

# 'ERT' SERVICE CHART

## DYNATRON CORDOVA TRPI

Four valve portable tape recorder for twin track operation, released August, 1960, at 39gns., later increased to 42gns.

**Mains.** 200-250V AC 50c/s.

**Valves.** EF86, ECC83, ECL82, EM84.

**Rectifier and diode.** EC1/U800 HT rectifier; OA81 detector for level indicator.

**Output.** 1.5W.

**Speaker.** 10 x 4½in. elliptical, 3ohms.

**Deck and tape speeds.** Collaro Studio, 7½, 3¾ and 1½ips.

**Tracks.** Two, top track recorded left to right.

**Maximum spool size.** 7in.

**Microphone.** Acos Mic. 40.

**Manufacturer.** Dynatron Radio, Ltd.

**Service department.** St. Peter's Road, Furze Platt, Maidenhead, Berks.

### DISMANTLING

**Removal of deck and chassis assembly.** Remove mains adjustment link and any plugs and sockets connected to rear panel. Front securing bolts are exposed by raising handle and removing each brass clip. Unscrew the two bolts and remove strap.

Extract four chassis fixing bolts on base of cabinet, grip two brass pillars on top of unit and withdraw complete assembly from cabinet.

**Parting deck and chassis.** Remove front plastic escutcheon and tone and speed control knobs. Unscrew nut securing tone control pot to chassis, remove earth tag and withdraw control from its locating hole on tape deck plate.

Disconnect orange, red, grey and black leads from tag strip on top of chassis, also erase head cable (violet and black) and record/playback cable (red and blue). Disconnect

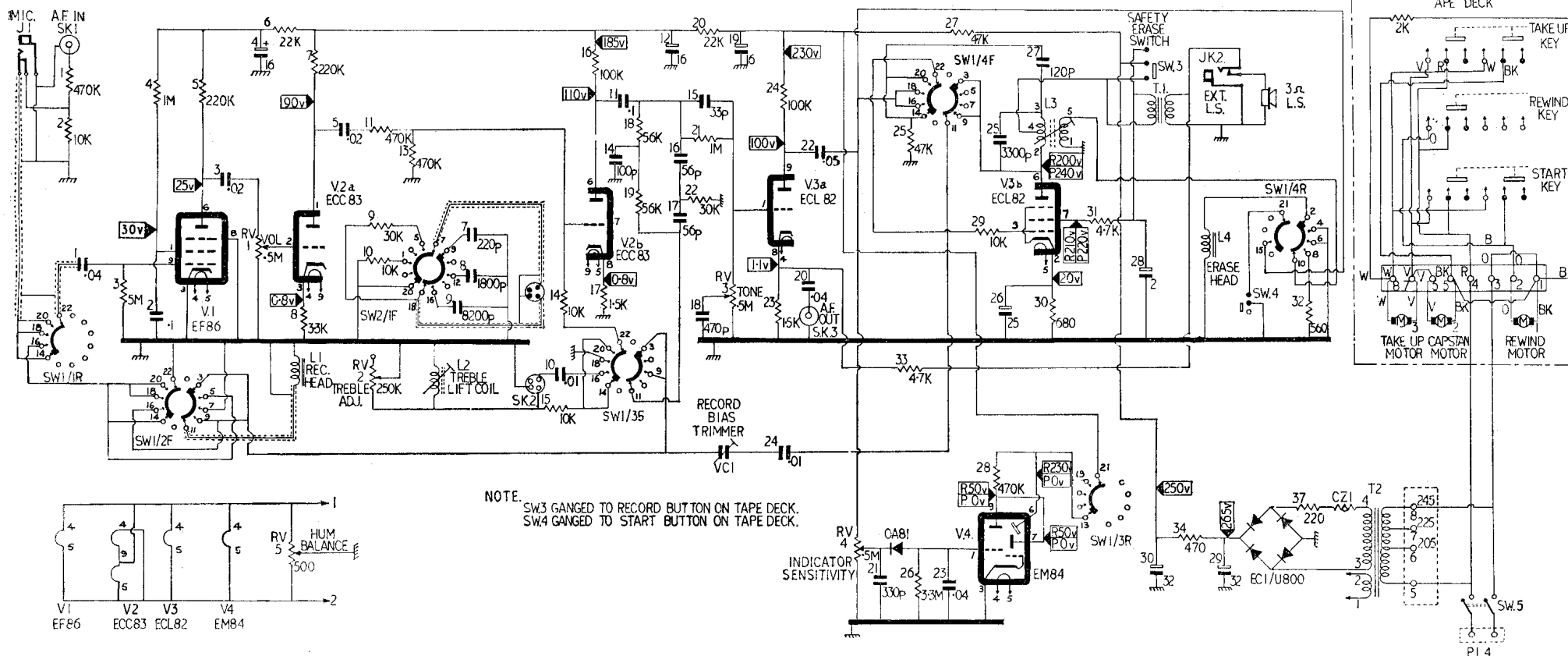
mains input leads (red and black) from connector block next to rear panel and unplug PL2 located on top of main chassis.

Remove bolts located at corners of tape deck plate and withdraw deck from main assembly.

### SERVICE NOTES

**Voltages.** Readings given on circuit are taken with Avo model 7. Where voltages differ on record and play, two figures are given.

**Circuit differences.** Some or all of the following differences may be found on earlier models. R2 is 47K and C11 is 0.02mF. C21 and R37 omitted. R23 and R33 omitted, with cathode of V3A going directly via T1 secondary to chassis. An extra capacitor, C31, 0.01mF, connected in series between C15/R21/RV3 and V3A grid, with a 3.3M (R38) from this grid to chassis; in addition,



a 6.8pF (C32) is connected between grid of V3A and grid of V3B. Various switch connections may differ.

**Inputs and outputs.** Microphone input at right of front panel (5M). AF (radio) input (500K), AF line output and extension speaker outlet (3ohms) on rear panel.

**Bias and erase.** For a preliminary adjustment of the oscillator, set bias trimmer (VC1) to maximum and preset treble control RV2 (coded red) to its mid position. Connect a valve voltmeter to pin 6 of V2, turn selector switch to RECORD and depress start key. Adjust oscillator core L3 for minimum reading on meter; this should be less than 0.6V RMS, assuming that hum has been minimised as under noise level.

To adjust erase volts, proceed as follows: Connect valve voltmeter to tag 2 on Sw1/4R (erase head lead) and switch to RECORD. Output should be 22V RMS  $\pm 10$  per cent; on switching to SUPERIMPOSE the output should fall to zero. Transfer V/V to tag 10 on Sw1/4R and check that reading is not less than 20V RMS.

To adjust bias, set volume control to zero and connect V/V (on 100V range) to bias trimmer VC1 (junction of trimmer and Sw1/3F) and chassis. Switch to RECORD and depress start button; adjust bias trimmer for a reading of 45V RMS.

**Head adjustments.** Azimuth alignment may be checked by unsealing the right-hand sprung screw and playing a standard high frequency test tape at 8kc/s with V/V connected to pin 6 of V2. Screw should be adjusted for maximum output.

**Sensitivities and record level.** To check sensitivities, turn volume control to maximum, tone control fully anticlockwise, speed at 7½ips and connect a 3ohm resistor across output.

When switched to PLAYBACK, 1W output (1.75V in 3ohms) should be produced when an input of 2.4mV at 3kc/s is applied to junction of C1 and Sw1. On the AMPLIFIER position, signal required at the AF input socket for the same output should be 120mV at 1kc/s.

Switch to RECORD or SUPERIMPOSE and inject a 1kc/s signal at the microphone socket; input required to produce 6V RMS at pin 6 of V2B should be 1.8mV. With this input, adjust magic eye sensitivity control RV4 (coded green) for minimum shadow on indicator. Transfer input to AF socket, when input for same output should be 100mV.

If model uses a 47K for R2, indicator should be adjusted to close with a 12mV 1kc/s signal at AF socket. This corresponds to a slightly lower recording level, giving better quality.

**Frequency response.** Switch to AMPLIFIER, turn volume to maximum and tone control fully anticlockwise. Inject a 1kc/s

signal at AF socket and adjust input for an output of 500mW (1.22V in 3ohms). With input held constant, output at 60c/s should be -10dB and at 10kc/s -1dB, both figures within  $\pm 2$ dB.

Switch to PLAYBACK, set speed switch to 7½ips and preset treble control RV2 (coded red) fully anticlockwise. Inject a 60c/s signal at pin 9 of V1 and adjust for an output of 500mW; on switching to the other two tape speeds output should remain constant. At same input voltage, change frequency to 3kc/s, when output at 7½, 3½ and 1½ips should fall, respectively, to -20.5, -16 and -11.5dB; all should be within  $\pm 3$ dB. On changing input to 10kc/s, output at each speed should be the same as at 3kc/s  $\pm 2$ dB.

To check response on RECORD, switch to 7½ips, set RV2 at mid position and feed a 20mV signal into AF socket (4mV if R2 is 47K). With constant input, record at 60c/s, 400 c/s, and 1, 2, 4, 6, 8 and 10kc/s. Switch to REPLAY and set volume for 500mW output on 1kc/s band. At other frequencies output should be within  $\pm 3$ dB of this level. Adjust RV2 for optimum response at 10kc/s.

Repeat tests at other two speeds, where highest test frequencies become 6kc/s and 3kc/s respectively.

**Noise level.** Switch to REPLAY, turn volume control to maximum and adjust RV5 (coded yellow) for minimum hum. Excessive non-hum noise may be due to magnetised heads, which should be defluxed if suspect.

With volume at maximum inject a 1kc/s signal at AF socket. Start recording at 7½ips and adjust input to almost close level indicator. Switch to replay and adjust volume control for the full 1.5W output (2.1V in 3ohms). When PAUSE key is depressed output should fall by at least 45dB.

**Superimposition.** Resistor R32 acts as load for oscillator in place of erase head when switched to SUPERIMPOSE. Superimposed input can be monitored by connecting earphones to AF output socket.

**Straight through amplifier.** When switched to AMPLIFY both input sockets are still operative, but amplifier feeds straight through to speaker.

**Tone control.** This control (RV3) should introduce 17dB of change at 10kc/s when rotated between its extremes.

#### MECHANICAL ADJUSTMENTS

**Flutter.** If this is experienced check the following:—Incorrect hub height, causing misalignment between tape on reels and guides; two set screws inside hub spindles must be adjusted for correct height. See that brakes are not binding; their adjustment is by means of motor slotted plate.

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