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## **CAREER OBJECTIVE**

To apply my extensive scientific and engineering knowledge whilst exercising my leadership and instructional skills.

## **CAREER SUMMARY**

- Greater than fifteen years experience in the analysis and provision of meteorological, oceanographic, and engineering information.
- Twenty years managerial and leadership experience in the Australian Defence Forces.
- Twenty years experience in leading and coordinating field scientific and adventurous expeditions in remote regions of the world including Antarctica, Greenland, Alaska, and the Himalaya.

## **CORE COMPETENCIES**

- Highly developed leadership, people management and team building skills with an ability to communicate with all levels.
- Strong skills in the analysis and presentation of technical data.
- Relationship builder, with wide ranging experience in managing diverse defence, infrastructure, scientific and engineering projects.
- Resilience and ability to maintain enthusiasm and drive when faced with setbacks or changing demands.
- Experience in industrial relations, equal opportunity and health and safety issues.

## **FORMAL EDUCATION**

- Glaciology, PhD, University of Cambridge, October 2007 -
- Arctic Engineering, Post-graduate short course, University of Anchorage, Alaska, 2007.
- Civil Engineering, Bachelor of Engineering (1st Class Hons), University of Western Australia, 2004.
- Meteorology, Graduate Diploma, Bureau of Meteorology, 1996.
- Oceanography, Bachelor of Science (Hons), University of New South Wales, 1992.

## **CAREER OVERVIEW**

### **June 2010 - July 2010**

Geotechnical Supervisor  
Advanced Geomechanics

Provide offshore geotechnical supervision in support of Woodside Energy Limited's Browse Project, offshore Broome, Western Australia.

#### Responsibilities

- Supervise conduct of geotechnical site investigation operations.
- Provide preliminary interpretation of geotechnical data.
- Provide additional analysis of operational met-ocean conditions.
- Advise client representative on contractual matters.

### **October 2009 - March 2010**

Plant Operator/Research Engineer  
British Antarctic Survey (BAS)

Conduct scientific investigations supporting the development and movement of the BAS Halley VI Research Station.

#### Achievements

- Assessment of snow strength via cone penetrometer testing (CPT).
- Assessment of snow stratigraphy and crevasse extent via GPR.
- Investigations into surface pressure-bulb extent and snow density analysis.

### **October 2007 -**

Graduate Student/Research Engineer  
Scott Polar Research Institute (SPRI)

Undertaking a PhD investigating the strength of snow, primarily for the development of compressed snow runways and Polar infrastructure.

#### Achievements

- Management of scientific field campaigns in Greenland, Svalbard, and Antarctica.
- Inaugural conduct of CPT in Antarctica.
- Experience with GPR, neutron density measurement and laboratory testing procedures.
- Experience with modeling of geomaterials, particularly utilising the cavity expansion method.
- Management of SPRI experimental and workshop facilities.

### **January 2006 - September 2007**

Project Manager  
Infrastructure Division - Department of Defence

Manage and coordinate the delivery of \$20M of Defence infrastructure projects within the State of NSW, Australia.

#### Achievements

- Managed a number of 'legacy' projects by re-engaging with primary stakeholders to address project requirements, and determining realistic budgets and timetables for completion.
- Re-established positive cooperation with governing bodies to ensure cooperation and project progression.
- Addressed numerous Ministerial matters in a concise and timely manner thus ensuring accurate provision of information to Government representatives.

## **January 2005 - December 2005**

Project Engineer  
19th Chief Engineer Works - Australian Army

Manage and coordinate the design, planning and construction of regional engineering works (including projects in Papua New Guinea, Tuvalu, Tonga, and Arnhem Land).

### Achievements

- Liaised with a broad range of stakeholders to ensure cooperation and the timely development of a major indigenous infrastructure project.
- Developed unique solutions to project environmental risks, thus ensuring International Policy Division was able to make informed decisions about the allocation of Government aid funding.
- Reinforced a culture of physical activity within the Unit thus assisting in the maintenance of the Army ethos.

## **March 2004 - December 2004**

Full-time Study - Civil Engineering  
University of Western Australia

Final year project evaluated the construction and movement of the Australian Antarctic Division Ice Runway at Casey Station.

## **December 2003 - February 2004**

Field Scientist and Technician  
Cold Regions Research and Engineering Laboratories (CRREL), Anchorage, Alaska

Conduct ground water monitoring and analysis, snow and ice sampling and analysis and instrumentation alignment and repair.

### Achievements

- Adapted immediately to a number of new testing and assessment processes, thus ensuring my value to the sponsoring organisation.
- Established positive professional relationships as an Australian Government representative thus ensuring continued cooperative collaboration between organisations.

## **July 2001 - November 2003**

Full-time Study - Civil Engineering  
University of Western Australia

Completion of university engineering studies including traveling/trekking for 12 months.

## **May 2000 - June 2001**

Public Relations Officer and Ship Safety Officer  
HMAS Darwin - Guided missile frigate

### Responsibilities

- Act as the Captain's representative in all Public relations matters pertaining to the ship.
- Manage liaisons with local and foreign media and coordinate ship open days and visits.
- Develop a public relations plan to best assist the promotion of HMAS Darwin and the Defence Force as a whole.
- Develop and initiate safety training and conduct safety audits of the ship and her routines.

### Achievements

- Actively managed the Public Relations matters of HMAS Darwin to ensure continued positive relations with the local community.

- Initiated, prepared and managed a comprehensive ship training program which ensured that all crew were conversant with essential safety procedures onboard.
- Re-evaluated the load-lifting procedures of the ship's helicopter to address OH&S concerns, thus ensuring the increased safety of the workplace.
- Successfully managed a number of port visits thus ensuring the positive portrayal of the ship's company to overseas officials.

### **June 1998 - June 2001**

Systems Manager - Airborne  
HMAS Darwin

#### Responsibilities

- Operate and manage radar, sonar and utility equipment onboard the Seahawk helicopter in order to achieve mission aims.
- Manage available meteorological/oceanographical data to ensure optimum use of aircraft sensors.
- Manage the daily career and administrative requirements of divisional sailors.
- Manage the flight armament expenditure, training currencies and requirements and equipment serviceability.

#### Achievements

- Applied my oceanographic and meteorological experience to the utilisation of the aircraft as a combat asset, thus providing greater effectiveness of this asset to the Commanding Officer.
- Initiated career discussion with sailors under my command to ensure that their career requirements were addressed, thus ensuring their competitiveness for future promotion and career advancement.

### **January 1997 - December 1997**

Assistant Manager  
Naval Fleet Weather and Oceanographic Centre (FWOC)

#### Responsibilities

- Assist in the management of products and services provided by the FWOC.
- Provide analysis, forecasting and briefing duties in support of Maritime Headquarters and the Naval Fleet.
- Manage the administrative requirements of the FWOC including the career management of staff.
- Provide lectures on oceanographic and meteorological information.

#### Achievements

- Improved the communication between the FWOC and the operational squadrons thus ensuring that maximum operational benefit was gained from meteorological staff.
- Initiated an oceanographic training programme thereby increasing the knowledge of sensor operators and further enhancing the operational capability of the RAN Seahawk fleet.

### **November 1997 - November 1997**

Meteorologist, Australian National Antarctic Research Expeditions (ANARE)  
Royal Australian Navy (RAN)

#### Responsibilities

- Perform forecasting duties in order to ensure the safe passage of Aurora Australis to/from Macquarie Island.
- Advise Director of Meteorology of recommended utilisation of meteorologists to be adopted in the future.

## **PERSONAL DETAILS**

### Personal Achievements

- Scientific/Traverse coordinator, Sir Ranulph Fiennes TransAntarctic Expedition, 2012-2014.
- Transglobe Expedition Trust Grant, 2008.
- Menzies Engineering Scholarship, 2007.
- Expedition Leader, Army Alpine Association (AAA) Patagonian Ice Cap Expedition, 2006.
- Recipient, Australian Centenary Medal, contribution to AAA 2001 Mt Everest Expedition.
- Coordinator, Climber, and Treasurer, AAA 2001 Mt Everest Expedition.
- Climber, AAA Shishapangma Expedition, Tibet 1999.
- Expedition Leader, AAA Big Wall Climbing Expedition, 1999, 1997.
- Climbing Leader, AAA Island Peak Expedition, Nepal 1996.
- Instructor, AAA Introduction to Mountaineering, 1992.
- Graduate, Australian Defence Force Academy, 1991.
- Cadet Command Position, Australian Defence Force Academy, 1991.

### Other education and training

- Leaders Wilderness Advanced First Aid (LWAFSA), 2008.
- Dangerous Goods Shipping/Acceptance Training, 2007.
- Department of Defence Equity and Diversity Training, 2007.
- Department of Defence Personnel Management Training, 2007.
- Department of Defence Occupational Health and Safety Training, 2007.
- RAN Harbour Watch keeping Certificate - Authority to manage ship in lieu of Captain, 2000.
- RAN Personnel Counseling, and Alcohol and Drug Awareness Training, 2000.
- Computing Skills (MS Products, FORTRAN, MATLAB, PLAXIS)

### Professional Affiliations

- Royal Geographical Society, Fellow
- Institute of Engineers Australia, Graduate Member
- International Glaciological Society, Member

### Selected Publications

- McCallum A. B., Barwise A. & Santos R., (2010). Cone penetration testing (CPT) in polar snow - preliminary observations, Conference Paper, 2nd International Symposium on Frontiers in Offshore Geotechnics.
- McCallum A. B., Barwise A. & Santos R., (2010). Cone penetration testing (CPT) in polar snow - equipment and procedures, Conference Paper, 2nd International Symposium on Cone Penetration Testing.
- McCallum, A. B., (2006). The Movement and Expected Lifetime of the Casey ice runway, Conference Paper, 13th International Conference on Cold Regions Engineering.
- McCallum, A. B., (2004). The Movement and Expected Lifetime of the Casey ice runway, B.E. (Hons) Thesis, University of Western Australia.
- McCallum, A. B., (1992). A temperature and salinity analysis of the Gulf of Carpentaria, B.Sc. (Hons) Thesis, University of New South Wales.

### Referees

- References available upon request.