ARGOSY TRG/3

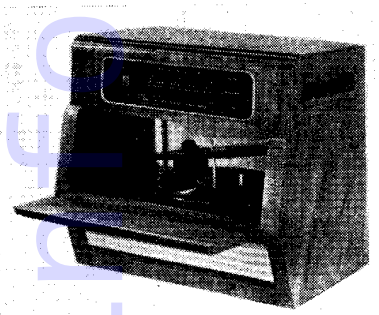
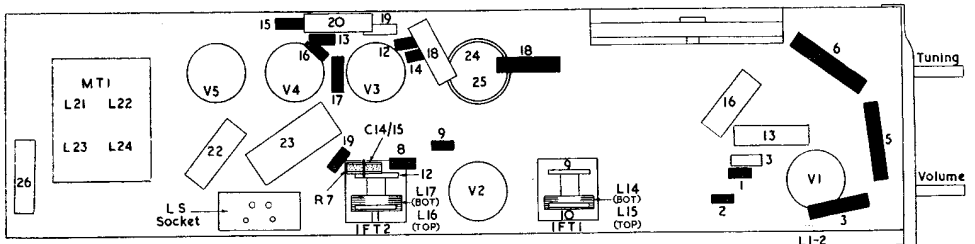
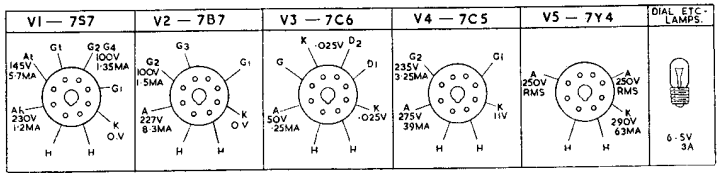


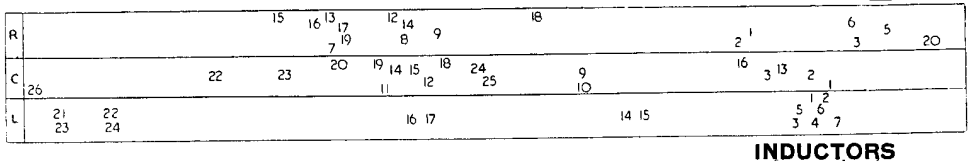
Table radiogram consisting of five-valve three waveband superhet and a Garrard RC72A three-speed autochanger using plug-in standard and long-playing crystal pickup heads. Sockets for external aerial, earth and low impedance type extension speaker. Figured walnut veneered table cabinet with hinged drop-down door to autochanger compartment. For 110-115, 200-230, 231-250V 50c/s. Made by Argosy Radiovision, Ltd., Argosy Works, Hertford Road, Barking, Essex

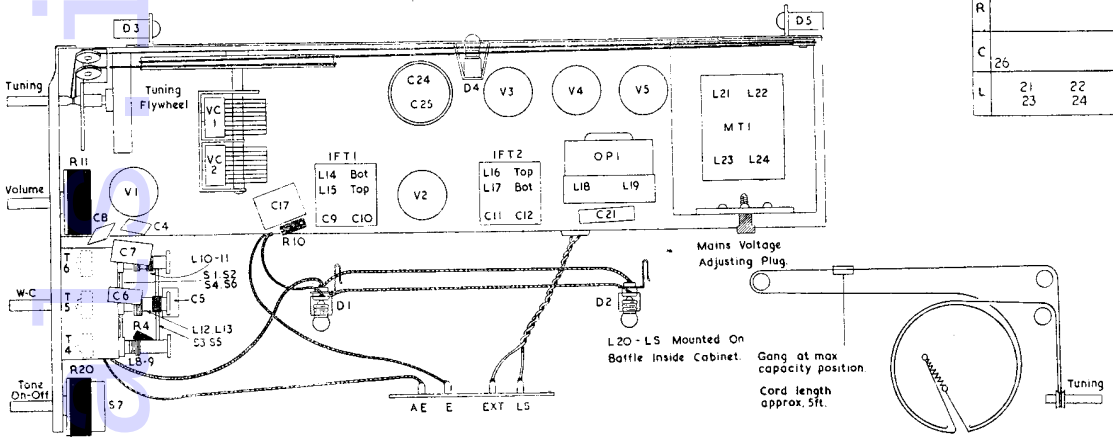
AERIAL. The receiver is fitted with a plate type aerial, a sheet of metal foil inside top of cabinet, for reception of strong transmissions, and sockets are provided for connection of an external aerial and earth for reception of weak signals or when receiver is used in a bad reception area.

Signal from either external or plate aerial is switched by S1 to aerial coupling coils L1 (SW), L5 (LW), L3 (MW). L7 C1 between aerial and earth sockets form an IF filter. The inductively coupled grid coils L2 (SW), L6 (LW), L4 (MW)—









CAPACITORS

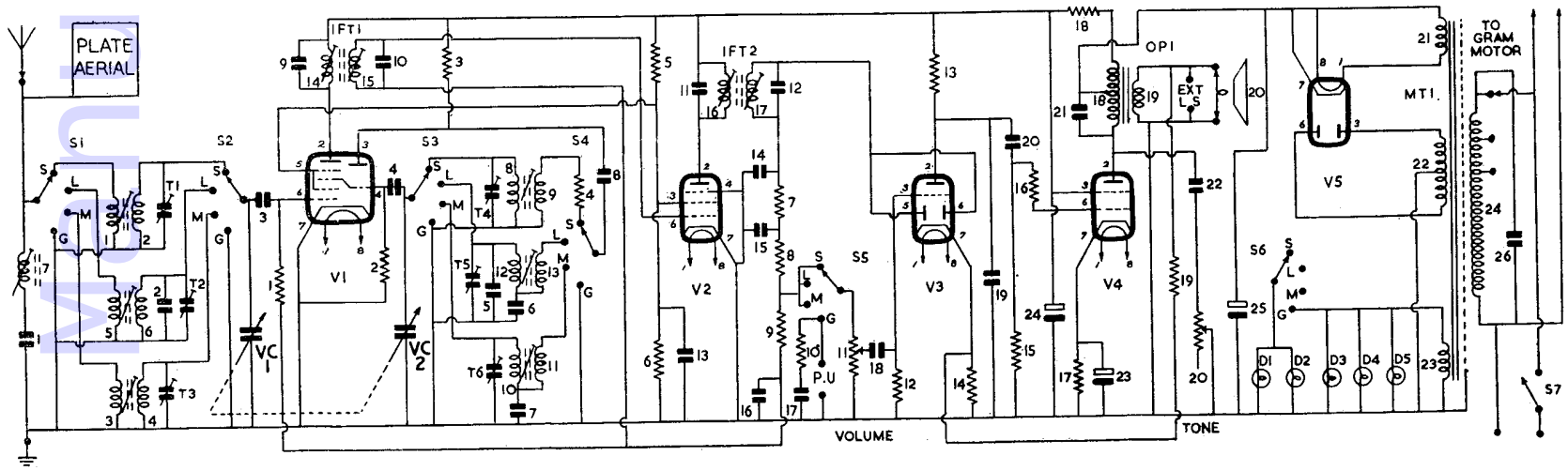
C	Capacity	Type
1	100pF	Silver Mica
2	50pF	Mica
3	500pF	Mica
4	50pF	Mica
5	75pF	Silver Mica
6	140pF	Silver Mica
7	480pF	Silver Mica
8	2000pF	Silver Mica
9	150pF	Silver Mica
10	150pF	Silver Mica
11	150pF	Silver Mica
12	150pF	Silver Mica
13	.1	Tubular 350V
14	100pF	Silver Mica
15	100pF	Silver Mica
16	.1	Tubular 350V
17	.005	Mica
18	.005	Tubular 1000V
19	300pF	Mica
20	.002	Tubular 1000V
21	.002	Tubular 1000V
22	.05	Tubular 500V
23	25	Electrolytic 25V
24	16	Electrolytic 350V
25	32	Electrolytic 350V
26	.01	Tubular 1000V

INDUCTORS

L	Ohms
1	.2
2	Very low
3	37
4	2.5
5	75
6	26.5
7	16.5
8, 9	Very low
10	2.5
11	1
12	12
13	6
14	6.5
15	6.5
16	6.5
17	6.5
18	340
19	1
20	3
21, 23	Very low
22	360 (180 × 180)
24	25 total

RESISTORS

R	Ohms	Watts
1	330K	½
2	33K	½
3	15K	1
4	100	½
5	22K	1
6	33K	1
7	47K	½
8	100K	½
9	2.2M	½
10	470K	½
11	500K Potr.	
12	4.7M	½
13	680K	½
14	150	½
15	250K	½
16	33K	½
17	270	½
18	2.2K	5
19	1.5K	½
20	25K Potr. with SP switch	



trimmed by T1 T2—C2 T3 respectively—are switched by S2 to aerial tuning capacitor VC1 and coupled by C3 to triode-hexode frequency-changer V1. AVC voltage, decoupled by R9 C16, are applied through grid load R1.

Cathode is connected down to chassis. Screen (g2, g4) voltage is obtained from potential divider R5 R6 and decoupled by C13. Primary L14 C9 of IFT1 is in the hexode anode circuit.

Oscillator is V1 triode section connected in a tuned-grid shunt-fed circuit. Grid coils L8 (SW), L12 (LW), L10 (MW), which are trimmed by T4 T5-C5 T6 and padded by C6 (LW), C7 (MW), are switched by S3 to oscillator tuning capacitor VC2 and coupled by C4 to oscillator grid of V1. Self-bias for grid is developed on C4 with R2 as leak.

Anode reaction voltages are obtained inductively from L9 (SW), L13 (LW), L11 (MW) and switched by S4 through C8 to oscillator anode of which R3 is load. R4 is SW limiter.

IF amplifier operates at 470 kc/s. Secondary L15 C10 of IFT1 feeds signal and AVC voltages, decoupled by R9 C16 to IF amplifier V2. Cathode and suppressor grid are connected down to chassis. Screen (g2) voltage is obtained, in common with that of V1, from potential divider R5 R6 and decoupled by C13. Primary L16, C11 of IFT2 is in the anode circuit.

Signal rectifier. Secondary L17 C12 of IFT2 feeds signal to strapped diodes of V3. Rectified audio signal is developed across volume control R11, which is switched by S5 in its three radio positions through R8 and IF filter R7 C14 C15 to diode.

AVC. The DC component of the rectified audio signal developed across R11 is decoupled by R9 C16 and applied to grids of V1 V2 for automatic gain control.

Pickup signal from crystal pickup on autochanger is fed by S5 in its gram position through to volume control R11. Tone correction is given by R10 C17.

To prevent radio break-through on record reproduction aerial is connected down to chassis by S1, aerial tuned circuits are disconnected and VC1 shorted to chassis by S2, oscillator tuned coils are disconnected and VC2 shorted to chassis by S3 and oscillator anode is earthed through C8.

AF amplifier. Audio or pickup signal across volume control R11 is fed by C18 to grid of triode amplifier section of V3. Automatic bias for grid is developed on C18 with R12 as leak. Negative feedback from secondary L19 of output matching transformer OP1 is fed through R19 to R14 in cathode of V3. R13 is anode load and C19 anode RF bypass capacitor.

Output stage. Signal at anode V3 is fed by C20 through stopper R16 to grid of beam-tetrode output amplifier V4, of which R15 is grid load. Cathode bias is provided by R17 decoupled by C23. Screen (g2) voltage is obtained from HT line to V1 to V3 decoupling being provided by C24.

Amplified signal at anode is transformer coupled by OP1 to a 7in. PM elliptical speaker housed in compartment below autochanger shelf. Variable top-cut tone control is given by R20 with C22. Negative feedback from secondary L19 of OP1 is applied through R19 to cathode of V3. Sockets are fitted on L19 to allow connection of any low-impedance extension speaker.

HT is provided by indirectly-heated full-wave rectifier V5, the anode voltages of which are obtained from HT secondary L22 and heater current from secondary L21 of mains input transformer MT1. HT for anode of output valve V4 is obtained direct from reservoir smoothing capacitor C25. HT for V1 to V3 and screen V4 is resistance-capacity smoothed by R18 C24. Section of primary L18 of OP1, which is in series with R18, provides hum cancellation.

Reservoir smoothing capacitor C25 should be rated to handle 100mA ripple current.

Heaters V1 to V4 and dial lights D3 to D5 are parallel connected and obtain their current from secondary L23 of MT1. Indicator lights D1 and D2 which illuminate autochanger compartment are also parallel connected, but are only switched into circuit across L23 when S5, ganged to wavechange switch, is in gram position.

Primary L24 of MT1 is tapped for inputs of 110-115, 200-230, 231-250V 50c/s. C26 is mains input filter capacitor. S7, which is ganged to tone control spindle, is ON-OFF switch.

Autochanger is a Garrard three-speed RC72A fitted with plug-in standard and long playing microcell crystal pickup heads. The changer will automatically play eight 10in. or eight 12in. records at 33⅓, 45 or 78 rpm; 7in. records can also be played manually.

Chassis removal. Remove rear panel of cabinet and unplug LS lead from socket on chassis. Unscrew the two gramophone turntable illumination bulbs and undo and remove lampholder fixing screws. Remove screw securing connecting lead to plate aerial and remove aerial, earth and extension LS socket panel fixing screws.

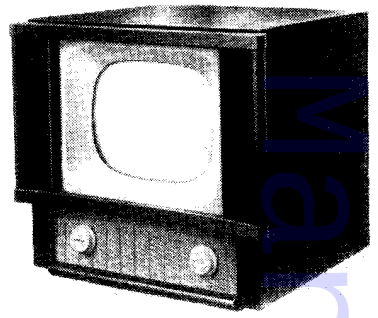
Remove the two screws fastening wood control knob panel to left-hand side of cabinet—bottom one of these also holds pick-up lead cleat. Undo single chassis fixing nut and bolt at right-hand side of shelf. Slide chassis to right to give clearance for control panel knobs and withdraw from cabinet.

If chassis is required to be completely removed, unsolder pickup screened lead from connecting tags at rear of tuning capacitors and unsolder gram motor mains lead.

TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune receiver to	Trim in order stated for maximum output
(1) 470 kc/s to g1 of V1 via .01mF	MW Band with gang set at max. capacity	Cores L17, L16, L15, L14
(2) 470 kc/s to aerial socket	—	Core L7
(3) 600 kc/s to AE socket via .002mF	600 kc/s	Cores L10, L4
(4) 1.5 mc/s, as above	1.5 mc/s	T6, T3. Repeat operations (3) and (4)
(5) 6 mc/s, as above	6 mc/s	Cores L8, L2
(6) 18 mc/s, as above	18 mc/s	T4, T1. Repeat operations (5) and (6)
(7) 150 kc/s, as above	150 kc/s	Cores L12, L6
(8) 300 kc/s, as above	300 kc/s	T5, T2. Repeat operations (7) and (8)

REGENTONE BIG 12



Fourteen-valve television receiver with 12-in. CRT giving a 10½ by 8½-in. picture. Figured walnut table or console cabinet. Models available for each of the five BBC channels. Suitable for 195-255V 40-60 c/s. Supplied by Regentone Products, Ltd., Eastern Avenue, Romford, Essex

THE receiver is a superhet operating on lower sideband of vision carrier. RF, frequency-changer and first IF stages are common to sound and vision channels. Vision interference and sound noise suppression circuits are incorporated.

Electrical picture centring controls are fitted in addition to usual mechanical adjustments on focus magnet assembly. Mains consumption approximately 130W.

Aerial input circuit is designed for 80 ohm coaxial feeder, the live lead and outer screening of which are isolated from chassis by C1 C2. A screened tag strip on top of chassis accommodates attenuator resistors R1 R2 R3 when necessary (values of R1 to R3 given in components table are for 3 to 1 attenuation). Aerial signal is fed either direct or through the attenuator network to tap on input coil L1.

RF amplifier. Signal across L1 is fed to grid of RF amplifier V1, the gain of which is controlled by R6, **RF Gain control,** in its cathode. Negative feedback across R4 reduces change in input capacity of V1 with variation of its gain.

Amplified signal at anode is single-peak transformer coupled by RFT2 through C5 to grid of frequency-changer V2. Secondary L3 is damped by R8 to maintain bandwidth to cover both sound and vision frequencies.

Frequency-changer V2 is a combined oscillator and mixer. Screen (g2) and grid (g1) are employed as a triode oscillator with the oscillatory tuned circuit L4 C8 C9 in screen (oscillator anode) circuit. Automatic bias for grid is developed on C5 with R9 as leak. RF signals, fed through C5 to g1, are mixed with oscillator signal to produce across L5 in the anode a vision IF of 14 mc/s and a sound IF of 10.5 mc/s.

IF amplifier. IF signals are capacitively fed by C7 to grid of common sound and vision IF amplifier V3. Gain is controlled by R15, **Contrast control,** in the cathode. Compensation for changes in input capacity with variation of gain is provided by negative feedback across R13. Bandwidth covering both sound and vision frequencies is maintained by use of low value grid load R12.

Vision channel. Separation of vision and sound IF signals is carried out in anode circuit of V3. Vision signal is bandpass transformer coupled by IFT2 to a further IF amplifier V4 the signal at the anode of which is finally bandpass-transformer coupled by IFT3 to vision signal rectifier diode V5A. Sound-on-vision rejection is given by L9 in grid of sound IF amplifier V7 and by L10 in cathode of vision IF amplifier V4.

Rectified video signal at cathode V5A is fed through IF filter and correcting network L14 R24 C18 C19 to grid of video amplifier V6, the output of which is DC coupled through an anti-flutter filter R30 C22 to cathode of CRT.

Interference limiter is diode V5B, shunted by R25 R26 R27, connected with its cathode to anode video amplifier V6, and its anode through C20 to chassis. C20 charges through R25-R27 to a potential equal to average picture signal level. When a high frequency interference pulse is received cathode V5B is driven negative but, due to comparatively long time constant of R25-R27 C20, its anode potential is unable to follow and the diode conducts to momentarily short the anode of V6 to chassis.

Degree of suppression is selected by S2, **Picture Tone control,** which provides choice of three values of diode load resistance.

Sound channel consists of IF amplifier V7, signal rectifier V8A noise suppressor V8B and beam-tetrode sound output valve V9. Sound IF signal of 10.5 mc/s is taken from anode of common vision and sound IF amplifier V3 and fed by C13 to L9 in grid of sound IF amplifier V7. Amplified signal is bandpass transformer coupled by IFT5 to signal rectifier diode V8A. Rectified audio signal across R45 C33 is fed by C34 through series noise suppressor diode V8B and thence by C35 through RF filter R48 C36 C37 to **Volume Control** R49 in grid circuit of beam-tetrode output amplifier V9. Audio output is passed by OP1 to a 6½-in. (table model) or 10-in. (console) PM speaker L19.

Noise suppressor. Diode V8B is normally held conducting by positive bias on its anode through R46. Time constant of R47 C35 C36 in its cathode is such that voltage across the network follows the audio signal fed by C34 to anode. When an interference pulse appears with signal, due to comparatively long time constant of R47 C35 C36 the anode V8B is driven negative to its cathode and the diode cuts off.

Sync separator. Video signal at anode of V6 is fed through R31 C23 to grid of sync separator V10. Positive going sync pulses drive V10 into grid