BENSON AWP MIDGET PORTABLE

CIRCUIT.—The grid coils of V1, a triode hexode frequency changer, are frame windings L1, L2 and L3 supplying the input. A series grid resistance R1 is included to ensure stable oscillation, whilst the anode, oscillator anode and screen electrodes are also decoupled with the same object. The oscillator section of the receiver follows standard practice. It will be observed that coupling to an external aerial is provided to ensure adequate pickup for short-wave reception in screened localities.

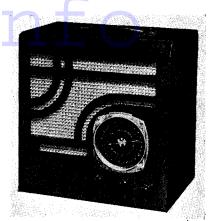
CC	ONDENSERS		
C.	Purpose.	Mfd.	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	A.V.C. isolator L.W. aerial fixed trimmer Chassis isolating V1 cathode bias shunt L.W. osc. fixed padder Oec. grid Dial lamp shunt V1 screen and osc. anode decoupling. V1 anode decoupling. V2 cathode bias shunt V2 screen decoupling. H.F. by-pass H.F. by-pass V3 cathode bias shunt Mains suppressor V3 anode decoupling. L.F. coupling. V4 cathode bias shunt Tone control H.T. smoothing H.T. smoothing Mains shunt L.F. coupling. Mains shunt L.F. coupling.	.1 .00004 .i .1 .00005 .00004 .25 .1 .1 .1 .0001 .0001 .0001 .0001 .0001 .0001 .2 .01 .5 .0 .05 .24 8 .1 .01	
24	S.W. osc. fixed trimmer	.002	

V1 is coupled to V2, an H.F. pentode operating as the I.F. amplifier, by means of a transformer tuned to 470 kc.

A further I.F. transformer effects the coupling between V2 and the strapped diodes of V3, a double diode triode. The diode load (R11) potentials feed the grid of the triode section of V3 via a coupling condenser and manual volume control and also provide the A.V.C. bias controlling V1.

V3 is resistance capacity coupled to V4, an output pentode, between anode and

R. Purpose. 1 V1 series grid	Ohms. 50 200
1 V1 series grid	
V1 cathode bias V1 screen and osc. anode decoupling. Dial lamps shunt V1 anode decoupling. Osc. grid leak. V2 screen potr. (part). V3 cathode bias V2 screen potr. (part). V3 diodes load V3 anode decoupling V3 anode decoupling V3 anode decoupling V3 anode decoupling V4 anode decoupling V4 anode decoupling V5 grid leak V6 grid stopper V6 grid stopper V7 cathode bias V8 grid stopper V9 grid stopper	15,000 140 1,000 25,000 140 20,000 50,000 50,000 1 meg. 2,000 10,000 10,000 500,000 10,000 500,000 1 meg. 160 50 50 670



The model AWP by Benson Radio Ltd., is a midget frame-aerial transportable suitable for A.C. or D.C. operation. It was originally known as the Cameo.

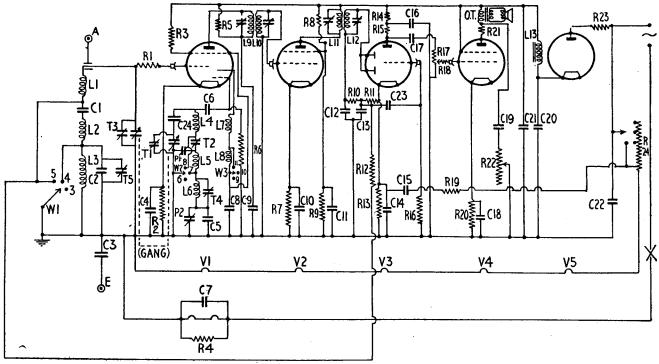
cathode of which is connected a tone-control circuit consisting of a variable resistance and fixed condenser.

Mains equipment consists of a mainsadjustment resistance that also operates as a barretter, a half-wave rectifying valve V5, electrolytic smoothing condensers and a separate smoothing choke.

a separate smoothing choke.

Chassis Removal.—Take off the back and the three grub-screw fixed control knobs. Then remove the two wood screws securing the metal brackets on the sides of the chassis deck to the sides of the cabinet.

Loosen the wood screw holding the bracket on the top of the wavelength scale and slide the bracket away from the scale. Unsolder the red and black flex leads from the speaker transformer and the bare



Short-wave reception is provided by the model AWP and there are external aerial and earth sockets in addition to the frame

earthing wire soldered to the transformer

The chassis can then be withdrawn to the extent of sundry leads and is accessible for most purposes.

Special Notes.—The chassis itself is sometimes live and should not be earthed.

There are two dial-illuminating lights in screw-in holders located behind the wavelength scale. These have M.E.S. bases and are rated at 6.2 volts .3 amp.

In our particular chassis, C15 and R19 were not included. The L.W. fixed trimming condenser (aerial) C2 is contained in the frame aerial structure together with

Alignment Notes

I.F. Circuits.—Connect an output meter across the primary of the speaker transformer, taking the precaution of inserting a 2-mfd. condenser in series with one of the output meter leads.

Connect a service oscillator between the top grid cap of V1 and chassis. Switch receiver to M.W. band, set gang to maximum, volume to maximum, and tone to '' high.''

Tune service oscillator to 470 kc. and

WINDINGS (D.C. RESISTANCES) Where Measured. Ohms. |Range.| Winding. R1 and R12. S.W. $\frac{12}{13}$ Inaccessible. Across trimmer on frame. Across tags. P1 and contact 7. Across T3. 18 L.W. S.W. M.W. L.W. S.W. M.W. L5 L6 L7 L8 Across tags. Osc. anode and screen V1. Anode pinVlandR5 Low 2.8 Top grid V2 and chassis. Anode pin V2 and H.T. line. R10+C12 and diode V3. L11 5.7 1.125.7 Cathode of V5 and H.T. line. Across tags— speaker panel. 280 L13 296 O.T. prim.

e e

adjust first the trimmers of I.F.T.2 and then I.F.T.1 for maximum response, reducing the input from the service oscillator as the circuits come into line.

Signal Circuits.—Connect the service

oscillator to a few turns of wire and place these near enough to the frame aerial to obtain an audible signal.

Short Waves.—Tune set and oscillator to 20 metres (15 mc.) and adjust T1 for maximum response.

The short-wave padding is fixed, but

check calibration throughout the range.

Medium Waves.—Tune set and oscillator to 250 metres (1,200 kc.) and adjust T2 and then T3 for maximum.

Tune set and oscillator to 500 metres (60 kc.) and adjust P1 for maximum, simul-

taneously rocking the gang.

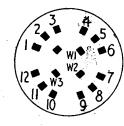
Long Waves.—Tune set and oscillator to 1,300 metres (230 kc.) and adjust T4 and then T5 (trimmer on frame aerial structure) for maximum.

Tune set and oscillator to 1,900 metres (158 kc.) and adjust P2 for maximum, simultaneously rocking the gang.

VALVE READINGS

No signal, volume maximum, M.W. min. cap., 230 volt. A C. mains.

V.	Type.	Electrode.	Volts.	Ma.
1	All Cossor. 202 STH .	Anode Screen Osc.anode	209 80 80	1.1 4.2 4.3
2	13VPA .	Anode	210 90	8 2
3 4	202 DDT 402 OT	Anode Screen	80 180 210	$\frac{1}{37}$
5	40 SUA .	Cathode.	230	-



Left, the single switch unit with contacts numbered to correspond with the circuit diagram.

Benson AWP on **Test**

MODEL AWP, All-wave Port-able. — Standard model for universal mains operation, 110-250 volts. Price 9 gns.

DESCRIPTION.-Midget transportable with self-contained frame aerials and incorporating a four-

valve, plus rectifier, circuit.
FEATURES.—Contained in a wood cabinet with carrying strap. Fullvision airplane-dial, calibrated in and station Separate frame for short waves. Provision for connecting an ex-ternal aerial and earth for short-wave operation. Controls for wave operation. Controls for tuning, wave selection and com-bined volume and master switch. Tone control at rear of chassis. LOADING .-- 56 watts.

Sensitivity and Selectivity.
SHORT WAVES (16-50 metres).—
Very good sensitivity for a portset, easy handling, able noticeable drift. Sensitivity well

maintained.

Medium Waves (200-550 metres).

Good gain and adequate selectivity with a reasonably clean background.

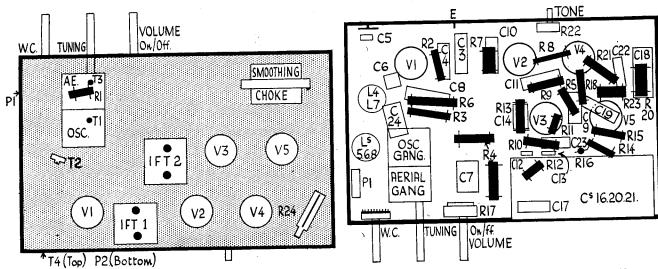
LONG WAVES (900-2,000 metres). Very good gain and selectivity. Slight interference on Deutschlandsender. All main stations easily received.

Acoustic Output.

Well-balanced tone, crisp and clean response and reasonable low note radiation for a small portable General balance attractive.

Replacement Condensers

EXACT replacement condensers for the All-wave Cameo are available from A. H. Hunt, Ltd., Garratt Lane, Wandsworth, London, S.W.18. For the block containing Cs 20, 21 and 16, there is unit 2517, 7s. 6d., and for C18, unit 2915, 1s. 9d.



These diagrams identify the parts on top (left) and inside the chassis. The trimmers are accessible from above and from the side. information remember

www.savoy-hill.co.uk