rivet, Tubular (Attaching - Nameplate)	ALL
800649	Screw, #8 - 32 x 3/4" Truss (Attaching Part - Grille)	C
700545	Nut, Tinnerman (Attaching Part - Grille)	C
800860	Handle, Plastic	C
800862	Post, Handle	C
700666	Washer, 3/16 x 5/8 x .042 (Attaching Part)	C
800803	Screw, #8 - 32 x 5/8 Hex. Hd. (Attaching Part)	C
700739	Washer, Lock, Internal #8 (Attaching Part)	C
800863	Latch, Case	C
800861	Hinge, Case	C
800864	Foot, Glide	C
802770	Baffle, Speaker	C

BELL & HOWELL MODELS
770, 775G-1, 775G-10

FOLDER 6

No.	Title	Date
1	The History of the University of Chicago	1890
2	The University of Chicago Library	1900
3	The University of Chicago Press	1910
4	The University of Chicago Faculty	1920
5	The University of Chicago Students	1930

Page 1