

# SERVICE ENGINEER

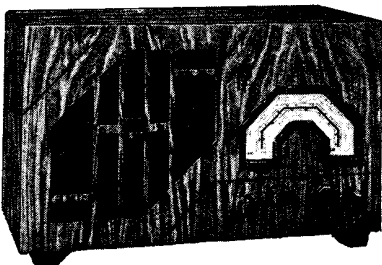
## AERODYNE MODEL 49 ALL-WAVE BATTERY THREE

**CIRCUIT.**—The coupling between V1, an H.F. pentode, and the aerial is through a series aerial condenser and an inductively coupled aerial coil which is iron cored on the medium waves.

V1 is coupled to V2, a triode, by a tuned anode directly coupled H.F. coil. Reaction is applied in the orthodox manner.

The L.F. output of V2 passes to V3, a pentode, through a parallel fed L.F. transformer, and from V3 to the speaker through a matched output transformer having C10 shunted across the primary for pentode compensating.

**Special Notes.**—The external speaker is connected on the low-resistance side of



The model 49 receiver recently introduced by Aerodyne Radio, Ltd., is a simple pentode-triode-pentode battery model which has the added sales feature of covering a short-wave band.

The chassis layout diagrams and notes on trimming the receiver are given on the next page.

the output transformer, and should have a speech-coil resistance of about 5 ohms. The dial lamp is rated at 3.5 volt .15

amp. and is screwed into a holder fixed to the tuning dial cursor.

C10 is located on the terminal strip on the speaker.

**Removing Chassis.**—Remove four knobs from the front of the cabinet which are secured by spring clips, two screws securing the dial to the inside of the cabinet and the three bolts from underneath the cabinet.

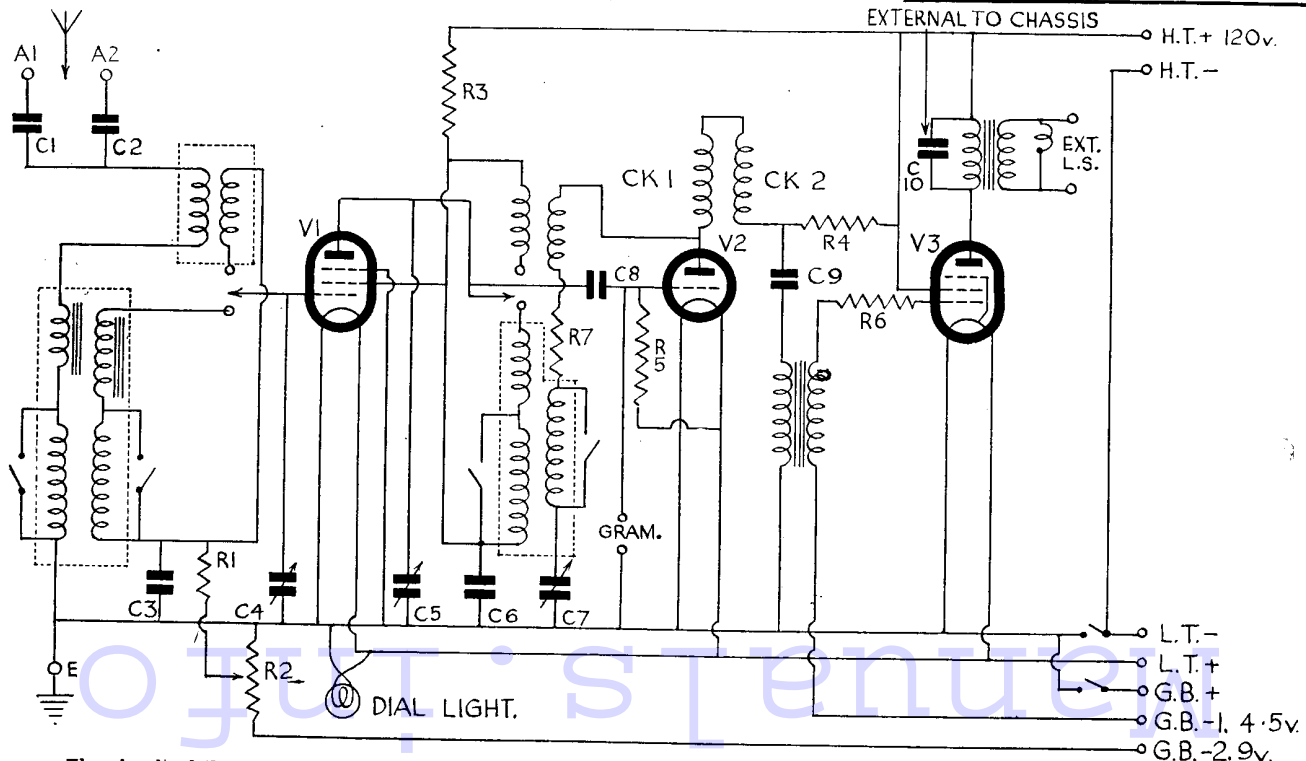
The chassis will then slide out far enough for the usual inspection and test without disconnecting the speaker leads.

### CONDENSERS

C.	Purpose.	Mfd.
1	Series aerial .. .. .	.0002
2	Series aerial .. .. .	.00005
3	Bias decoupler .. .. .	.1
4	Aerial tuning .. .. .	.0005
5	H.F. tuning .. .. .	.0005
6	V1 screen and anode decoupling .. .. .	.1
7	Reaction .. .. .	.0005
8	V2 grid .. .. .	.0003
9	L.F. coupling .. .. .	.1
10	Pentode compensating .. .. .	.005

### RESISTANCES

R.	Purpose.	Ohms.
1	V1 grid bias decoupling .. .. .	50,000
2	Volume control .. .. .	8,000
3	V1 screen and anode decoupling .. .. .	3,000
4	V2 anode feed .. .. .	50,000
5	V2 grid leak .. .. .	1 meg.
6	V2 grid stopper .. .. .	10,000
7	Reaction stabilising .. .. .	40



The circuit of the model 49 is simple and straightforward. There are short-wave coils in both the aerial and H.F. coupling circuits. Reaction is applied in the usual way, there being a shorting switch for the medium and long wave reaction coil.

# AERODYNE BATTERY SET (Continued)

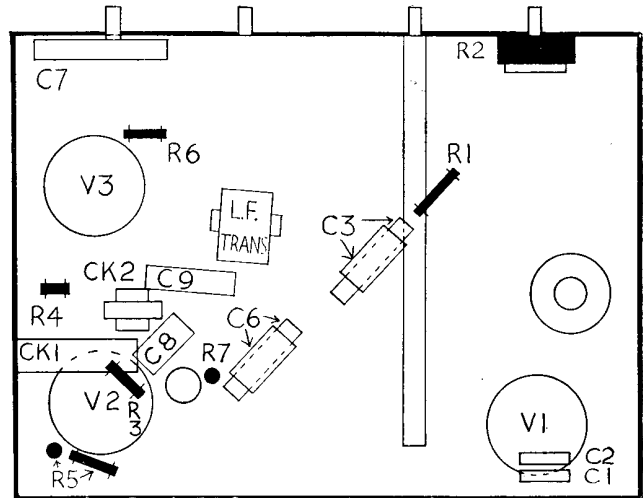
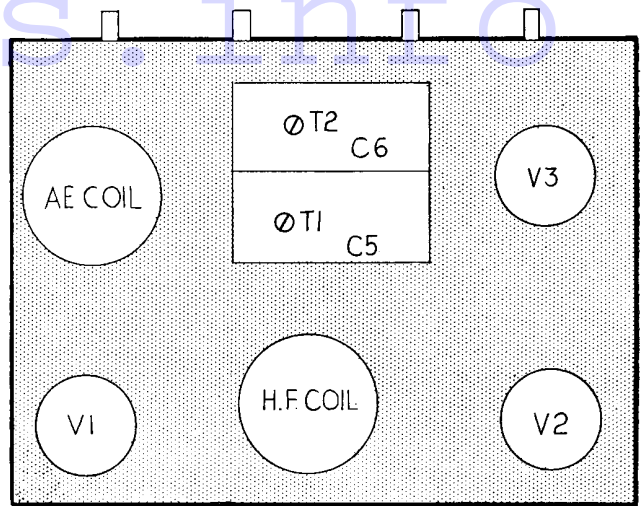
## TRIMMING NOTES

(1) Connect modulated oscillator tuned to 250 metres to aerial and earth terminals and output meter across external speaker terminals. Tune in the signal, and if the tuning pointer does not agree adjust it by slackening the two screws on the shaft. Check at 500 metres.

(2) With set and oscillator tuned to 250 metres adjust T1 and T2, on the gang condenser, for maximum reading on the output meter.

(3) Tune receiver and oscillator to 500 metres and readjust T1 and T2 for maximum on output meter.

As these chassis layout diagrams show the addition of a short-wave band does not complicate the construction of the Aerodyne model 49 battery three. The "tinted" diagram on the right shows the top "deck."



Most of the components underneath the Aerodyne chassis are supported by the wiring. A separate short-wave choke is connected in series with the usual choke in the detector anode circuit.

## VALVE READINGS

No signal. No reaction. Volume at maximum. Battery volts, 120.

V.	Type.	Electrode.	Volts.	M.a.
1	VP2 .. ..	anode ..	105	2.1
		screen ..	103	.75
2	PM IHL ..	anode ..	40	1.1
3	PM 22a ..	anode ..	114	5.5
		screen ..	120	1.3

(All Mullard)

## Servicing A.C.-D.C. Sets

IF the voltage available at the service bench is other than the usual 230 volts and it should be necessary to use a transformer for step-up or step-down purposes, it should not be forgotten that when testing an A.C.-D.C. receiver on this supply the receiver is no longer earthed directly via the mains supply.

It is, therefore, very liable to show signs of instability or an increase in hum level which would not normally be present.

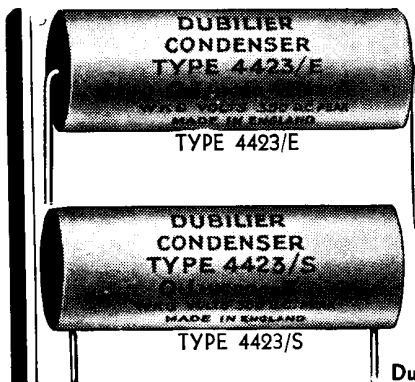
The larger universal receivers usually have a socket for earthing through a small fixed condenser, but the smaller midget sets usually rely solely on the earthed mains lead for their earth connection.

Where a step-up or step-down transformer is used, a direct earth connection to the output winding will restore conditions to normal. It may be necessary to try the connection on alternate ends

of the winding in order to restore the hum level to normal. It must be very carefully noted, though, that on no account must a direct earth connection be applied where a step-up or step-down auto-transformer is used.

## Sets for Review

Letters giving the names of receivers on which service reviews are required are welcome, and efforts are made to comply with all requests of sufficient general interest.



# DUBILIER

## NON-INDUCTIVE TUBULAR CONDENSERS

Modern radio receiving sets demand the use of condensers having outstanding characteristics to cater adequately for a wide variety of operating conditions. These conditions were constantly in the forefront of the minds of Dubilier technicians when designing this latest range of condensers, thereby ensuring the maximum dependability from their use. Some of the chief characteristics of these condensers are: High Insulation—Low Power Factor—Adequate Sealing. Samples and further details will be sent to Radio Manufacturers by request.

Dubilier Condenser Co. (1925) Ltd., Ducon Works, Victoria Road, North Acton, W.3.

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