

State of the Industry

Series One: Aquatic Facility Safety Assessments 2008

A report on the State of the Aquatics Industry Based on the Aquatic Facility Safety Assessments from Royal Life Saving



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Royal Life Saving

THE ROYAL LIFE SAVING SOCIETY AUSTRALIA

Introduction

While specific figures may not be available, each year millions of Australians visit an aquatic facility. Three of the largest pools, the Brisbane Aquatic Centre, Sydney Olympic Park Aquatic Centre and the Melbourne Sports and Aquatic Centre each have in excess of a million visits every year. As a result of the popularity of aquatic facilities within Australia, it is very important that these facilities are as safe as possible.

In 2007, Royal Life Saving (RLS) introduced a new automated system for their Aquatic Facility Safety Assessment (AFSA). With the new system, results are uploaded to a web server on completion of the assessment, providing RLS with a repository of information, easily accessible for analysis. This report is the first annual report detailing the findings of the AFSA's conducted by Royal Life Saving and is based on a random sample of 100 aquatic facilities that underwent an Aquatic Facility Safety Assessment in 2007-2008 from across the country, (excluding Western Australia).

The AFSA is based on the Guidelines for Safe Pool Operation (GSPO). The GSPO is the standard for safety in commercial or public swimming pools across Australia. In addition, the AFSA also assesses aquatic facilities against local state regulations, relevant Australian Standards and industry best practices. The AFSA is a compliance assessment. The ideal result is for every facility to score 100%. It is important to remember that although a score of 75% seems like a good score, it essentially reflects a non-compliance of 25%.

The Aquatic Facility Safety Assessment

There are 12 sections in the Aquatic Facility Safety Assessment comprising a range of questions designed to examine the performance of the facility against the current standards relating to that section.

Depending on the differing infrastructure at each aquatic facility, different sections and different questions within the sections are activated or deactivated as appropriate.

There are some minor differences in the criteria of some questions due to differences in State/Territory legislation. Each question is given a score of between 0 and 5.

Methodology

A random sample of 100 AFSA reports completed between 1 April 2007 and 31 March 2008 were selected from the web server. Information on the 100 facilities were analysed in Excel.

All information was de-identified. The assessment examines all items in the AFSA for the 100 randomly selected aquatic facilities.

The majority of the reports came from three States (in order) Victoria, New South Wales and Tasmania. Smaller numbers of reports in the initial download were from the Australian Capital Territory, the Northern Territory, Queensland and South Australia. There were no reports from Western Australia.

Compliance

Each question (item) is scored out of 5. Those questions which receive less than 3 are deemed to be non-compliant and those that receive a score of three or higher are deemed to be compliant.

The mean compliance rate for aquatic facilities is 82%, showing that on average, an aquatic facility is not compliant with 18% of safety items in the AFSA.

Overall Score

The overall score is derived from the total achieved score, divided by the total possible score and then expressed as a percentage. The overall results showed a wide range in scores, though with the majority of results in the higher range of scores.

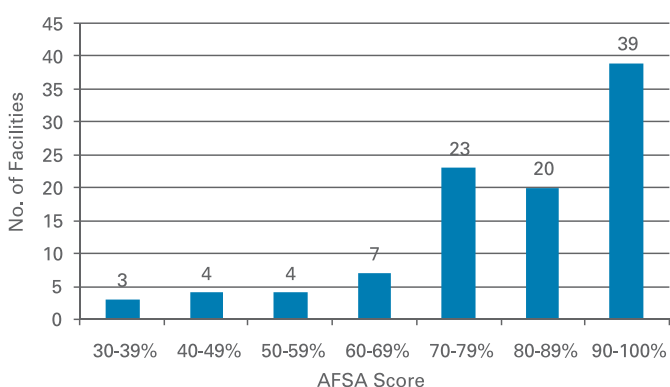
The range was as follows:

- 3 facilities scored between 30-39%
- 4 facilities scored between 40-49%
- 4 scored between 50-59%
- 7 between 60-69%
- 23 between 70-79%
- 20 between 80-89%
- 39 facilities scored between 90-100%.

It is a pleasing sign to see nearly 40% of the facilities that were assessed scoring in the 90%+ range. Nearly 60% (59%) of facilities achieved a score of 80%+.

However these positive results are balanced by the fact that 7% of the aquatic facilities sampled failed to meet even a 50% compliance score.

Fig. 1 AFSA Score Distribution



Mean, Mode & Standard Deviation

The average (mean) score was 80.4% across all 100 aquatic facilities. This means that 59 of the 100 aquatic facilities sampled, achieved the mean score or better.

The scores ranged from a low of 31.1% to a high of 98.4%, some 67.3% points higher. The standard deviation was 15.9. The low score of 31.1% is over three standard deviations from the mean while the highest score of 98.4% is just over one standard deviation away.

While the mean score was 80.4% the mode was 86%. There is a large discrepancy between the two values, nearly half a standard deviation. This is due to the small number of facilities (7) that scored very low (below 50%), negatively skewing the results and pulling the mean score down.

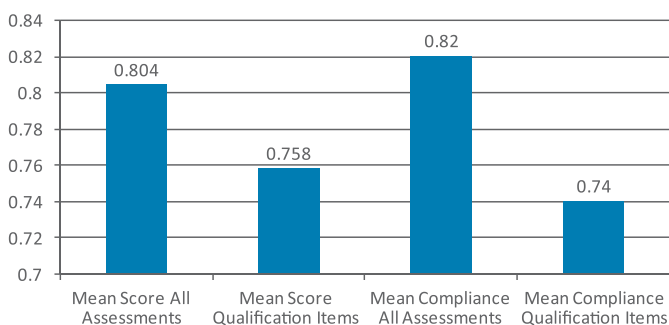
For individual questions, the mean score was 4.1 out of 5.

Qualification Items

A number of items assessed in the AFSA are deemed to be Qualification Items. These items have been identified as an essential minimum number of items within the AFSA that require compliance (a score of 3 or greater) for the safe operation of commercial aquatic facilities. They include key questions in the Administration, Technical Operation, Facility Design and Supervision sections of the assessment.

Despite these items being identified as the most important within the AFSA, their results are demonstrably worse than the overall results.

Fig. 2 Mean Score & Compliance Percentages



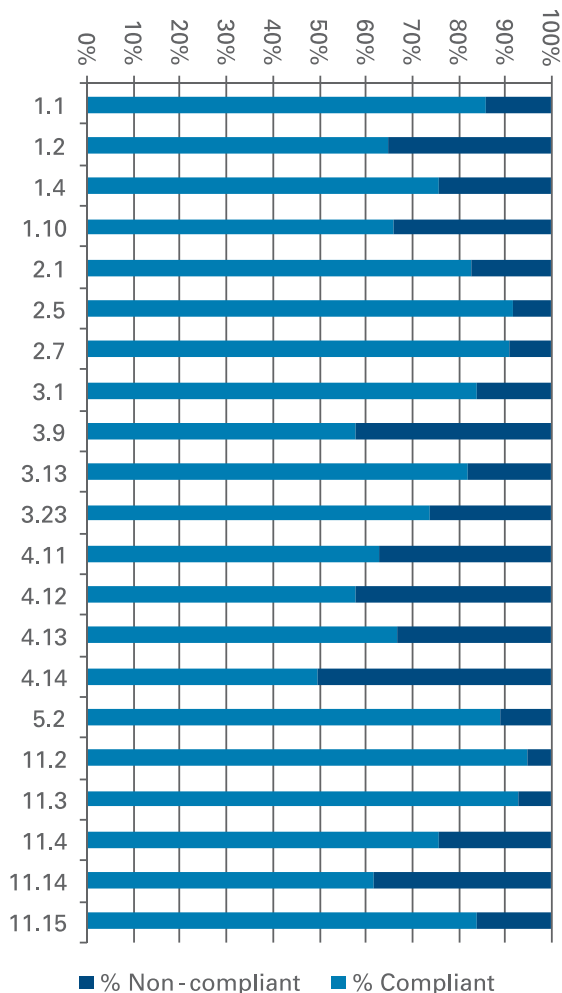
AFSA Qualification Items – Percentage Compliant

Qualification Questions

- 1.1 Is there an Operations Manual? (Mean = 4.3)
- 1.2 Is there a current copy of the Guidelines for Safe Pool Operation? (Mean = 3.2)
- 1.4 Has an Emergency Action Plan, which includes sections for different scenarios & locations, been developed? (Mean = 3.7)
- 1.10 How often do lifeguards undertake in-service training? (Mean = 3.3)

- 2.5 Is there at least one portable first aid kit? (Mean = 4.6)
- 2.7 Is functioning oxygen equipment available? (Mean = 4.6)
- 3.1 Is all pool water monitored and maintained within regulations set by local statutory authorities? (Mean = 4.2)
- 3.9 Has a risk assessment been done on the storage & use of Dangerous Goods and Hazardous Substances? (Mean = 2.9)
- 3.13 Are Material Safety Data Sheets (MSDS's) available for each stored chemical, including for cleaning? (Mean = 4.1)
- 3.23 Is appropriate Personal Protective Equipment (PPE) provided in plant rooms and chemical handling areas? (Mean = 3.7)
- 5.2 Is the spa sufficiently supervised? (Mean = 4.5)
- 11.2 Are there sufficient lifeguards supervising the pool areas? (Mean = 4.8)
- 11.3 Are all pools sufficiently supervised at the time of assessment? (Mean = 4.6)
- 11.4 What criteria are considered when deploying lifeguards? (Mean = 3.8)
- 11.15 Is the rule that children under a certain age (under 10) be supervised by guardians over a specified age (16 or older) enforced? (Mean = 4.2)

Fig. 3 % Compliant, Qualification Items



The main areas of concern that appeared in the Qualification Items were:

Operations Manuals (AFSA Q. 1.1)

An Operations Manual contains the information, policies and procedures required for the operation of an aquatic facility. 14% of all aquatic facilities assessed had no Operations Manual.

Recommendation

Guideline GO1 of the Guidelines for Safe Pool Operation (GSPO) recommends that each aquatic facility has an Operations Manual that is specific to that facility.

Emergency Action Plans (AFSA Q. 1.4)

Aquatic facilities have numerous potential hazards and are also frequently public buildings. The need for an appropriate emergency action plan is high. 18% of the aquatic facilities assessed could not show any Emergency Action Plan.

Recommendation

Guideline GO2 of the GSPO details the recommended content of an Emergency Action Plan. Royal Life Saving recommends that each aquatic facility have an Emergency Action Plan that is specific and appropriate to their operation.

Risk Assessment on the Storage and Use of Chemicals (AFSA Q. 3.9)

Given the nature of Dangerous Goods, conducting a risk assessment on their handling and use is very important to ensure the safe operation of the plant room at an aquatic facility.

There was a compliance rate of only 58% for facilities having completed a risk assessment on their storage and handling of chemicals. This leaves 42% of facilities not having a risk assessment.

Recommendation

Guideline GO7 of the GSPO recommends that each facility conduct risk assessments on their storage and use of Dangerous Goods and Hazardous Substances. These risk assessments are also required to be conducted under State/Territory legislation.

Personal Protective Equipment (AFSA Q. 3.23)

PPE is the last line of defence between a person and a Dangerous Good. It is vital to have the appropriate safety equipment readily available for these chemicals. 74% of facilities were found to have appropriate PPE with 26% of facilities found to have inappropriate or insufficient PPE.

Recommendation

The provision of appropriate and sufficient PPE is a requirement under State/Territory legislation. RLS recommends that all aquatic facilities provide the necessary PPE to ensure the safe use of Dangerous Goods and Hazardous Substances at their facility.

Number of Lifeguards on Duty (AFSA Q. 11.2)

95% of facilities were able to provide adequate numbers of lifeguards. This means that 5% of facilities are not. (Low Patronage Pools are assessed as Low Patronage Pools, only requiring one qualified staff member to be present).

Recommendation

Guidelines SU1 and LP1 of the GSPO detail the recommended minimum levels of supervision. Royal Life Saving recommends that aquatic facilities should meet the minimum recommendations at all times.

Pool Supervision (AFSA Q. 11.3)

A key issue for all aquatic facilities is whether or not their pools are being adequately supervised. 7% of the aquatic facilities assessed had pools that were not supervised properly, even during conduct of a safety assessment by Royal Life Saving.

Recommendation

Guideline SU4 of the GSPO details the expectations of Lifeguard Duties and how they are performed. Royal Life Saving strongly recommends that while open, each pool at an aquatic facility has sufficient supervision.

Child Supervision (AFSA Q. 11.15)

Most aquatic facilities were able to demonstrate appropriate child supervision policies, however 16% of the aquatic facilities assessed were unable to show any evidence of enforcing the parental supervision rules.

Recommendation

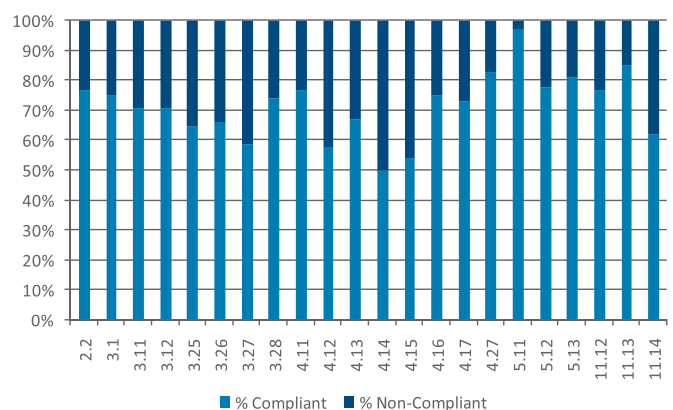
Child supervision is vitally important in providing a safe aquatic environment and SU3 of the GSPO recommends that all aquatic facilities have, display and enforce a child supervision policy. Programs such as Keep Watch @ Public Pools and Watch Around Water have been specifically designed to increase the levels of child supervision.

Signage

As there are many requirements for signage in an aquatic facility, it is important for aquatic facilities to have a coordinated signage strategy to be able to meet these requirements.

The overall compliance of the signage items in the Aquatic Facility Safety Assessment is 70%, which is significantly lower (12% points) than the overall compliance rating of 82%. The signage items also have a much lower mean score of 3.4 out of 5 against the overall mean of 4.1.

Fig. 4 % Compliant, Signage Items



Signage Questions

- 2.2 Is the First Aid Room or area easily identified? (Mean = 3.8)
- 3.10 Are all chemical storage areas clearly labeled? (Mean = 3.7)
- 3.11 Are "HAZCHEM" signs posted immediately outside plant rooms and at all entries to the facility? (Mean = 3.5)
- 3.25 Is signage displayed in plant rooms and chemical handling areas promoting the use of the required Personal Protective Equipment (PPE)? (Mean 3.1)
- 3.26 Are all pipes, valves and pumps, controlling water and chemical feeds, clearly labeled? (Mean = 3.1)
- 3.27 Do pipe markers have the correct colour? (Mean = 3.0)
- 3.28 Is there signage prohibiting smoking and indicating restricted access (e.g. "Staff Only") at entrances to, and inside, the plant room and chemical storage areas? (Mean = 3.5)
- 4.11 Are there sufficient depth markers? (Mean 3.6)
- 4.12 Are depth markers visible from within the pool? (Mean = 2.9)
- 4.13 Are depth markers clearly visible from the concourse? (Mean = 3.4)
- 4.14 Is there sufficient signage identifying deep water, shallow water, particularly at pool entry points? (Mean = 2.5)
- 4.15 Is deep/shallow water warning signage compliant with the National Aquatic & Recreation Signage Manual? (Mean = 2.7)
- 4.16 Is all 'Do Not Dive' signage compliant with the National Aquatic & Recreation Signage Manual? (Mean = 3.8)
- 4.17 In water under 1.8 metres in depth, is 'Do Not Dive' signage displayed? (Mean = 3.7)
- 4.27 Are advisory signs, other than those associated with depth markings, used, when and where appropriate? (Mean = 4.2)
- 5.11 Can the depth signage of the spa be clearly viewed from within the spa? (Mean = 3.8)
- 5.12 Can the spa depth signage be clearly viewed from outside of the spa? (Mean = 3.9)
- 5.13 Is signage relating to the use and restrictions of the spa clearly displayed? (Mean = 4.1)
- 11.13 Is there signage that encourages responsible behaviour? (Mean = 4.3)
- 11.14 Is there signage that encourages active parental supervision in appropriate areas? (Mean = 2.9)

The main areas of concern that appeared in the Signage Items were:

PPE Signage (AFSA Q. 3.25)

The importance of this signage is self evident with it being vital that staff and/or contractors wear the required Personal Protective Equipment when handling chemicals or working on plant and being able to readily access it. 27% of aquatic facilities assessed had No PPE signage.

Recommendation

Guideline TO10 of the GSPO provides recommendations on the content and location of PPE signage consistent with AS1319-1994. Royal Life Saving recommends that all aquatic facilities adopt a signage strategy that implements these recommendations.

Depth Markers (AFSA Q. 4.11, 4.12, 4.13)

These questions look to see if there are sufficient and appropriate shallow, deep and intermediate depth markers for all the swimming pools at an aquatic facility. 13% of aquatic facilities had at least one pool with no depth markers. Frequently this is the toddlers' swimming pool. Many pools had depth signage that did not meet the recommended minimum size of 100mm.

Recommendation

Guideline FD3 of the GSPO provides recommendations on the sizing, content and location of depth markers. Royal Life Saving recommends that all aquatic facilities adopt a signage strategy that implements these recommendations.

Shallow and Deep Water Signage (AFSA Q. 4.14, 4.15)

Question 4.14 looks to see if there is shallow water or deep water warning signage in the appropriate locations for a swimming pool, particularly at entrance points to the pool so that patrons can clearly see if they are entering deep or shallow water. Only 50% of aquatic facilities were found to have shallow water / deep water warning signage in the appropriate places. Question 4.15 examines the signage to see if it is compliant with the symbols contained in the National Aquatic and Recreation Signage Style Manual. 46% of facilities did not have compliant signage.

Recommendation

Guideline FD4 of the GSPO provides recommendations on the content and location of shallow and deep water hazard signs consistent with AS2416-2002. Royal Life Saving recommends that all aquatic facilities adopt a signage strategy that implements these recommendations.

Child Supervision Signage (AFSA Q. 11.14)

Appropriate parental supervision of children at aquatic facilities is very important and there have been a number of drownings in Australia of small children in aquatic facilities that have resulted at least partly, from inappropriate parental supervision. 31% of aquatic facilities assessed had no parental supervision signage in place.

Recommendation

Guideline SU3 of the GSPO provides recommendations on the content and location of child supervision signage. Royal Life Saving recommends that all aquatic facilities adopt a signage strategy that implements these recommendations.

Summary

The Aquatic Facility Safety Assessments conducted by Royal Life Saving in 2007-2008 have revealed an interesting picture of the state of the aquatics industry in Australia. Overall the industry appears in relatively good shape with a mean compliance of 82% across the 100 assessments sampled. However this also shows a non-compliance of 18%, with a number of key safety areas such as operations manuals, emergency action plans, signage and supervision that require immediate attention by the aquatics industry in Australia. Royal Life Saving publishes the Guidelines for Safe Pool Operation which is the standard for safety in commercial or public swimming pools across Australia. Published nationally since 1994, it contains vital safety information for the aquatic industry and is easily available in hardcopy from your local RLS Branch or electronically from <http://guidelines.royallifesaving.com.au>.

Testimonials

"Aquatic Facility Safety Assessments have assisted me to commit to a continuous improvement plan for my facility and identify ongoing training requirements for staff. I complete an annual internal audit with my managers and Team leaders and then invite Royal Life Saving auditors to conduct an assessment. This process also assists me to review my risk management procedures."

Mark FitzSimons, Duty Manager

Leanyer Recreation Park - Northern Territory

"The RLSS Aquatic Facility Safety Assessment has been an important tool for pool managers to assess their own safety initiatives and values against a template of pre determined data. The Audit sets a plan to go forward in continuous improvement of safety and supervision of public swimming pools"

Bill Meaney, Manager Recreation Facilities

Leichhardt Council - New South Wales, Past President ARI

"The Brunswick City Baths have been conducting Aquatic Facility Safety Assessments annually since 2003. We see the opportunity of having an external assessor onsite, able to provide advice as a valuable part of the assessment process."

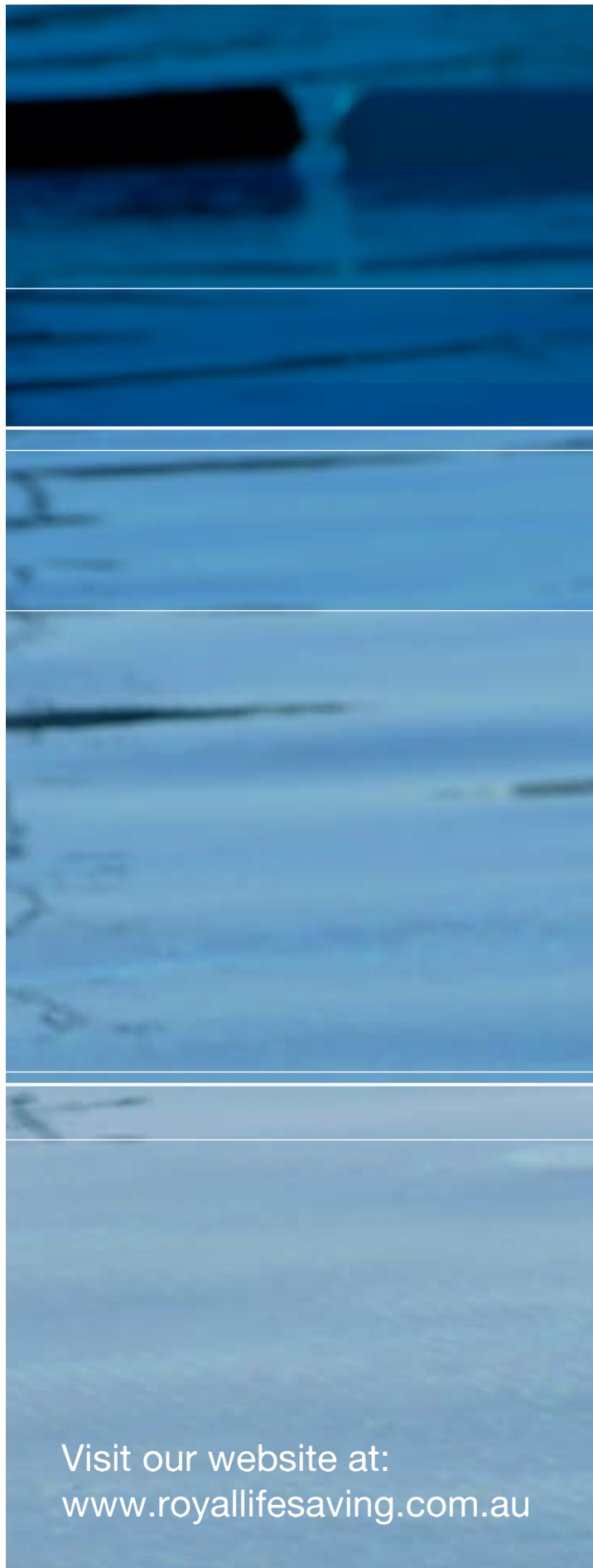
Iain Stewart, Operations Director

Brunswick City Baths - Victoria

For further information on the Guidelines for Safe Pool Operations (GSPO), the Aquatic Facility Safety Assessment and other risk management products, please contact your local Royal Life Saving branch:

National Office	(02) 8217 3111
Australian Capital Territory Branch	(02) 6260 5800
New South Wales Branch	(02) 9634 3700
Northern Territory Branch	(08) 8981 5036
Queensland Branch	(07) 3823 2823
South Australia Branch	(08) 8234 9244
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