ELECTRONICS ENGINEER

OVERVIEW OF THE ROLE

As an Electronics Engineer you will install, commission, maintain, calibrate and modify electronic instruments and systems for the collection, reduction and analysis of data. You will have good hardware and software skills. You will be technically resourceful and be able to operate with minimal supervision. You will also produce regular, comprehensive reports on the status of observatory equipment.

The role is largely supportive in that you will apply professional engineering knowledge and skills to the investigation and monitoring aspects of the research program. It principally supports the atmospheric and glaciological science activities of the Antarctica and the Global System theme but also assists the activities of the broader science program at Davis. The role will involve working closely with scientists at the station and in Australia.

A training period of approximately two months precedes your deployment to Davis station. You may also be required to assist with replacement orders from the station, preparation of technical equipment and documentation in support of research projects and general duties (including packing of equipment, inventory maintenance and general clerical assistance). During your training at Kingston, you will attend courses specific to your duties in Antarctica. Training commitments are such that you must be available to start on the advertised commencement date and will be expected to take only one week of pre-departure leave before travelling to Antarctica. The period away from Australia will generally be around 12-15 months depending upon transport schedules and work programs.

On returning to Australia, you will participate in a comprehensive debrief at the AAD lasting approximately one week.

The Electronics Engineer is a winter job only at Davis station.

Listed below is some of the equipment that is operated at and around Davis station. Specific and transferrable skills are valued:
- Atmospheric radars operating at various frequencies (MFSA 2MHz middle atmosphere wind radar; MST 55MHz wind profiling radar; 33MHz meteor detection and wind profiling radar)
- Optical instruments for temperature and wave measurements (Scanning OH Spectrometer (830nm); Fourier Transform Spectrometer)
- Space weather monitors (Digital Ionosonde; Imaging Riometer)
- Cloud monitors
- Sea ice monitoring equipment
- Glaciological radars and remote ice monitoring equipment

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WHAT YOU WILL DO ON THE JOB

As an Electronics Engineer you will be required to undertake some or all of the following:

- Install, commission, maintain, calibrate and modify electronic instruments and systems for the collection, reduction and analysis of data.
- Maintain accurate records relating to the maintenance and operation of technical equipment.

As a proactive and positive member of the community you will:

- Maintain a personal and practical commitment to AAD policies and standard operating procedures (including work, health and safety and environmental policies). Training and guidance in regard to all responsibilities relevant to your position will be provided.
- Perform duties to support the community life of the expedition, such as general kitchen duties, garbage clearance, general cleaning duties, and assisting other expedition members with official programs.
- Work in areas outside of your primary role, for example, providing assistance to other areas or science projects, or participating in general labouring tasks such as clearing snow or handling cargo.

The Application Process and the Life as an Expeditioner pages contain critical information about living and working in Antarctica, and must be read in conjunction with this job description prior to applying.

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Technical Criteria

1. Essential
You can only be selected for this role if you have these <u>essential</u> skills and licences.

Qualifications/licences (provide copies in your application):
- An Engineering degree majoring in electronics from an Australian University, or qualification of equivalent standard from an Australian or overseas university.
- Evidence of eligibility for graduate membership to the Institution of Engineers Australia.
- A current, unrestricted "C" class (manual) Australian driver's licence.
- A current statement of attainment in the following units of first aid, or the ability to attain prior to commencement:
  - Provide First Aid (HLTAID003) valid for at least 12 months beyond the date of commencement; and
  - Provide CPR (HLTAID001).

Recent relevant experience:
- Detailed design, implementation and testing of analogue and digital electronic circuits and systems (including microcontroller based systems).
- Ability to be resourceful and innovative in technical aspects of the work including the ability to fault find and calibrate modern electronic instrumentation. Have the ability to repair electronic equipment at a component level (demonstrated experience of such when operating with limited resources is desirable).

2. Desirable
These are not essential to the role, but they will make you more competitive against other applicants. To be suitable you will need to have at least some of these.

Recent relevant experience (within the last 5 years):
- Have a demonstrated commitment to producing and maintaining high quality technical documentation including a demonstrated understanding of, and commitment to the use of formal documentation management systems.
- Have a demonstrated ability to manage time and other resources while working with limited supervision and the ability to provide timely, accurate and complete reports.
- Have recent knowledge of, and experience in, the use of computers in technical applications. This should include the use of languages such as "C++" and "Python", experience with formal software development tools and experience in using and administrating modern Linux and Windows operating environments.
- Possess skills of particular relevance to the range of equipment listed.

Applications are assessed on the basis of skills you can demonstrate that relate to the criteria listed below. Answers containing examples from your work history that demonstrate your knowledge, skills, attributes and extent of your role in relation to each criterion are required. A separate document can be uploaded to assist this process. Assessments against these criteria will be used to determine further progress through the job selection process.

Our vision is to **ensure that Antarctica is valued, protected and understood.** We achieve this through **our values of Working Together, Courage, Diversity and Excellence, and our Personal Qualities**.

W O R K · C O M M U N I T Y · O R G A N I S A T I O N

Personal Qualities Criteria

The Australian Antarctic Division assesses the personal qualities required to successfully live and work in an isolated Antarctic or sub Antarctic community. Successful candidates need to demonstrate the personal qualities criteria detailed below and this will be assessed during the selection process.

WORK QUALITIES

The personal qualities that relate to an expeditioner being able to effectively complete their work.

Versatile

Expeditioners should be able to change their processes to meet changes in their work, though they should recognise when this is impractical or unsafe. Expeditioners should be able to manage work responsibilities alongside community interests and personal time.

Proactive

Expeditioners should be able to anticipate and take control of situations rather than simply waiting to respond to a situation or task. They should demonstrate initiative in the completion of tasks which may be distinct from their work duties, including broader AAP tasks including support to science and social or community issues.

Focus on Excellence

Expeditioners should be self-motivated and have a strong sense of their self-worth without being overconfident or obnoxious. They should feel pride in the completion of work to a high standard but maintain a drive for continued improvement, both as an individual and a community. They should recognise the value which a collective sense of excellence provides and be an active contributor to it by giving and receiving constructive feedback.

COMMUNITY QUALITIES

The personal qualities that relate to an expeditioner being committed to the organization, its mission and its work.

Emotional Intelligence

Expeditioners should be able to understand and manage the emotional and physical impacts of their actions on their colleagues. In addition, they should also be able to differentiate between the intent and outcome of their colleagues' actions. Expeditioners understanding of their emotions, and the emotions of their colleagues should translate to actions which minimise conflicts and further community outcomes.

Community Mindedness

Expeditioners should be self-sufficient, but they should also be comfortable living and working alongside one another, while acknowledging and celebrating their differences. They should strive to contribute toward team outcomes which build the community while also maintaining their work responsibilities. Expeditioners should value a sense of harmony within the community but be able to respond to episodes of disharmony in a manner which is respectful of the individuals involved and builds the community

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Self-Leadership
Expeditioners should show an appreciation of the work completed by their colleagues and identify areas for improvement and growth in a considered and community-focused approach. Expeditioners should be able to adapt their personal style to deal with different workplace situations, e.g., from business-as-usual activities to those required to deal with a crisis on station including those situations that require their particular skills or expertise and those of a more general nature.

Assertiveness
Expeditioners should feel comfortable expressing their views and should recognise how and when it is appropriate to do so. They should be willing and able to ask questions and seek-out answers. Expeditioners should value one another's feedback and, where appropriate, they should reach a consensus before acting.

ORGANISATION QUALITIES
The personal qualities that relate to an expeditioner being committed to the organization, its mission and its work.

Flexibility
Expeditioners should be flexible in their thought processes, procedures, and interpretations. They should recognise the complexity of situations and understand how this impacts their responses. They should also recognise how the unique nature of the AAP environment may lead to differences in the application of generic work procedures and practices in Antarctica.

Organisational Alignment
Expeditioners should value their work and understand how it contributes to the work the AAP is doing to support Australia's interests in the Antarctic. They should recognise the value of Antarctic science and Australia's continued presence in Antarctica. Expeditioners should identify with the values of the organisation and with a shared responsibility, actively contribute toward its evolution through feedback and engagement.

Safety Commitment
Expeditioners should demonstrate a proactive commitment to safety and adherence to safety guidelines. They should understand the importance of safety procedures and be prepared to work within these to deliver outcomes safely and effectively. They should actively promote the use of safety procedures to contribute toward the development of a safety-oriented workplace.

Other Criteria

If you progress through the technical criteria and personal qualities stage of the process, the next stage will require you to undergo medical, psychological and character screening. Meeting and maintaining suitability in relation to these requirements is mandatory.

Medical

The AAD's Polar Medicine Unit will determine your medical fitness for duty in Antarctica or the subantarctic following tests conducted on our behalf by a nominated medical practitioner.

If required, this may include comprehensive drug screening for compliance to undertake Safety Sensitive Aviation Activities (SSAA).

Candidates considered for a role at Macquarie Island may be required to complete a fitness assessment.

Psychological

You may be required to undertake an adaptability assessment.

Character

You will be subject to a police records check and a reference check.