

AUSTRALIAN MILITARY FORCES

## AEME WORKSHOP MANUAL WM 27

**TELECOMMUNICATION TEST EQUIPMENT**

Section 1.17

---

**WYA 4412 VOLTMETERS DIODE (AUST) No 1**

---

(1) *Function*:—

To provide a comparative method of checking the power output and modulation depth of the "B" set sender in Wireless Sets No 19 Mk II.

(2) *Ranges*:—

Frequency — 235 Mc  
Meter scale not calibrated in volts.

(3) *Dimensions and Weight*:—

Overall: 6-ins x 6-ins x 7-ins  
Weight: 6 $\frac{3}{4}$ -lb.

(4) *Service Uses*:—

Used in Wireless Sections of 2nd, 3rd and 4th Echelon AEME Workshops.

(5) *Control*:—

Controlled Store "A".

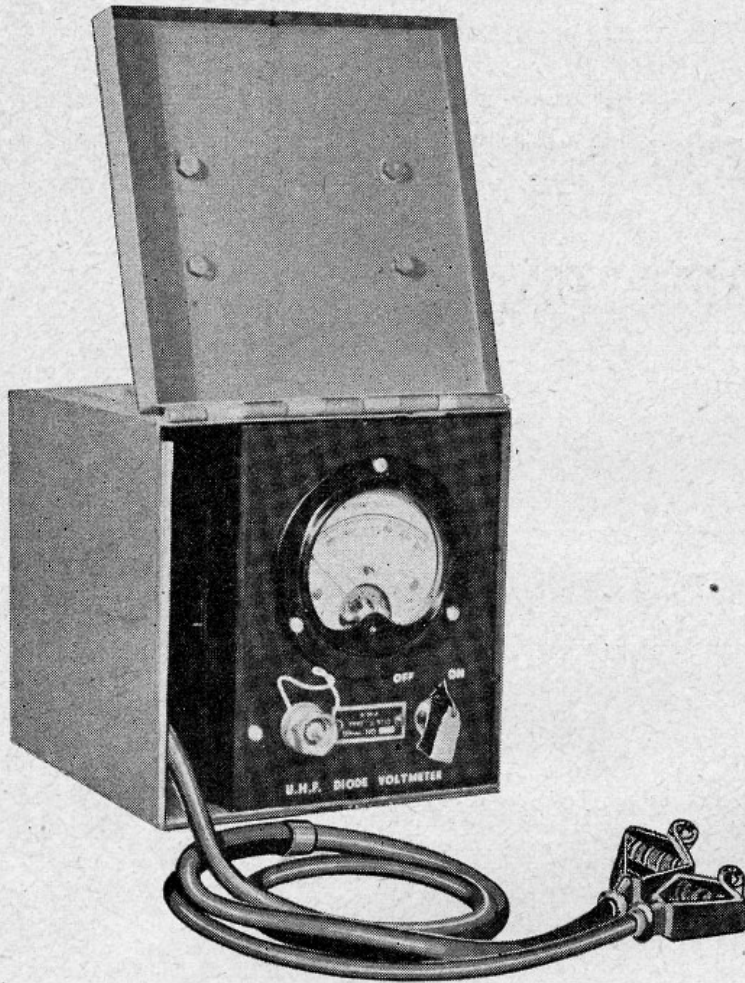
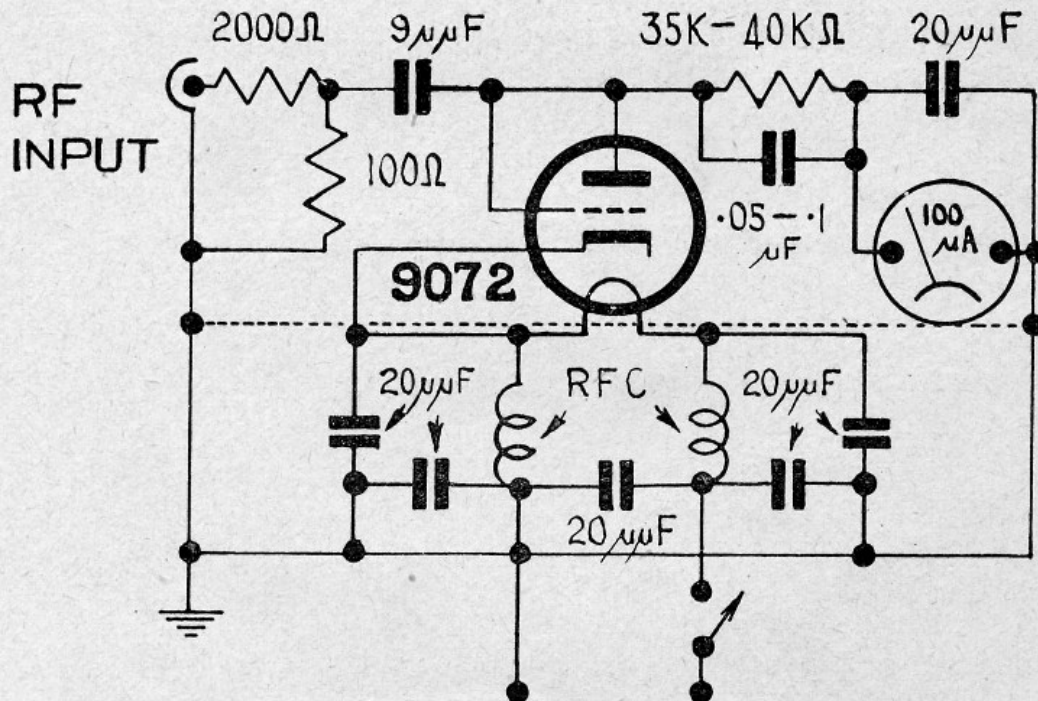


FIG 1—WYA 4412 VOLTMETER  
DIODE (AUST) No 1



(6) *Description:*—

This diode voltmeter employs a UHF triode, type 9072 operated as a peak rectifier, the rectified current being measured by a 100-microampere meter mounted on the front panel. Heater current for the valve (6.3 volts at 0.3 amps) must be supplied from an external source, a shielded battery cable and associated clips being provided with the instrument, and normally housed in the left-hand side of the case.

A spare valve is housed in a socket on the sub-panel.

The instrument is designed for testing the power output of the "B" set sender of Wireless Set No 19, connection being made to the "B" set by a 50-in length of coaxial cable.

The input circuit to the voltmeter consists of a 2000-ohm and a 75-ohm non-inductive resistor connected in series to earth. The voltmeter is tapped across the 75-ohm resistor. Input impedance is therefore resistive and of the order of 2000 ohms at the frequency of operation. The meter reading is proportional to the voltage across this load, that is, proportional to the power output of the "B" sender.

(7) *Accessories:*—

Coaxial cable, approximately 50 inches in length, fitted with coaxial connections. (Supplied with instrument.)

(8) *Test Procedure:*—

- (a) Connect diode voltmeter to a source of heater supply. 6 V AC or DC.
- (b) Connect "B" set sender aerial plug to instrument by means of coaxial connector provided.
- (c) Switch "ON" and allow to warm up to constant operating temperature.
- (d) Switch on "B" set sender.

An unmodulated carrier will give an indication on the meter of approximately 60 to 80 microamperes. When modulated by speaking into the microphone, the meter reading will increase to a higher value.

Modulation percentage, approximately, can be calculated from the following expression:—

$$\text{Modulation \%} = \frac{E1 - E2}{E2} \times \frac{100}{1}$$

Where E1 Meter Reading (Carrier Modulated)  
E2 Meter Reading (Carrier Unmodulated)

(9) *Relevant Service Publications:*—

Signal Training Vol III—Aust Pamphlet No. 15

and

DME Technical Instruction No. Z101-20

refers to

(ZBA 4445) Diode Voltmeter No. 1 (Aust) which is equivalent to WYA 4412 Voltmeter Diode (Aust) No. 1.