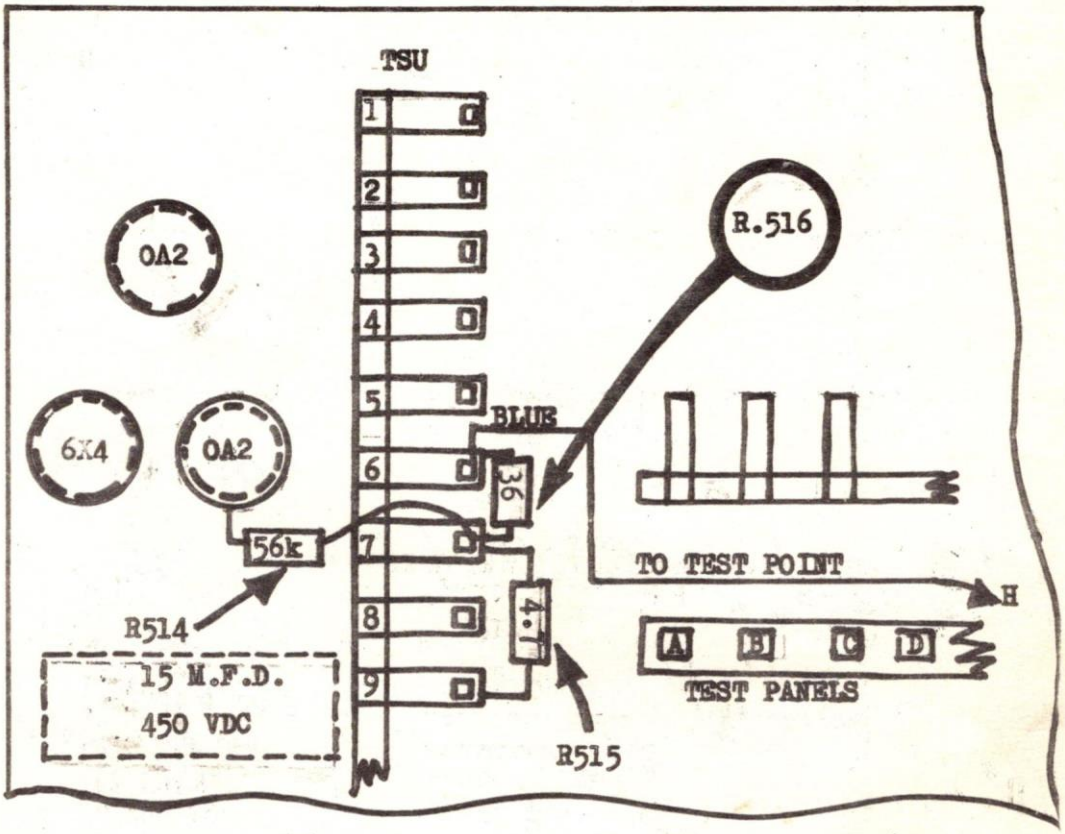
Service Hints

FROM DECEMBER 1962 ISSUE

Seeburg Location Name Panels.

There seems to be uncertainty as to the correct way to insert the plastic letters in the name panel frame, i.e. glossy or matt (painted) side uppermost. The matt or painted side should be uppermost otherwise the paint rubs against the back of the panel as the letters are being inserted and unsightly scratch marks are made.

SERVICE HINTS - ALL MUSIC MAKER SEEBURGS - JAN. 1963



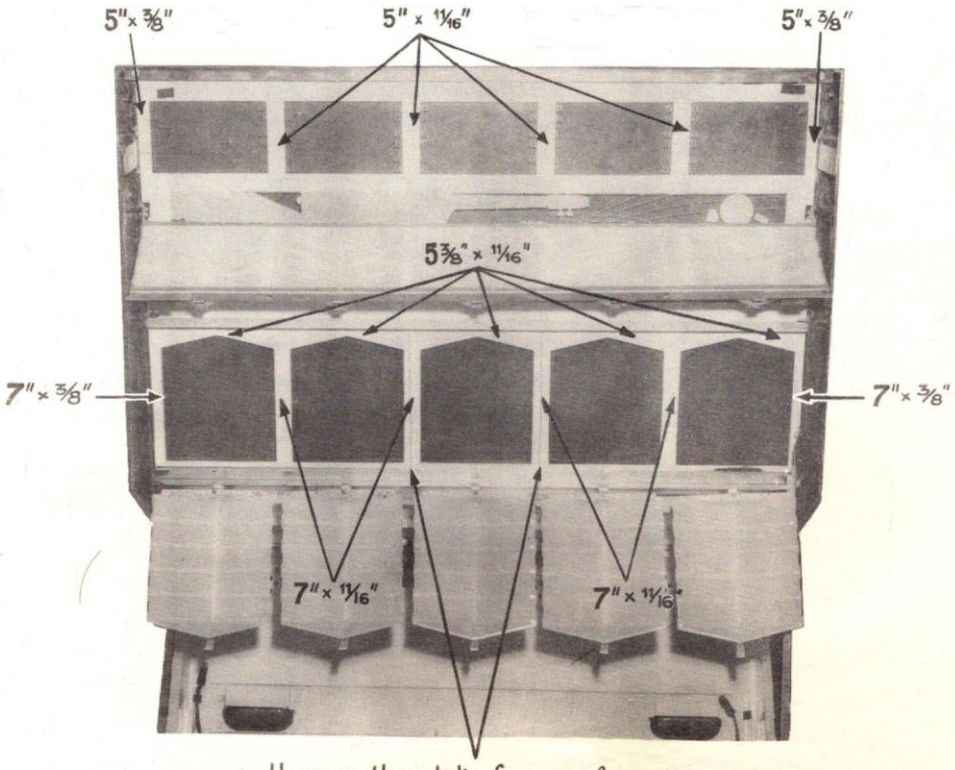
CARRIAGE - SCANS - TWICE WITHOUT PLAYING A RECORD - WHEN SELECTED.

If the Normal tests fail to reveal the fault, check the 36 ohms Resister R516 in "read out" circuit. Replace this Resister if it has increased to more than 10% of its normal value.

REASON: If the resistance of the component increases above the stated 10% there will be insufficient voltage to "read out" the Torroids.

SERVICE HINTS - FEBRUARY/MARCH, 1963

A common fault has occurred on most Seeburg machines through continual changing of title cards. Most of you will have noticed that the silver paint is being damaged and in some cases scraped off altogether making the machine look most unsightly. Head Office now have available strips of self adhesive 'Contact'. These are cut to size and packed in sets, each set being sufficient for one Seeburg machine. Please requisition your supplies now so that when you next visit a Seeburg machine in your area you will be able to rectify this fault.



Unscrew these bolts for ease of operation

Alan Cawley submits details of the CABY Test Meter which he feels Service Representatives may wish to purchase instead of the AVO type Meter.

The CABY's specification is as follows:-

Sensitivity - 20,000 ohms per volt.

Ranges - 10V - 1,000 V D.C.
10V - 1,000 V A.C.
0.5 m.a. - 250 m.a.D.C.current
Resistance 0 - 10,000 ohms
0 - 1 megohm

The only range on the Meter not of great usefulness is the D.C. current range as it reads in milliamps only. But, Alan suggests, this need not put purchasers off because there is rarely any occasion to use it.

The CABY Meter is made in Hong Kong. Full nomenclature is CABY V.O.A. Meter, Model A-10, and it sells at £4.17.6d. This, we assume, is the Trade price.

Alan goes on to say that the CABY has a moving coil meter which is beautifully damped, and a nylon click stop extremely robust. His own model has already had a severe testing in this respect!

Alan Cawley strongly recommends the CABY Meter from personal use. The Factory has no experience of it and, therefore, cannot pass an opinion.

***** ***** ***** *****

FROM SERVICE HINTS - MAY, 1963, ISSUE

No. 1 LYRIC 100 - One reason for wrong credits e.g. 2 for 1/-d. The M4 latch solenoid may not be locating the Selection tooth plate correctly. This check must be made at four positions round the plate.

It is most important that the $M4^1$ contact makes before $M4^2$ (on the latch solenoid) as $M4^1$ permits the supply through Sr^3 contact to operate the select magnet. $M4^1$ also cancels off a credit. $M4^2$ switches off the select magnet by energising SR relay and allows Sr3 contact to open circuit.

***** ***** *****

No.2. WURLITZER 2700 - hum on a new machine. Wurlitzer have recommended that if this occurs it can be cured by cleaning the rear of the printed circuit with Pure Alcohol. This can be purchased in small quantities from a chemist.

***** ***** *****

No.3. WURLITZER 2700 - No selection. The select light is on but the buttons fail to latch. Check and re-set the selector switch adjustments on the latch and pre-set solenoids on the electrical selector. It is probable that these contacts have been put out of adjustment due to the careless use of the free credit switch.

***** ***** *****

FROM SERVICE HINTS - JUNE/JULY 1963 ISSUE

NO. 1. Lyric - repeats the last selection

There are several reasons for this fault but one often overlooked is the speed of the Magazine Changer Motor in the reverse run. To check this release a latch pin and time the Changer Motor from the Selector Crank tip hitting the pin until the Transfer Switch is operated. The speed of the Changer Motor can be regulated by adjusting the 20 ohms wire wound resistor R.2. If the Changer Motor is running slower than the time stated no damage will be done to the mechanism but the record change cycle will be slower. On no account must the Changer Motor run faster than the 10 seconds stated. This applies to both the reverse and search run.

No.2. All 160 selection Seeburgs.

Note when changing pricing units over that if you are using a DPU1 or a USPU1 the machine must be set for Dual Pricing either on the Stepper Unit or on the TJU2 plate.

The TJU2 plate is adjustable. The TJU3 plate is wired for Dual Pricing only and is not adjustable.

The SPU1 and CAU1 can be used only with the Steppers and the TJU2 plate set in the single pricing position.

No.3 Lyric - Mains Transformer Tapping

If it is necessary to change the Voltage Tapping on the mains transformer observe the following:-

White is the common supply.

Blue is the supply to the lights (220v)

Black is the live supply to the Transformer and is usually on the 240v tapping.

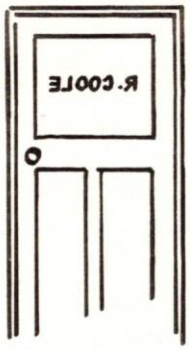
Leave the Blue and White where they are and reposition the Black to the appropriate voltage. If the Blue wire is moved you will experience trouble with the Fluorescent Tubes, Chokes and Starters.

No.4. Lyric - Volume

If the sound from the Amplifier is too high, even with the volume control turned fully down, adjust the two pre-set controls located at the front (left) of the Amplifier. Access is through two holes in the chassis. Turning these controls anti-clockwise will reduce the input gain, turning them clockwise will increase it. It is most important to keep both channels balanced.

SERVICE HINTS

or Coole's Corner



No.1. Music Maker "Lyric" - Intermittent Fading of Sound

Check both channels of amplifier for balanced output. If both channels are correct the variation in sound is most probably due to an intermittent fault in one half of the Stereo cartridge. If the Mono/Stereo control is switched to the Mono position the fading will cease but the sound output will be reduced. This is only a temporary cure to keep the machine operating until a new cartridge is fitted to bring the sound level back to normal.

No.2. Music Maker Wurlitzer 2700 - 800m.a. fuse blowing

Intermittent mechanical bind of selector button switch assembly failing to release depressed buttons, thus holding selection cicruit energized.

Check keyboard for free movement of latch bars. Also binding of plungers in the pre-set and latch solenoid coils.

1. Remove the No.32 red wire from the contacts No.1 and No.3 of the latch switch assembly actuated by the plunger of the latch solenoid coil.

2. Separate the soldered ends of the No.1 and 3 switches.

3. Solder the No.32 red wire back on the No.3 latch switches.

4. Solder a jumper wire about 8" long, one end to the vacant No. 1 latch switch contact and the other to the No.47 purple wire with yellow tracing located on the left hand side of the number switch bank. Lace the wire around the back of the pre-set solenoid, and tie.

The No. 1 switch is the bottom contact closest to the mounting bracket. No.3 switch is the third switch up from the mounting bracket.

Check fuse in the letter coil circuit for correct size. It must be 800mm.a. slow blo.

Test phonograph by registering a credit; make selection on phonograph and hold plunger of latch solenoid in so it cannot release. If circuit is not wired properly it will be noted that the letter coil circuit stays energized while the plunger is held in and the latch switches closed. This wiring change releases TR-1, thus releasing the selection circuit even though the plunger is held in manually on the latch solenoid coil.

NOTE:

It is most important that this modification is carried out on all Model 2700 machines as soon as possible.

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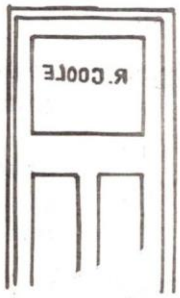
SERVICE HINTS

OR COOLE'S CORNER



Re: MICROPHONICS IN MODEL 2700/2710 PHONOGRAPHS

It has occasionally been reported from the field that low frequency microphonics were being encountered on Model 2700/2710 Phonographs.

Our Engineering Department has checked this matter very carefully and found out that some distortion of this kind could be heard at the end of a very low output record. On a test phonograph, the microphonics were eliminated by changing R-54, a 27K resistor, to 39K ohms. This kept the gain from building up so much on the low output records. With medium-low, medium and high output records, the change of R-54 from 27K would make no difference in gain - but, with these records no microphonics were heard.

We would suggest that this change be made on all machines wherever the microphonics are encountered. This measure would also be helpful if "once-around" microphonics are heard (usually around 1000 to 1500.)

We take this opportunity of informing you that recently resistors R-1 (1 megohm) has been changed to 750K ohms and R-2 (1800 ohms) to 3300 ohms. This was done because some very loud records were causing distortion in the first stage.

Please refer to service manual Mod. 2700/2710, pages 45-46, sound system Model 544 amplifier.

WURLITZER 2700

Subject: Free credits registered by a sharp blow on the side of cabinet adjacent to cash box door.

Credits can be registered either by the bouncing of one or more of the coin switches or by the action of relay R.Y.1.

Remedy:

1. Remove coin mechanism (Slug Rejector).
2. Remove four screws holding the Mounting Plate and Spring Catch Assembly, (Part No.122562) to the cabinet side.
3. Using the longer screws supplied refix the Mounting Plate and Spring Catch Assembly in its original position with the four sponge washers fitted between the Mounting Plate and the cabinet side as shown in fig.1. Tighten the four screws unit until there is a gap of 5/16" between the Mounting Plate and cabinet side.
4. Replace coin mechanism (Slug Rejector) and check with coins.
5. Remove the Playrak Assembly (Part No.121855) from cabinet side.
6. Fasten bracket supplied with 2 woodscrews to base of cabinet as shown in fig.2.
7. Mount Playrak Assembly to bracket with 3 - 2Ba screws supplied.
8. Replace all plugs and check machine.

Kits for this modification to be requisitioned for each W2700 in your area.

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WURLITZER 2700

Subject: Free credits registered by a sharp blow on the side of cabinet adjacent to cash box door.

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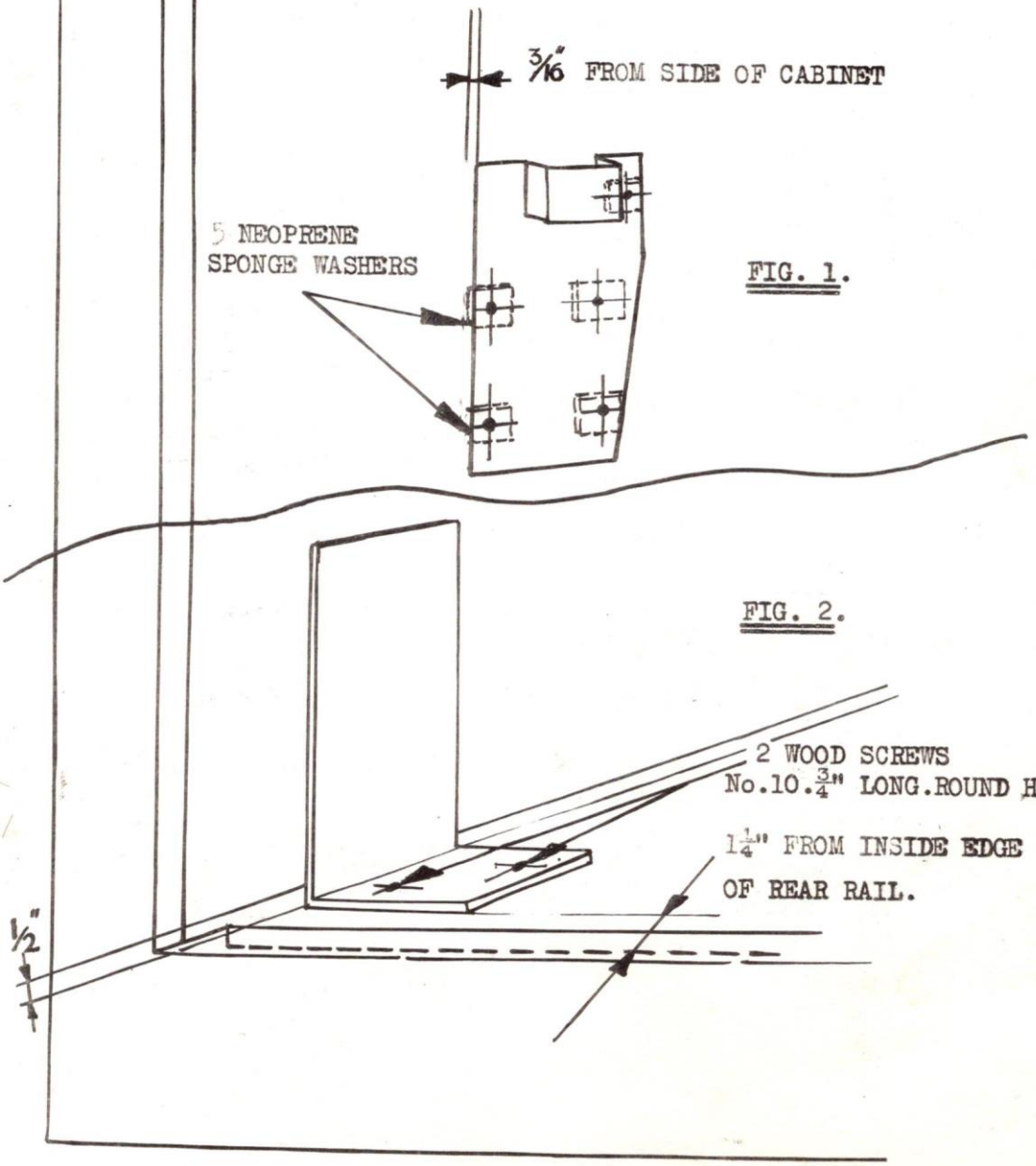


FIG. 1.

FIG. 2.

2 WOOD SCREWS
No.10.$\frac{3}{4}$" LONG.ROUND HEAD

$1\frac{1}{4}$" FROM INSIDE EDGE
OF REAR RAIL.

$\frac{1}{2}$"

NEW TYPE VOLUME CONTROL

Designed for Symphonaire Background Music **ONLY**. This unit is much the same as the previous Attenuator apart from size and appearance.

It is made up with a resistive load (as a Potentiometer) not an Inductive one, for this reason the load capacity of this unit is **4 Watt**.

The wiring is terminated via a 3 way terminal block - for easy connections.

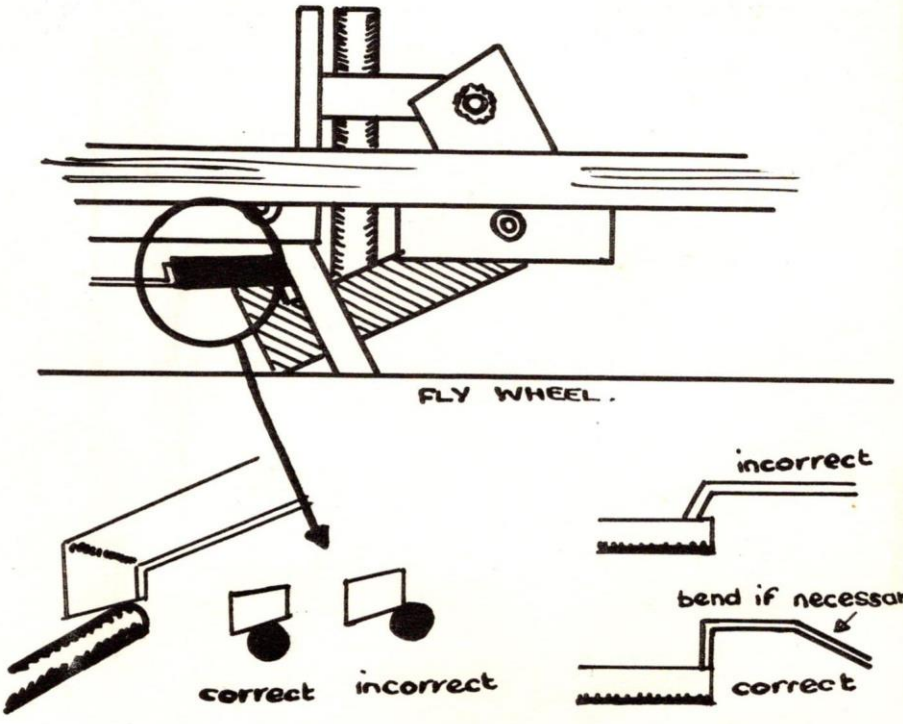
NOTE:

The terminated connections as per circuit diagram.

Ensure that the play lever is operating satisfactorily. i.e. the lever should be at least 30° past the vertical when the correct operating pinch wheel pressure has been applied.

If this is not so check that the play lever cam is in the correct position as in Dia. 3. This is achieved by bending the cam plate as shown in Dia. 4.

NOTE:
a) The cam must not foul the pinch wheel.
b) Care must be taken when bending the play lever cam.



DIA. 3.

DIA. 4.

A T T E N U A T O R S

STANDARD

Attenuators (Old Type) as used on Phonograph and Background Music Systems. The connections are the same for both. (Stereo and Mono).

CONNECTION

a) C/V in from the machine use terminals 1 (Com) and 7.

b) C/V to the speakers. Use terminals 1 (Com) and 10 (Wiper).

NOTE:

The connections to and from the Attenuator must be correct, - if incorrect connections are made, the 600 Ohm line will be variable, and attenuate other floor speakers.

Symphonaire Cartridges - Tape Spillage

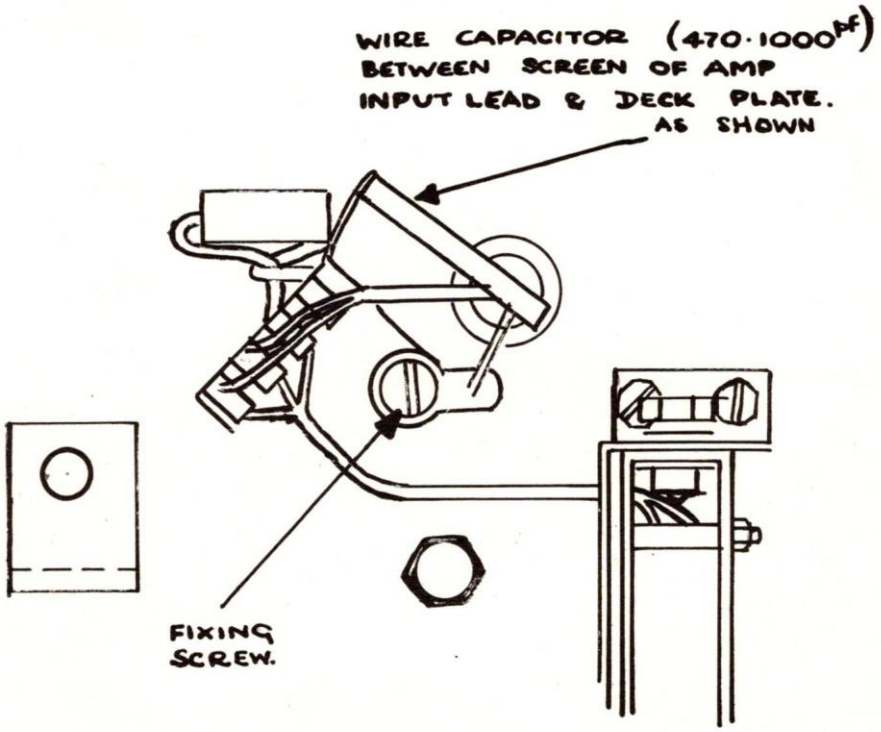
This is often caused by incorrect operation of the brake wire. (Refer to sketch). The function of this wire is to prevent the tape carrier spool from rotating and allowing the tape to spill whenever the cartridge is not in use on a machine.

The nose of the brake wire should not be so exact a fit into any of the tape carrier spool slots that it becomes jammed and cannot easily be disengaged when the cartridge is inserted into the machine. You may first check this operation manually. Since the only purpose of the brake wire is to prevent the spool from rotating it does not matter if a 'nose' is too large to fit into a slot provided sufficient tension is present to lock the spool. Upon insertion of a cartridge into a machine, the spool should be seen to revolve almost immediately. A slight hesitant movement of the spool should disappear after a few moments use. Make sure that the wire nose is not riding on top of the spool, that it is free to move under its retaining plate and the wire anchorage has not allowed the wire to work free and alter its position relative to the carrier spool slot. (Refer to sketch).

It sometimes happens that with rough usage the small circlip retaining the small nylon bobbin becomes disengaged and that the graphite rod which is normally fastened to the spool breaks. If it is suspected that these parts are loose in the cartridge return it to the Factory.

The purpose of this service hint is to help you make a visual check on the efficient operation of a cartridge. If you detect or suspect inefficient operation do not attempt to rectify the trouble but return the cartridge with a brief note of your observation.

The enclosed diagram illustrates the modification to the Symphonaire to cure R.F. pick-up. This modification should be tried in all cases where equipment is picking up messages from Taxis, Police etc; If due to the strength of the signal the modification is unsuccessful then the equipment must be changed-over for a completely modified type.



M I C R O P H O N E S

There are three current types of microphones in use, these are as follows:-

a) 200C : High impedance type and used on the Symphonaire.

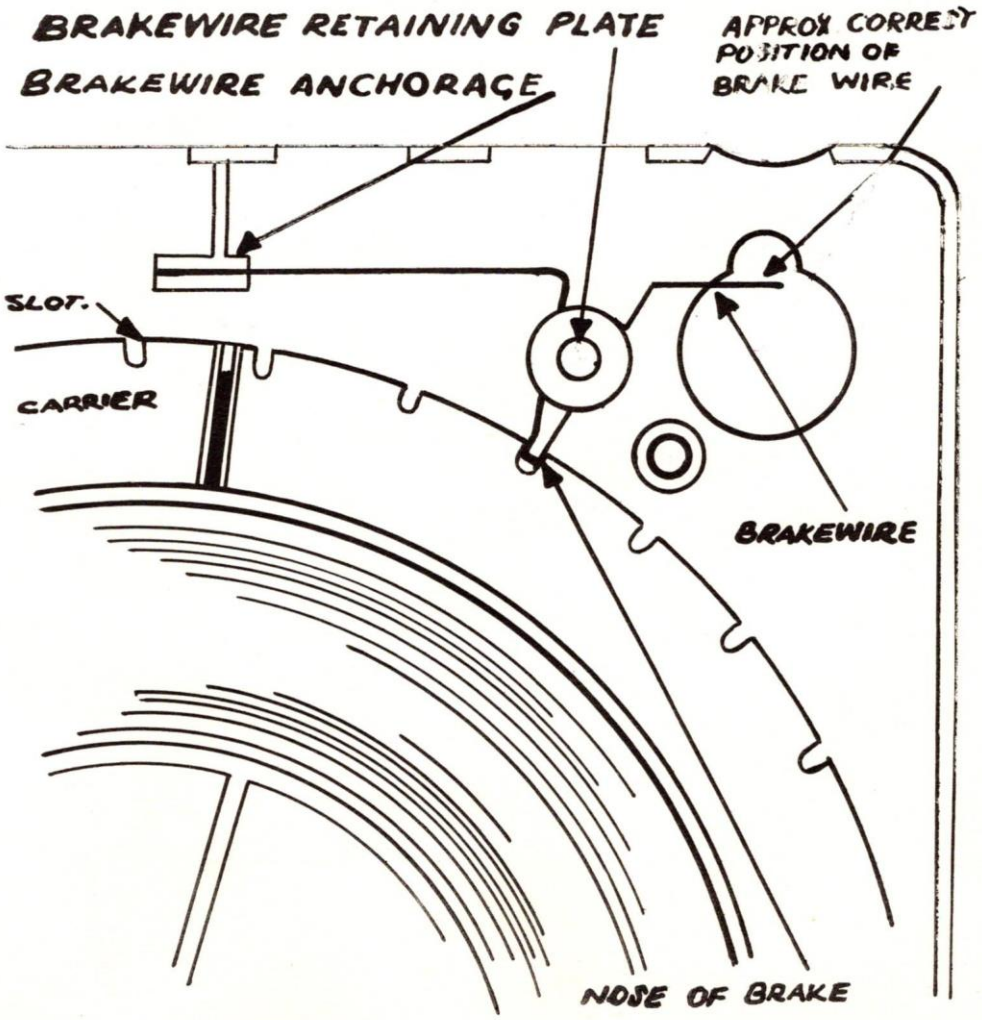
b) Grampian DP4H : High impedance type as used on the Symphonaire when a better class microphone is required.

c) Grampian DP4M : Medium impedance as used on The Seeburg BMS and BMC Units.

Regarding the recommended length of lead for the 200C and the DP4H. Then the Optimum length is (18 feet) as supplied by the manufacturers any increase on this length results in - a proportioned reduction in the signal strength and change in the frequency response curve. The DP4H which is the better class of microphone, can however in practice be used with a larger length of cable.

NOTE: The DP4M will have insufficient gain if used on the Symphonaire (apart from wrong matching).

NOTE! NOSE OF BRAKE MUST BE FREE OF CARRIER SLOT WHEN CARTRIDGE IS BEING PLAYED.



Drive Belts - Symphonaire:- When Symphonaires were first used the drive system was of two $\frac{1}{8}$" belts on a two groove pulley. Premature failure of the belts led us to use three 1/16" belts on a three groove pulley.

Later it was found that 5 belts, of a softer rubber than those used previously, gave a better performance in as much as it reduced the possibility of excessive 'wow' occurring.

This means that you may find the following combination of belts and pulley wheels in use:-

1) Two grooved pulley and two $\frac{1}{8}$" belts.
2) Three grooved pulley and three 1/16" belts (hard)
3) Six grooved pulley and three 1/16" belts (hard)
4) Six grooved pulley and five 1/16" belts (soft)

What should you do when you meet these combinations?

If you service a Symphonaire that has been reported as running slow or giving 'wow' and flutter discard the existing belts - return them to the Factory and fit the 5 belt system (as No.4)

Belts which are of the correct softness for the 5 belt system can usually be identified by a blue paint mar. However, you should only fit 'genuine spares' supplied by the Service Dept. Often old belts have tiny cracks in them which might result in another call! Return old belts to the Factory. CAUTION:- never use 1/16" belts on an $\frac{1}{8}$" pulley - change the pulley and don't forget to check the motor, also the pinch wheel pressure before you leave the machine.

Symphonaire Pinch Wheel Pressure Adjustment:- Pinch wheel pressure can greatly affect the performance of the Symphonaire and should be checked every time you examine a Symphonaire. Whilst on early decks pinch wheel adjustment was made by means of an eccentric stop, the new method enables the adjustment to be made while the deck is still fitted to the cabinet. This facility can be recognised by the fact that the two screws to the right of the cartridge lever will have changed to a hexagon headed screw. Where this is seen it is simply necessary to slacken off the two screws and reposition the cartridge lever for correct pressure of the pinch wheel pressure.

QUESTIONS AND ANSWERS ON SYMPHONAIRE

1. Q. What is the voltage output of the pre-amp stage?

   A. The voltage output is dependent upon the master volume control setting of the Symphonaire. When this is at maximum the voltage output is 2 volts into 250,000 ohms. However, to obtain this voltage the Symphonaire must be using its full output of 6 watts into either a speaker or dummy lead. For other conditions the output should be considered as approximately 0.5 volts.

2. Q. What impedance or type of microphone should be used?

   A. The microphone circuit has been designed for use with a high impedance crystal microphone.

3. Q. What is the input sensitivity of the radio or gram socket at the rear of the machine?

   A. Two sensitivities are available - one high, one low - and are 0.1 volts and 3.5 volts respectively for full output of the Symphonaire.

4. Q. What is the "hold" (or "mute") socket for?

   A. A socket is provided so that when a pair of wires are connected between it and a single pole switch, closing of the switch immediately stops the music programme so that an announcement may be made on the paging system. Opening of the switch "fades" the music back to its original level.

5. Q. Can the machine be made to operate on a 100 volt system tapping line and not 70 volts?

   A. The Symphonaire was designed to operate on a 70.7 volt system in common with all our other products and cannot by altered. Where it is required to feed an existing system of 100 volt speakers it will be practical to do so.

Remember, too little pressure will give you: 1) tape slipping, 2) 'wow'. Too much pressure will give you: 3) slow running, 4) premature failure of drive belts.

A simple check of pinch wheel pressure is, after having pulled the cartridge lever fully on, gradually to disengage the cartridge lever. If then an increase in pitch or speed of the tape is noted it is likely that the pinch wheel pressure is set incorrectly and an adjustment should be made.

Motors - Symphonaire: A lot has been done by the Development Dept. to improve motor performance, but you can help to alleviate problems that still exist. For example, don't use 3 in 1 oil!

For silent running motor bearings must be a precise fit with minimum clearance. As with a good engine bearings must be run in before full performance can be achieved, and as with a car it is often advisable to remove the by-products of this action by changing the oil, after which many hours of trouble free running can be expected.

The bearings are known as self-aligning. After stripping and re-assembling give the motor a sharp tap and the bearings will automatically re-align. A motor with misaligned bearings will normally become freer after receiving the corrective tap.

The small bronze bush which forms the bearing is in actual fact constructed of small particles of metal which form a kind of sponge. There is normally sufficient reservoir of oil in these small holes to allow the bearing to operate for upwards of 2,000 hours. This is only true if the correct oil, No. 29 Tellus, is used. 3 in 1 oil evaporates very rapidly. It is also obvious that any attempt to open up the hole in the bearing with a reamer or drill will close off many of the small holes which supply the oil to the wearing surface and the motor will seize.

If you encounter a faulty or slow-running motor (1) check the mains voltage(2) check all other components are satisfactory (3) strip and clean the bearings (4) re-oil bearings and felt washers (5) examine the bottom bearing and make sure that no damage has been done and that the bearing retaining clips are not proud of the bearing surface.

Another way to use this speaker unit on a low impedance amplifier is to use a C.V. transformer to the C.V. terminals on the speaker unit.

NOTE: There are two types of C.V. Transformer available:-

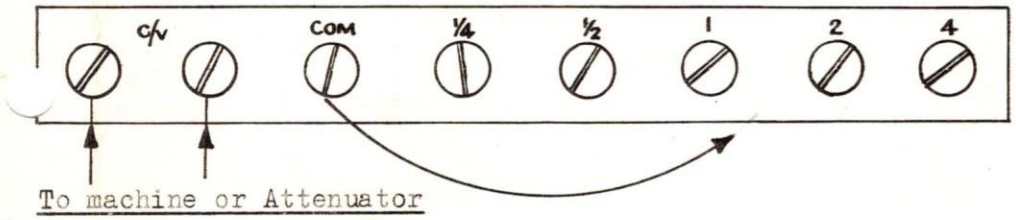
a) 15 Ohm impedance (8 Watt)

b) 3 Ohm impedance (4 Watt)

THE NEW 8" HIGH FLUX SPEAKER

(as designed for Background Music)

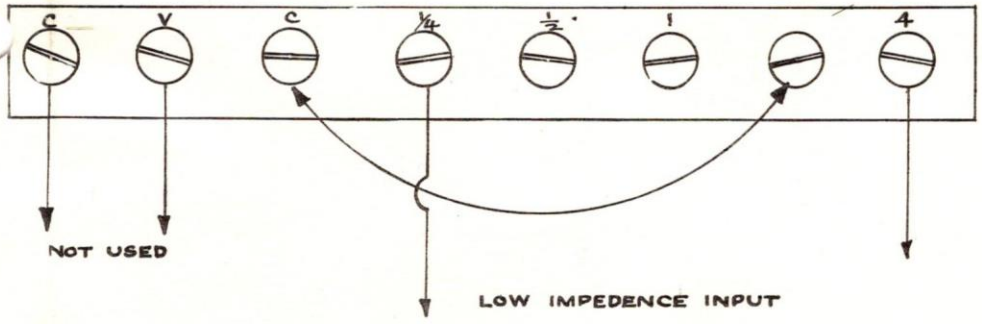
The terminations on the back of the cabinet are as follows:-



To machine or Attenuator

Please note - a jumper wire is required between c (common) and the appropriate wattage taping. (maximum 4 Watts).

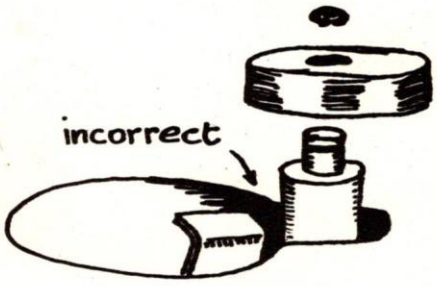
This speaker was designed for Background Music, but can be used on the smaller installation of Phonographs. Where 4 watts per speaker will be sufficient. To correct this speaker for low impedance simply connect the terminals at the back as per diagram.



Where difficulty is encountered in engaging the tape cartridge on Symphonaire Equipment:-

1. The pinch wheel lifting arm should operate as in Dia. 1.

If this is not so, the lever may be twisted to eliminate the gap between it and the pinch wheel spindle as Dia. 2.



DIA. 1

DIA. 2

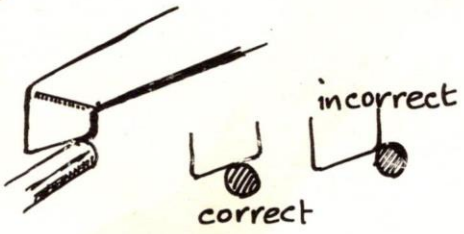
After checking this.

Ensure that the play lever is operating satisfactorily. i.e. the lever should be at least 30° past the vertical when the correct operating pinch wheel pressure has been applied.

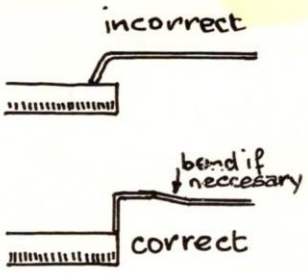
If this is not so check that the cam is in the correct position as in Dia. 3. This is achieved by bending the cam plate as shown in dia. 4.

NOTE:

The cam must not foul the pinch wheel.



DIA. 3



DIA. 4

SERIAL No.

MIDLAND MUSIC SERVICES

SERIAL No.

MIDLAND MUSIC SERVICES

SERIAL No.

MIDLAND MUSIC SERVICES

SERIAL No.

MIDLAND MUSIC SERVICES

SERIAL No.

MIDLAND MUSIC SERVICES

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