

# Technical Officer (Electronics)

## General Information Guide

### Working Conditions

#### A Profile of The Bureau

The Bureau of Meteorology is Australia's national weather service. It provides forecasts and warnings to the public, aviation industry, defence services, primary industry and many other specialist user groups.

It also gathers and disseminates climatological data, provides consultative services, and undertakes meteorological research. In support of these functions the Bureau operates extensive observation, communication and computer systems, and co-operates in the use of international satellite and communication systems.

The Bureau has a large contingent of operational staff employed throughout Australia and its Territories (including Antarctica). One specialist category - *Technical Officers (Electronics)* who work in the Bureau's *Engineering Services Section* - are located in 7 regions (State based), as well as at the Head Office in Melbourne, to provide engineering support of the Bureau's *Observations network*.

The Bureau's Observations network includes:

- Over 50 Meteorological Offices equipped with a wide variety of electronic and electro-mechanical devices
- Over 600 Automatic Weather Stations (AWS), many in remote localities.
- Over 60 weather radars, some in remote localities
- 7 Regional Forecast Centres (RFC), located in Capital cities

#### The Work of the Technical Officer (Electronics)

Technical Officers (Electronics) are involved in the installation, maintenance and performance monitoring (and on a limited scale, development) of the entire range of the Bureau's electronic and electro-mechanical equipment.

These duties are carried out by teams of Engineering Services staff working out of Regional Maintenance Centres, which are situated outside the CBD in capital cities and in some major cities, on equipment located throughout the State or region. This will necessitate travelling at the Bureau's expense to Meteorological sites in remote localities by a variety of transport – eg. car, 4WD, light aircraft, boat and helicopter.

Although Technical Officers (Electronics) are not generally required to work shift work, they are considered to be available for emergency work and may therefore be required to work or travel outside their normal hours.

## Electronic and Electro-mechanical Equipment

The Bureau's equipment uses a combination of mechanical, analogue, digital and microprocessor techniques to support a variety of electronic and electro-mechanical systems such as:

### a) RADAR

Equipment used for the measurement of *upper atmosphere conditions*, eg. wind speed, wind direction, rainfall, cyclone tracking, wind shears, etc:

- ❖ Windfinding Radar
- ❖ Doppler Weather Radar
- ❖ Wind Profilers



### b) COMMUNICATIONS

Systems to provide transmission of meteorological data from the observation site to analysis centres:

- ❖ Modems (Radio and PSTN)
- ❖ Cellular phone networks
- ❖ Digital data radio
- ❖ LAN / WAN



### c) UPPER AIR MONITORING

Equipment used to support *upper air measurements*, which provides a vertical profile of temperature, humidity, pressure and winds:

- ❖ Radiosonde receiving and tracking
- ❖ Autosonde
- ❖ Remote Balloon Launchers
- ❖ Hydrogen Gas Generation and storage



### d) SURFACE INSTRUMENTATION

Equipment used for the measurement of meteorological parameters such as wind speed and direction, air temperature, humidity, rainfall, soil temperature:

- ❖ Automatic Weather Stations
- ❖ Ceilometers
- ❖ Visibility Sensors
- ❖ Thunderstorm sensors
- ❖ Sea-level sensors





**Locations of Engineering Services (ES) Maintenance staff**



**Legend:**

- (R)** = Regional Maintenance Centre (capital city suburbs, up to 10 staff)
- (S)** = Sub-Regional Maintenance Centre (Regional cities, up to 3 staff)
- (M)** = Meteorological Office with a resident Technical Officer (Electronics)
- (T)** = Temporary Posting

**Not shown:**

Antarctic Stations (Casey, Davis, Mawson and Macquarie Island – all type M & T)

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