ELECTRICAL & RADIO TRADING SERVICE CHART

ARGOSY LRG

THREE-SPEED radiogram in walnut, oak, or mahogany veneered contemporary style cabinet with lift-up lid and record storage compartment. Suitable for 200-250V 50c/s AC and manufactured by Argosy Radiovision Ltd., Argosy Works, Hertford Road, Barking, Essex, the radiogram was released in August, 1954, at a price of 64gns., inclusive of £16 6s. 6d. tax.

The instrument consists of a six-valve three-waveband superhet radio receiver with magic-eye tuning indicator, and a Garrard RC110 three-speed record changer.

The receiver employs an ECH81 frequency-changer V1, EBF80 IF amplifier V2, EBF80 signal rectifier, AVC and AF amplifier V3, and an EL84 output amplifier V4. HT is provided by an EZ80 full-wave rectifier V5, and the magic-eye tuning indicator is an EM34.

Waveband coverage is SW 16.65—51.7, MW 187—575, LW 940—2000 metres.

The record-changer is a Garrard RC110 with Garrard GC2 turnover-crystal pickup fitted with renewable twin sapphire styli. The changer will play automatically up to ten records of the following types at each loading. At 78 rpm 10 and 12in., 33⅓ rpm 7, 10 and 12in., 45 rpm 7in. Centre hole adaptors, obtainable from any record store, are required for 45 rpm records with large centre hole.

A safety device is incorporated which prevents the pickup arm moving from its rest should the changer be switched on without any records on the record spindle.

RADIO RECEIVER

Aerial. Sockets are fitted on rear panel of cabinet for connection of aerial and earth leads. For best reception a good outdoor aerial, erected as high as possible, should be used. The earth wire should preferably be connected to a lead rising water main or copper rod driven into the ground.

Pickup leads of record changer are plugged into sockets on receiver chassis. When wave-change switch is in its Gram position, aerial input and g1 of V1 are shorted down to chassis; oscillator anode and grid of V1 are earthed to chassis through their respective coupling capacitors C10 C7.

Volume control R9 adjusts amplitude of either

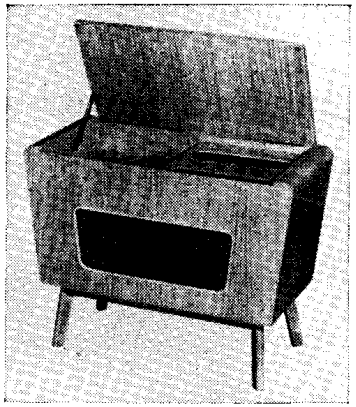
Inductors

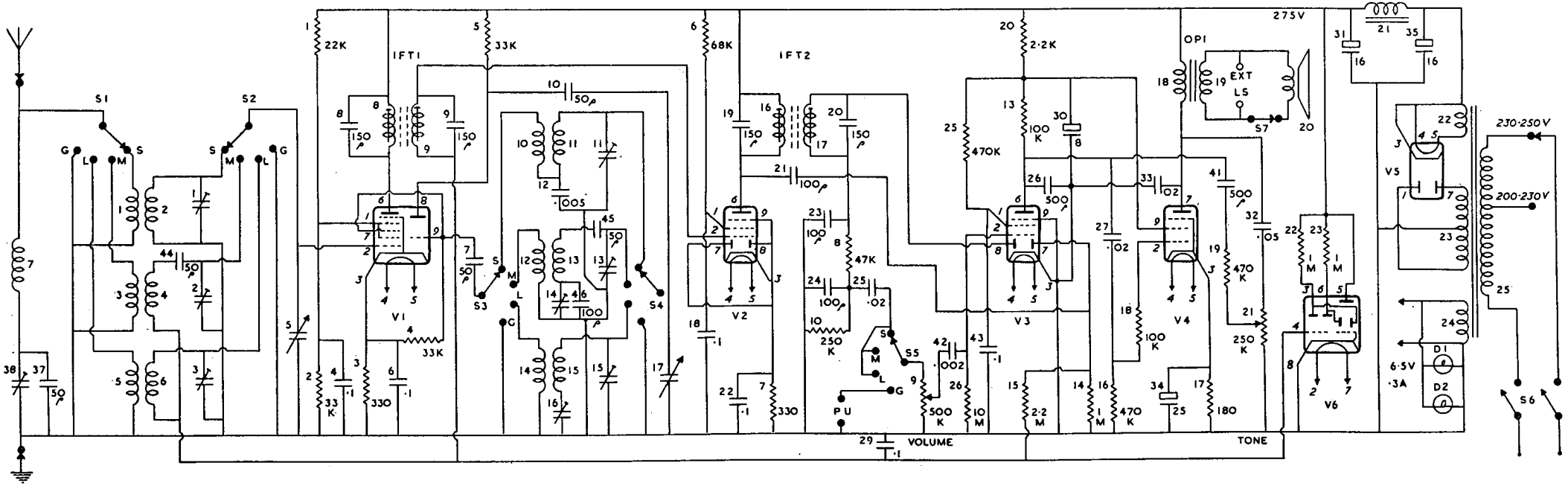
L			Ohms	L			Ohms
1	...	...	Very low	14	...	...	11
2	...	...	" "	15	...	...	5
3	...	...	17.5	16	...	...	6
4	...	...	4	17	...	...	6
5	...	...	45	18	...	...	500
6	...	...	32	19	...	...	Very low
7	...	...	10	20	...	...	2.75
8	...	...	6	21	...	...	250
9	...	...	6	22	...	...	Very low
10	...	...	Very low	23	...	...	600 CT
11	...	...	" "	24	...	...	Very low
12	...	...	72	25	...	...	33 tapped
13	...	...	4				29.5

Resistors
1watt: R1 2 5 20.
½watt: R17.
Log carbon potentiometer: R9.
Linear carbon potentiometer with DP Switch: R21.
All remainder ½watt.

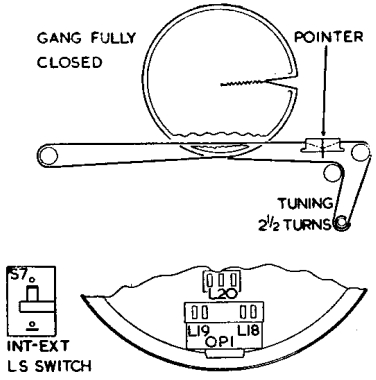
Capacitors
Trimmers 50pF: C1 11 38.
„ 120pF: C2 3 13 15.
„ 250pF: C16.
„ 750pF: C14.
Tubular 350V: C4 6 18 22 29.
„ 750V: C25 27 32.
„ 1,000V: C33.
Moulded mica: C7 12 21 26 37.
Silver mica: C8 9 10 19 20 23 24 41 44 45 46.
Electrolytic 25V: C34.
„ 350V: C30 31 35.

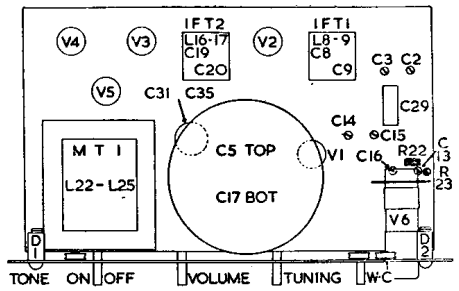
Note.—In later receivers C23 C24 and R8 is a combined type of component.

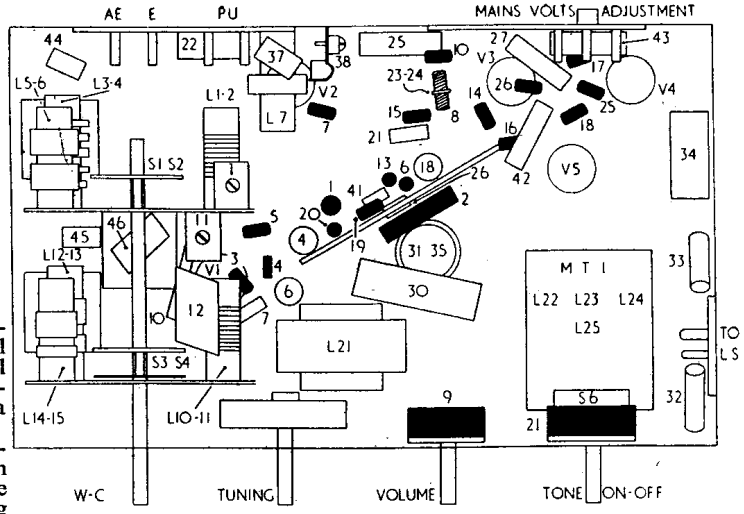


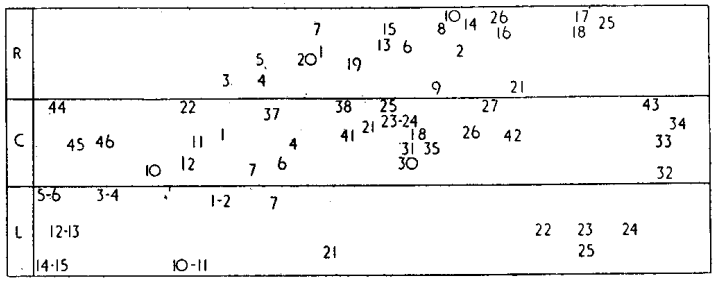


	ECH81	EBF80	EBF80	EL84	EM34	EZ80
A	275V 1·2MA 135V 4·6MA	275V 5·6MA	80V 1·7MA	255V 38MA	40V 25V 26OV	275V RMS
G2	110V 3 8MA	100V 1·8MA	30V 0·6MA	250V 4·6MA	—	—
K	2·75V	2·35V	O.V	8V	O·V	292V 67MA









radio or pickup signal fed to grid of pentode AF amplifier section of V3.

Tone control. A negative feedback circuit consisting of C32 R21 R19 C41 is employed between anode and grid of output amplifier V4. The degree of feedback is adjustable by tone control R21.

Tuning indicator. The AVC voltage developed across R14 by second diode V3, and which after decoupling by R15 C29 is fed to control grids of V1 V2, is also fed direct to grid of magic-eye tuning indicator V6. The increasing negative voltage produced by an increasing signal causes decrease of shadow angle. Minimum shadow angle indicates that receiver circuits are tuned correctly to the incoming signal.

Extension speaker sockets are provided at rear of cabinet to allow use of a low-impedance extension speaker. S7, which is located on the extension socket panel, enables the 10in. PM internal speaker to be silenced.

HT is provided by an indirectly heated full-wave rectifier V5, its anode voltages being obtained from HT secondary L23 of mains input transformer MT1. Choke-capacity smoothing is given by L21 C31 C35. Reservoir smoothing capacitor C35 should be rated to handle 125mA ripple current.

Removal of chassis. Secure pickup arm of auto-changer unit to its rest—a small hole is provided on rest for this purpose. Pull off the four control knobs and remove back panel of cabinet. Place cabinet carefully front downwards on to a suitably protected surface.

Unplug aerial, earth and pick-up leads from their sockets on receiver chassis. Remove the four Philips screws securing extension speaker and control switch to rear of cabinet and turning it sideways pass it down through clearance hole. Remove moulded Bakelite cover of auto-changer motor terminal box (held by nut on top) and disconnect from its terminals the mains lead from receiver chassis.

Unscrew and remove the two screws fastening the lower of the two wooden battens, to which chassis is attached, to the side and central support rails. Chassis can now be withdrawn by sliding it towards bottom of cabinet to allow upper batten to clear its locating slot.

Removal of auto-changer. Auto-changer can be withdrawn on removal of the three nuts and triangular washers from suspension bolts on underside.

TRIMMING INSTRUCTIONS

Apply signal as stated below	*Tune Receiver to*	*Trim in Order stated for maximum output*
1 470kc/s to g1 V1 via .01 capacitor	MW band 575metres	Cores L8 L9 L16 L17
2 470kc/s to aerial socket	545metres	C38 for **minimum**
3 600kc/s to aerial socket via 200p	MW band 500metres	C14
4 1.5mc/s as above	200metres	C13 C2. Then repeat 3 and 4
5 18mc/s as above	SW band 16.667metres	C11 C1
Check that oscillator is not on image frequency—this should appear approximately 1m/c lower.		
6 6.5mc/s as above	46.15metres	Check calibration
7 150kc/s as above	LW band 2,000metres	C16
8 300kc/s as above	1,000metres	C15 C3. Then repeat 7 and 8

MAINTENANCE OF RECORD-CHANGER

Oiling. Motor and intermediate wheel bearings are oil retaining type and rarely need lubricating, when need for oil is apparent hold intermediate wheel out of way and lubricate the top motor bearing with a fine grade of machine oil. Carefully remove all traces of surplus oil before running. Intermediate wheel rubber, motor pulley and inside of turntable rim must be kept free of oil.

To remove turntable give turntable mat centre a quarter turn in a clockwise direction and lift-off with turntable mat. Next remove lower retaining clip. On no account remove retaining clip for main spindle. Turntable can now be removed by carefully lifting with equal pressure on diametrically opposite sides, on no account use leverage under rim to free tight fitting turntables. One method of removing such turntables is to pass 16 or 18 SWG wire through the three holes around centre to form three loops which can then be used to lift the turntable. Turntable should be replaced with the changer in the switched off position.

Speed variation. Should the speed vary during playing remove the turntable as described above and examine motor pulley, intermediate wheel and inside of turntable rim for traces of oil and if necessary wipe thoroughly with a clean cloth. Also check that motor pulley is in its correct position on motor shaft. Switch changer on and see that intermediate wheel runs in centre of its appropriate step and does not foul side of adjacent step. If it does loosen screw holding pulley to shaft and move pulley to its correct position.

Should motor run too hot check that voltage change over links in mains terminal and change over block are set correctly to correspond to voltage of the mains supply. If correct check motor windings by inserting an AC ammeter in either motor lead, the current should not exceed 0.26 amp. on 100-130V or 0.13 amp. on 200-250V 50-60c/s. If readings in excess of these figures are obtained the motor should be returned for examination.

Pick-up dropping position. Pick-up arm dropping position is factory set for optimum accuracy, should however any minor adjustment be required to accommodate abnormal records rotate the screw accessible through the hole in top plate just in front of pick-up arm and overarm pedestal. This adjustment can only be made with pick-up arm on its rest.

Pick-up height. Distance the pick-up lifts can be adjusted by turning the front screw at rear of pick-up arm with a small screwdriver. Ten 12in. 78 rpm records should be placed on turntable and pick-up height adjusted so that as pick-up returns to rest on completion of top record the tip of pick-up stylus clears record by $\frac{1}{8}$in.

Pick-up stylus pressure. Stylus pressure for playing microgroove records must not exceed 10 grammes and it is strongly recommended that a check be made occasionally with a Garrard Stylus Pressure Gauge. To adjust stylus pressure turn rear screw of pick-up arm with a small screwdriver, clockwise to reduce pressure and counter-clockwise to increase it.

Auto trip. Auto trip mechanism is the velocity type, that is, it operates by the quick inward movement of pick-up arm when pick-up reaches quick run off groove at end of record. It is of a special patented design to be very light and sensitive in operation and is set to commence operation when stylus reaches a $2\frac{7}{8}$in. radius. If auto trip fails to operate the pick-up will remain running in centre of record and to correct this remove turntable and raise auto trip lever by giving adjusting screw about half a turn in a clockwise direction, loosening the locknut if one is fitted. This will raise auto trip lever and enable it to engage the cam on striker when pick-up runs into record run off groove.

The adjusting screw is located along auto-trip lever exactly 1in. from its pivot.

Record dropping. Should records fail to drop first make sure that it is not due to badly warped records. If records are flat then check that record pushing pawl is engaging in record centre hole. The pawl is spring loaded and after pushing a record off the spindle step it is pushed down by the records above, it is then moved back into record spindle and when clear of record above, it should spring up ready to push off next record. By observing action of record pushing pawl underneath changer it can be seen if pawl is operating as described, if not it is probably due to it not moving back quite far enough into spindle. To correct this rotate, by a very small amount, the two eccentric adjusting screws located on operating cam on underside of changer mechanism. Adjust the screws so that there is a very small amount of play between pawl and adjusting plates.

Replacement sapphire styli for the GC2 turnover crystal pick-up are—78 rpm green type GC2/3, LP red type GC2/1.

Styli can be replaced without removing crystal cartridge from pick-up arm, but in view of mounting of changer in this particular cabinet possibility of damage to styli or cartridge will be avoided if the latter is removed. To remove cartridge, turn lever to 78 rpm and then undo and remove grub screw securing it to shaft of cartridge. Withdraw knob, cap and spring off end of shaft—cartridge can now be carefully removed from underside of pick-up arm although it will still be attached to connecting wires.

Styli plug into sockets on either side of cartridge, the forward tips of styli cantilever arms resting on plastic cushions fixed to cartridge. Carefully lever old styli out of socket using a small thin-bladed screwdriver under rear tip of cantilever arm. When fitting new styli see that the correct one is inserted in each socket and that when cartridge is refitted to pick-up arm "turnover" lever is replaced the correct way.