"TRADER" SERVICE SHEET

PYE 79B NEW BABY C

1949 version of the "New Baby Q," the model 79B (or L79B), is a 4-valve 2-band all-dry battery portable superhet employing button-based 7-pin miniature valves. The waveband ranges are 185-560 m and 1,000-2,000 m. Spring-clip connectors permit dismantling without the need for soldering.

Release date and original price: April 1949; £14 14s complete with batteries. Purchase Tax extra.

### CIRCUIT DESCRIPTION

Tuned frame aerial input by L1, C23 (M.W.), with the addition of loading coil L2 on L.W., precedes a heptode valve (V1, Mullard DK91) operating as frequency changer with electron coupling.

Oscillator grid coils L3 (M.W.), L3, L4 (L.W.), are tuned by C24, with parallel trimming by C25 (M.W.), C6, C26 (L.W.), and series tracking by C7 on both wavebands. Inductive reaction coupling by L5.

Second valve (V2, Mullard DF91) is a variable-mu R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings C3, L6, L7, C4 and C9, L8, L9, C10, in which the tuning capacitors are fixed and alignment is effected by varying the positions of the iron-dust cores.

## Intermediate frequency 465 kc/s.

Diode second detector is part of single diode pentode valve (V3, Mullard DAF91). Audio frequency component in rectified output is developed across load resistor R5, and passed via C13, manual volume control R6, and C14, R7, to grid of pentode section, which operates as A.F. amplifier. I.F. filtering by C11, R3, C12 in diode circuit.

The D.C. potential developed across R5 is tapped off and fed back, through a decoupling network R4, C2, as G.B. to F.C. and I.F. valves, giving automatic gain control

Resistance-capacitance coupling by R9, C16, R10 between V3 pentode and pentode output valve (V4, Mullard DL92), whose twin filament sections are wired in parallel. Fixed tone correction by C18 in V4 anode circuit. The A.F. voltage developed across T1 secondary winding is applied to a potential divider network R12, C19, R13, from which a fraction of the voltage is tapped off and fed to V3 C.G. circuit, giving negative feed-back.

giving negative feed-back.
Fixed G.B. for V4 is obtained from
the drop across R14 in the H.T. negative
lead to chassis. H.T. circuit R.F. filtering by C8.

# COMPONENTS AND VALUES

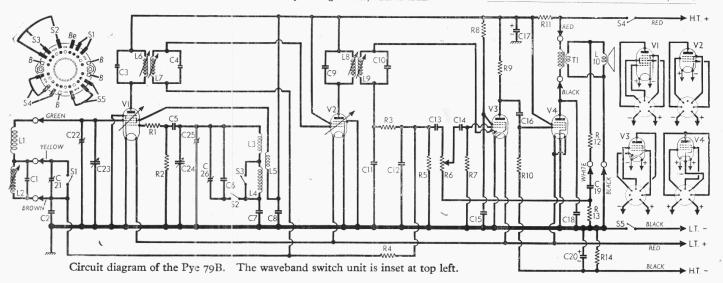
C1			
	Aerial L.W. trim	0.00005	
C2	A.G.C. decoup	0.05	J6
C3	1st I.F. transformer	0.00007	C2
C4	$\int$ tuning	0.00007	C2
C5	V1 osc. C.G	0.0002	H5
C6	Osc. L.W. trim.	0.00033	B2
C7	Osc. tracker	0.0005	B2
C8	H.T. R.F. by-pass	0.1	J5
C9	2nd I.F. transfor-	0.00014	C4
C10	mer tuning	0.00014	C4
C11	I.F. by-passes	0.0001	G7
C12	} 1.F. by-passes {	0.0001	H7
C13	A.F. coupling	0.01	G7
C14	)	0.002	H8
C15	V3 S.G. decoup	0.05	J7
C16	A.F. coupling	0.01	H7
C17*	H.T. feed decoup.	8.0	J6
C18	Tone corrector	0.005	J8
C19	FBcoupling	0.1	E1
C20*	V4 G.B. by-pass	50.0	J7
C21‡	Aerial L.W. trim	0.00005	D1
C22‡	Aerial M.W. trim.		A3
C23†	Aerial tuning	0.0005328	B2
C24†	Oscillator tuning	0.0005328	B2
C25‡	Osc. M.W. trim	~~~	B3
C26‡	Osc. L.W. trim	0.00005	B1

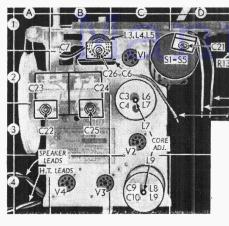
\* Electrolytic. † Variable. ‡ Pre-set. § "Swing" value, min. to max.



RESISTORS	Values (ohms)	Loca-
Osc. stabilizer V1 osc. C.G. I.F. stopper A.G.C. decoup. Diode load Volume control V3 pent. C.G. V3 S.G. H.T. feed. V3 pent. load V4 C.G. resistor	4,700 100,000 47,000 4,700,000 4,700,000 1,000,000 3,300,000 220,000 1,000,000	G5 G5 G8 H6 G8 E1 H8 G8 H8
H.T. feed resistor  Negative feed-back  potential divider  V4 G.B. resistor	4,700 10,000 4,700 680	F6 E1 J8
	Osc. stabilizer V1 osc. C.G. I.F. stopper A.G.C. decoup. Diode load Volume control V3 pent. C.G. V3 pent. load V4 C.G. resistor H.T. feed resistor Negative feed-back Foptential divider	Osc. stabilizer 4,700 V1 osc. C.G 100,000 L.F. stopper 47,000 A.G.C. decoup. 4,700,000 Volume control 1,000,000 V3 S.G. H.T. feed 3,300,000 V3 C.G. resistor 4,700 Negative feed-back f potential divider   4,700

отн	HER COMPONENTS	Approx. Values (ohms)	Loca tions.
L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 T1 S1-S3 S4 S5	Frame aerial L.W. loading coil Oscillator tuning {   coils   Osc. react. coil   lst I.F. { Pri   trans. { Sec   Speech coil   trans. { Sec   Speech coil   trans { Sec   W/band switches   H.T. circ. switch   L.T. circ. switch	1·0 9·0 1·5 2·0 8·5 9·4 6·7 6·7 2·75 870·0 0·25	B1 B1 B1 C2 C2 C4 C4 C4 D2 D2 D2





CIRCUIT ALIGNMENT

nect signal generator, via an  $0.1\,\mu\mathrm{F}$  capacitor in the "live" lead, to control grid (pin 6) of V1 and chassis, after removing

the original grid lead (green) and connect-

ing a 500,000  $\Omega$  resistor between pin 6 and

Switch set to M.W., turn gang and

volume control to maximum, feed in a

465 kc/s (645.16 m) signal, and adjust the cores of **L9**, **L8**, **L7**, **L6** (location references C4, G8, C2, G6) for maximum output. Finally, disconnect "live" signal

generator lead and resistor, and replace the original grid lead of V1.

R.F. and Oscillator Stages.—For these

operations the chassis and batteries must

be in their normal positions in the carrying case, and the signal generator leads

should be secured on the bench, close to the receiver. With the gang at maximum capacitance the cursor should coincide

with the two dots at the high wavelength ends of the scales. It may be adjusted in position by rotating the drive drum on its spindle, after slackening the two grub M.W.—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500

kc/s) signal, and adjust C25 (B3) and C22 (A3) for maximum output. Tune to 500 m on scale, feed in a 500 m (600kc/s) signal,

L.W.-Switch set to L.W., tune to 1.200 m on scale, feed in a 1,200 m (250 kc/s) signal, and adjust C26 (B1) and C21 (D1) for maximum output. Tune to 1,800 m on scale, feed in a 1,800 m (166.7 kc/s)

and check calibration.

signal, and check calibration.

the brown frame aerial lead.

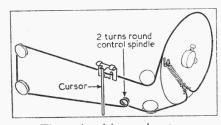
I.F. Stages .- For this operation the chassis must be set up on the bench. ConRear view of the chassis, showing the deck. The lead colours indicated here are repeated in the circuit diagram.

#### GENERAL NOTES

Switches.—\$1-\$3 are the waveband switches, and \$4, \$5 the battery switches, ganged in a 3-position rotary unit mounted in the same plane as the chassis and operated by a lever which projects through an escutcheon on the top of the case.

This unit is indicated in our rear (chassis deck) illustration, and shown in detail in the diagram inset in the top left-hand corner of the circuit diagram, where it is drawn as seen from the rear of the set. In the "Off" position (switch rotor fully anti-clockwise) all switches are open; in the M.W. (centre) position, S1, S3, S4 and S5 close; in the L.W. position, S2, S4 and S5 close.

Coils.—L1 is the M.W. frame aerial winding, which is mounted in the carrying case, and L2 is an iron-dust cored loading coil for L.W. mounted on the top frame support member.



The tuning drive cord system.

The oscillator circuit coils L3-L5 are mounted on the chassis deck, just above the gang unit, with C26 mounted at the free end of the

assembly

Batteries and Leads.—The H.T. battery is
a Pye K4 90V unit, in which only the two
extreme hegative and positive sockets are used.
Grid bias is automatic. The L.T. unit is a
Pye K8, a large-capacity all-dry type rated at
1.5V. It has a 2-pin socket outlet, in which
the larger pin is positive.
The Lead colours are indicated in the circuit

diagram.

Interconnecting Leads.
In addition to the three
frame aerial leads, there
are four leads from the
chassis which go to clips
on the speaker assembly.
The terminals for all
seven leads are identified
in the dismantling instructions, and the leads
are indicated in our rear
chassis view. where the diagram. chassis view, where the five lead colours are identified on the right and the two speaker

> Front side of the chassis, as

removal from the case.

seen

aft'er

C20 CORE ADJ. C16 L.T. LEADS

**VALVE ANALYSIS** 

Valve voltages and currents given in the table below are those quoted by the manufacturers, who give the grid bias voltage drop across R14 as 6.6 V. Measurements were made with a 1,000 ohms per volt meter, and the manufacturers state that owing to the very high values of V3 anode and screen resistors no figures are quoted for these electrodes.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 DK91	54	0.7	54	1.8
V2 DF91 V3 DAF91	54	2.1	54	0.9
V4 DL92	80	3.5	54	0.8

leads are indicated on the left. The colours are repeated in the circuit diagram

Drive Cord Replacement.—The makers' specification for this is Nylon braided glass yarn.
The overall length of the made-up cord in our sample, when the end loops were held by two pins driven into the bench, pulling the cord taut, was 373 ins.

taut, was 372 ins.

The method of fitting is very straightforward and obvious from the sketch in Col. 2, where the whole system is drawn as seen from the front right-hand corner when the gang is at maximum. The lower run of cord makes 2 turns round the control spindle, and the cursor is slipped on to the upper run after the cord is fitted. is fitted.

#### DISMANTLING THE SET

Removing Chassis.—Pull off the two control knobs, remove one of the threaded pins on which the carrying handle pivots, and withdraw the handle with the second pin attached, taking care not to lose the washers. washers:

washers; release the seven leads from the chassis at spring clips on the frame aerial and speaker transformer, and free the speaker leads from the soft-metal cleat on the sub-baffle; remove the single round-head wood screw securing the bottom edge of the chassis to the sub-baffle; support the chassis with one hand and with

the sub-balle; support the chassis with one hand, and with the other free the two captive screws accessible through holes in the tuning scale escutcheon adjacent to the control spindles; lift out the chassis, taking care not to lose the indicator plate and coiled spring on the switch lever

witch lever. switch lever.

When replacing, first fit the coiled spring, and
then the indicator plate, on the switch lever;
and when fitting the carrying handle do not
omit to replace the washers on the pivot pins,
between the handle and the escutcheon
moulding moulding.

While facing the rear of the carrying case, connect the seven leads from the chassis as follows:

follows: Frame aerial panel, numbering clips from left to right: 1, green; 2, yellow; 3, brown. Speaker connecting panel, numbering clips from top to bottom: 1, white; 2, black; 3, no external connection; 4, black rubber; 5, red

Removing Frame Aerial Assembly.-Withdraw Removing Frame Aerial Assembly.—Withdraw the two countersunk-head wood screws securing the frame to the bottom of the case, raise the assembly into the recess above it, and ease it out bottom foremost.

When replacing, the fixing holes should be on the rear edge of the bottom member, and the connecting leads should be replaced as previously described.

nerviously described.

Removing Speaker.—Remove the three nuts (with spring washers) securing the speaker to the sub-baffle.

When replacing, the transformer should be on the right.