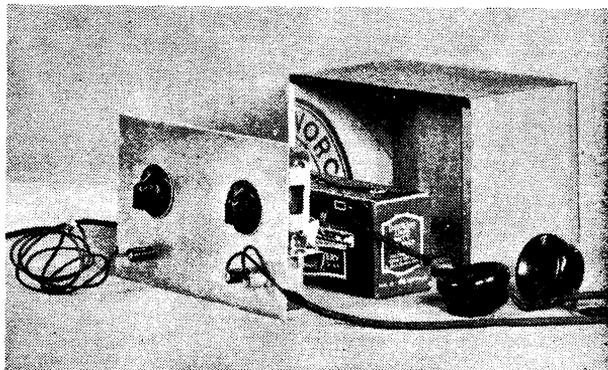


By request

LITTLE JIM

our most popular set

An ideal, self-contained, compact receiver for use by the side of your bed, or anywhere else where good head-phone reception of local stations is required. It is simple, reliable, and fool-proof.



This picture gives an excellent idea of how Little Jim fits together. The chassis fits tight against the battery, which is hard up against the back of the cabinet.

SO popular was the issue containing a description of Little Jim, which was on the streets shortly before the first Test Match, that we are forced to reprint the circuit and details for the convenience of many readers still asking us for them. There must be hundreds and hundreds of these receivers in operation, because we know for a fact that within a few days of the article being published, it was almost impossible to buy a single gang condenser in the city!

However, the circuit and wiring diagram given here should enable anyone to build it for themselves. As the photograph on this page so clearly displays, we built the cabinet from sections of an old butter box, which was then given a coat of grey duco, with a black band along the top and bottom edges of the panel. If you are very particular, you can get a cabinet specially built—leatherette covering is very suitable for this purpose, as it looks very well, and wears excellently. We don't particularly advise you to use a polished cabinet for a receiver so likely to find itself in all kinds of places. It scratches too easily.

ONE IN TWO

Little Jim is a one-valve set using a 6A6 valve as both regenerative detector and audio amplifier. It does this because the 6A6 is a twin valve, having two triodes in one envelope. So that your set, although using only the single valve, gives practically a two-valve result.

The receiver is built on a very small chassis, only a couple of inches deep, and having a front panel of 7 inches by 3½ inches. The depth is enough to allow for the tuning condenser and reaction condenser to fit in within its clearance, and as there are very few other components, there is no difficulty in fitting them mostly under the base. The chassis we used was made of aluminium, and similar chassis ready cut are obtainable now at most radio stores.

The idea of the receiver is to operate a pair of headphones with sufficient strength to allow really good reception of local stations, using a small aerial, which can be the wire mattress of the bed, if desired. The set itself stands on a bedside table, and the phones are placed under the pillow. There is enough volume

to hear any local station quite clearly without disturbing any other member of the household, and the two headphones which comprise the set may be placed one under each pillow, if two people want to listen in at the same time.

The net result is a particularly convenient and comfortable way of hearing cricket descriptions, or any other programmes, for that matter.

The consumption of the set is so low that it may be left on all night if desired, without involving any noteworthy expense. The valve itself consumes only a few watts of electricity, much less than even a small lamp, and the drain on the B battery used for high tension is only about 1 milliamp.

The filament of the valve is lit from a small transformer giving 6 volts at about

WHAT IS YOUR IDEA FOR A SMALL SET?

Little Jim is our idea of the most useful and practical small receiver. Have you got a better one? If you have, we would be pleased to use it for the basis of a technical article in our paper. Send us a copy of the circuit and a short description of the set, so that we can see for ourselves

whether you have beaten us in the search for the small and simple. It may be that you have found improvements on the receiver as it stands. Your suggestions on this point will be welcomed. Next month, we hope to describe a "Little Jim" built for operation entirely from batteries.

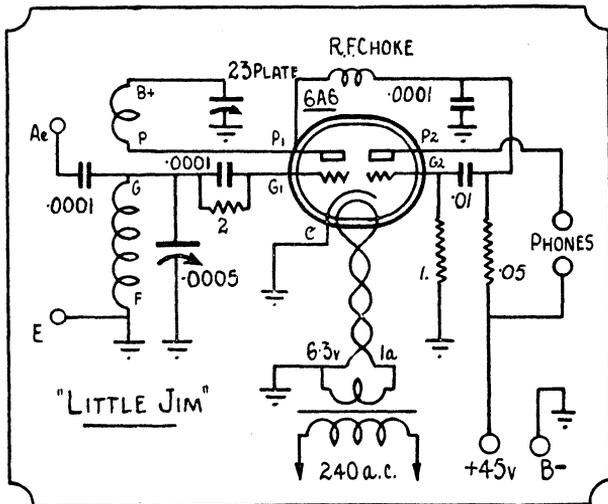
PARTS LIST
LITTLE JIM

Panel, 9½ in. x 6½ in. } See text.
Sub-panel, 8½ in. x 2 in. }

- 1 Tuning coil—see text.
- 1 Tuning condenser up to .0005.
- 1 23-plate midjet condenser.
- 1 6A6 valve.
- 1 Filament transformer, 6.3 volts.
- 1 7-pin socket for 6A6.
- 1 2 meg. resistor.
- 1 1 meg. resistor.
- 1 50,000 ohms resistor.
- 2 .0001 mica condensers.
- 1 .01 tubular condenser.
- 1 R.F. choke.
- 4 Terminals.
- 1 45-volt B battery, light duty.
- 1 Pair headphones.
- One doz. nuts and bolts, 6 solder lugs.
- 5 feet of hook-up wire, power flex and plug.
- 2 Knobs or dials, insulated solder lug.
- Cabinet as desired.

1 amp. We used a transformer because it is much more satisfactory than batteries, and would cost no more than batteries of sufficient size to run the valve for a respectable period with satisfaction. Further, there is no danger of the batteries dying out at the wrong moment, as they often have a habit of doing.

Our photograph shows that we housed the complete set with the 45-volt light



Here is the circuit of the set. Only a dozen components to worry about!

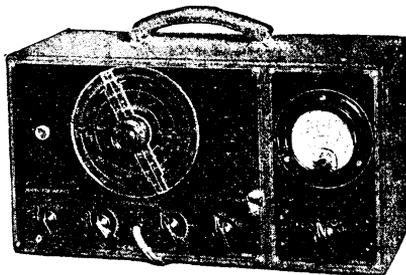
duty B battery in a small cabinet made out of a butter-box. The battery measures 8½ x 2½ inches looking at it from the

top, which would make the side measurements of the cabinet about 5 x 8½ inches, to preserve a good fit, and pre-

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IT'S a really high-grade job; all wording etched on non-ferrous metal; leather carrying handle, rubber feet. Pilot light and black instrument knobs on each model. Five-inch dial reads direct in Kc/s, Mc/s (top half), and corresponding metres (bottom half); smooth planetary movement—adjustable for slip. Two attenuators on both models.

SPECIFICATIONS: Model 306, Battery-operated, with minimised battery drain ("B" battery drain approximately 5 ma., at 67.5 V.; "A" battery, 4.5 V., drain approx. 120 ma., including Pilot).

Band spread 150 Kc/s to 16 Mc/s on fundamentals without breaks; above 16 Mc/s by using 2nd harmonics. R.F. signals modulated at will. High degree of stability and accuracy, particularly over 175 and 445 Kc/s channels. Model 307, A.C. Mains operated. Feed back prevented by line filters, thus maintaining good attenuation. Bandsread 150 Kc/s to 25 Mc/s on fundamentals without breaks. Both models available with or without built-in output meter.

OUTPUT METER: 3in. round type. Special Alnico magnet gives approx. 300% increase over old style. Ranges: 2, 5, 10, 50, 250. Provision for measuring A.C. Volts. All necessary cards and instructions supplied.

306 Battery Operated	£10 10 0
306a (illustrated) ditto with output meter	15 15 0
307 Mains Operated	10 17 6
307a ditto with output meter	16 2 6
Output Meter as used on both models	5 10 0

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vent the battery from moving about. Not that it could do any harm if it did.

All the components used are standard. The tuning condenser may be anything from .00035 to .0005 mfd., and the reaction condenser is a 23-plate midget. The components under the chassis should be obtained in as small sizes as possible—the mica condensers, for instance, can be the "postage stamp" type, and the resistors all 1-watt types. It is easier to work in small components than large ones.

The tuning coil was specially made for this set by R.C.S., and connections to it are made by means of the solder lugs mounted on the former itself. One of these is connected to the chassis—the "F" or grid return lead—and if this connection is made to a solder lug, it will make the coil self-supporting. The

Actual Size Wiring Diagram

The original Little Jim has been in constant use since it was first built nearly a year ago. It still has the same B battery as when new, and it still gives the same satisfaction as it did when first built. When this battery is exhausted, it will mean about 9¢ for a new one. This represents the entire running costs of the set for that period. One could scarcely wish for better economy than this and as long as you don't leave it running every night and every day, there is no reason why you should not get the same results from your copy of it.

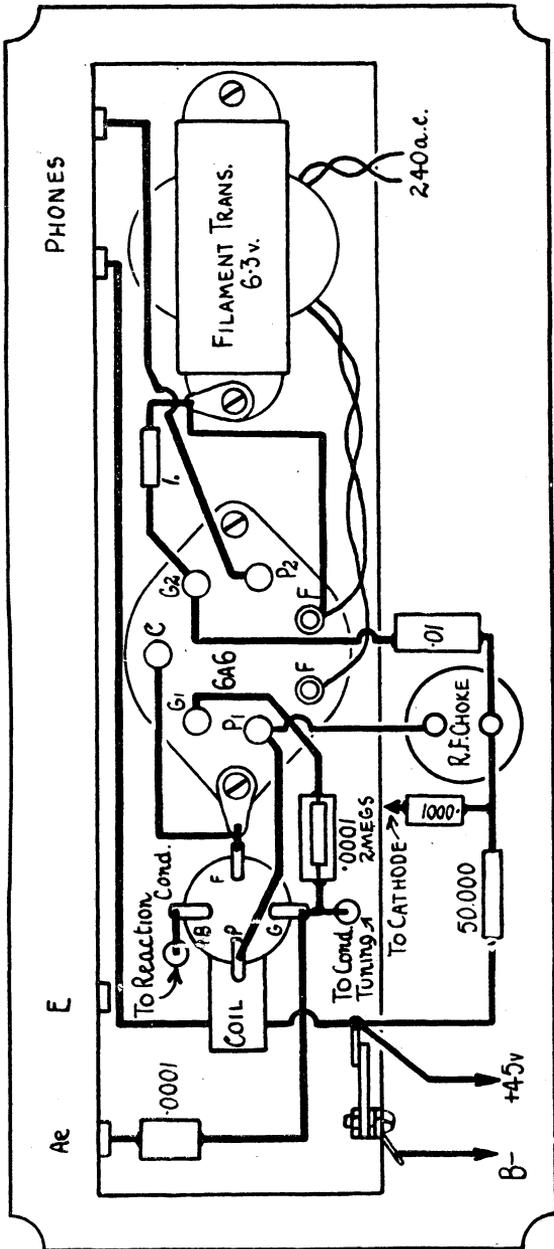
remaining connections are made to the other lugs, which are color coded.

The aerial connection is made through the .0001 mica condenser. Since the original set was described, we have found some getting best results by using a .00005 condenser here, as we suggested at the time. Some may not be able to tune over the full broadcast band with the bigger condenser, particularly if the aerial is too big.

THE AERIAL

The set should not be operated with a big outside aerial. Being of a modest nature, it is not able to separate all the local stations if fed with a big aerial. If you use the mattress of the bed, or about 12 feet of wire, there should be no trouble in getting plenty of volume from practically all the locals, and with complete separation except when operated close to some powerful station.

We have consistently used the mattress as an aerial with the original Little Jim, and have no trouble in getting plenty of punch and adequate selectivity.



Left: The wiring diagram. Don't forget to insulate the joins between the transformer A.C. leads and the length of power flex.