REFERENCE GROUP

David Power  - NSW Department of Education and Training – Sport Unit
Ross Morrison  - NSW Department of Education and Training – Sport Unit
Gary Penfold  - Aquatic and Recreation Institute / Warringah Council
Michael Ilinsky  - Royal Life Saving
Steve Eccleston  - Royal Life Saving
Melissa Rickwood  - AUSTSWIM
Selwyn Brown  - NSW Department of Education and Training – St Clair High School
Jenny Blitvich  - University of Ballarat (Diving Expert)

FURTHER INFORMATION
Royal Life Saving NSW, PO Box 8307, BAULKHAM HILLS BC NSW 2153 – telephone (02) 9634 3700

All support documents can be found at www.royalnsw.com.au
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There is a significant body of evidence to suggest that shallow water diving can lead to a range of injuries that include head injuries (broken teeth, scalp injuries and facial fractures) to the more significant spinal cord injury.
SECTION: 01

INTRODUCTION
From 2008 all NSW Department of Education and Training Schools will seek to obtain from Aquatic Facilities a recommendation on whether dive entries are permissible for the purpose of swimming carnivals. This document will assist Aquatic Facilities implement newly developed School Guidelines through the provision of templates and support documents.

For further information or assistance please do not hesitate to contact your nearest Royal Life Saving Office.

BACKGROUND

There is a significant body of evidence to suggest that shallow water diving can lead to a range of injuries that include head injuries (broken teeth, scalp injuries and facial fractures) to the more significant spinal cord injury. Spinal cord injury is sudden and unexpected. It can be devastating and costly in human and social terms.

Each year in Australia, about 300 – 400 new incident cases occur. Water related events accounted for 10% (n=25) of persisting spinal cord injury cases reported during 2003-04. Ninety six percent (n=23) of water related spinal cord injury reported had injury to the cervical spinal segments, with 25% sustaining complete injury to the cord after diving into bodies of water without being aware of the depth.

Aquatic Guidelines – Safe Water Entry for Competitions – Competitive Dive Starts has been developed in response to the Royal Life Saving Society Australia – Guidelines for Safe Pool Operation SU – Safe Water Entry for Competitions. Royal Life Saving Society Australia produced these Guidelines in 2006 as a result of a number of head and spinal injuries that had occurred during scheduled activities such as swimming carnivals and recreational swimming.

A competitive dive start is defined as entry into water from the side of the pool (flush or raised) or from a starting block for the purpose of starting a swimming based competition or training for a swimming based competition.
**STEPS TO IMPLEMENT AQUATIC GUIDELINES - SAFE WATER ENTRY FOR COMPETITORS**

Aquatic Facilities are responsible for providing standard information (as detailed in Appendix 1) to NSW Department of Education and Training Schools who wish to utilise the facility for carnival purposes.

**STEP 1.**

**COMPLETE THE SHALLOW WATER DIVING INFORMATION & RISK ASSESSMENT**

Aquatic Facilities will need to complete the Shallow Water Diving Information and Risk Assessment form and have it available for distribution to Schools upon request.

The Shallow Water Diving Information and Risk Assessment form provides Principals and Carnival Coordinators with the following information:

**PART 1:** The Water Depth (in metres and centimetres) of the competition pool form both ends where entry may occur and a height (millimetres) measurement from water level to concourse or starting block. This information then needs to be applied to a Diving Depth Matrix by the Aquatic Facility operator (Appendix 3) to provide a “suggested entry” statement for Principals and Carnival Coordinators. The recommended diving depths outlined in the Diving Depth Matrix are based on the Royal life Saving Australia Guideline SU 22 Safe Water Entry for Competitions (Appendix 5).

The suggested entry statement will either identify:

1. **An in-water start recommendation** (based on the depth of the competition pool and concourse height the recommendation is to commence events in the water – no diving permissible).

2. **Competitive dive starts permitted** (based on the depth of the competition pool and concourse height a competitive dive start is permissible).

Principals and Carnival Coordinators should then utilise the information in the Shallow Water Diving Information and Risk Assessment form and confirm the type of entry suitable for the swimming carnival.

Principals and Carnival Coordinators can be reminded that “in-water” starts are a genuine option for carnivals with novice-swimmers. In-water starts significantly reduce the opportunity for a diving or spinal related injury.

**PART 2:** Risk Identification, Assessment and Control Procedures as compiled by the host Aquatic Facility. This section outlines the hazard description, current controls, likelihood details and consequence details together with a level of risk for the purpose of shallow water diving. This level of risk will be determined by utilising the Risk Management Matrix at Appendix 4.

This section will also identify key responsible people from the host Aquatic Facility and any actions that may be required.

**SUPPORT DOCUMENTS:**

- **Appendix 1:** Shallow Water Diving Information and Risk Assessment
- **Appendix 2:** Shallow Water Diving Information and Risk Assessment – SAMPLE from Warringah Aquatic Centre
- **Appendix 3:** Water Depth Matrix
- **Appendix 4:** Risk Management Matrix
- **Appendix 5:** Royal Life Saving “Guidelines for Safe Pool Operation” SU 22 Safe Water Entry for Competitions – Competitive Dive Start.

The information provided to Schools (Appendix 1) should be considered a minimum. Any additional policies or Guidelines should also be supplied to schools in accordance with standard operating procedures for each individual facility.

For more information on Royal Life Saving Guidelines for Safe Pool Operation please contact:

Ph: 02 9634 3700
Fx: 02 9634 8529
Email: nsw@royalnsw.com.au
SECTION : 02

SUPPORT DOCUMENTS

Appendix 1: Shallow Water Diving Information and Risk Assessment

Appendix 2: Shallow Water Diving Information and Risk Assessment – COMPLETED SAMPLE

Appendix 3: Water Depth Matrix

Appendix 4: Risk Management Matrix

APPENDIX 1 – SHALLOW WATER DIVING INFORMATION & RISK ASSESSMENT

ATTENTION: Principal and Carnival Coordinator
Please ensure you read and understand all PARTS to this document prior to signing and agreeing to terms and conditions.

PART 1 – WATER DEPTH
After consultation with Royal Life Saving NSW, the Aquatic and Recreation Institute and the NSW Department of Education and Training (DET) it has been deemed important that ........................................... provide you with information on shallow water diving. This is particularly pertinent to relay events or other activities where diving in shallow water may be a scheduled carnival event or activity.

CARNIVAL POOL –

<table>
<thead>
<tr>
<th>DEEP END DEPTH (or location)</th>
<th>Metres</th>
<th>SHALLOW END DEPTH (or location)</th>
<th>Metres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concourse / Starting Block height above water</td>
<td>mm</td>
<td>Concourse / Starting Block height above water</td>
<td>mm</td>
</tr>
</tbody>
</table>

OTHER INFORMATION

SUGGESTED SAFE WATER ENTRY TECHNIQUE
Based on the Royal Life Saving Guidelines for Safe Pool Operation Guideline SU22 the following entry is suggested.

<table>
<thead>
<tr>
<th>DEEP END (or location)</th>
<th>SHALLOW END (or location)</th>
</tr>
</thead>
</table>

OTHER INFORMATION  If you undertake Competitive Dive starts please ensure appropriate induction, training and competitor announcements are undertaken in accordance with DET requirements.

PART 2 - RISK IDENTIFICATION / ASSESSMENT / CONTROL

<table>
<thead>
<tr>
<th>DATE</th>
<th>LOCATION</th>
</tr>
</thead>
</table>

IDENTIFICATION

ASSESSORS

WORK AREA

HAZARD DESCRIPTION

ASSESSMENT

CURRENT CONTROLS

LIKELIHOOD DETAILS

CONSEQUENCE DETAILS

LEVEL OF RISK

PROPOSED CONTROLS

BY DATE

ELIMINATION

SUBSTITUTION

ENGINEERING

ADMINISTRATION

LIKELIHOOD DETAILS (After proposed controls implementation)

CONSEQUENCE DETAILS (After proposed controls implementation)

LEVEL OF RISK

APPROVAL TO IMPLEMENT CONTROLS & RESPONSIBLE PERSON

RESPONSIBLE PERSON

NAME

BY DATE

STATUS

ADDITIONAL ACTIONS TO BE TAKEN
ATTENTION: Principal and Aquatic Carnival Coordinator
Please ensure you read and understand all PARTS to this document prior to signing and agreeing to terms and conditions.

PART 1 – WATER DEPTH
After consultation with Royal Life Saving NSW, the Aquatic and Recreation Institute and the NSW Department of Education and Training (DET) it has been deemed important that WARINGAH AQUATIC CENTRE provide you with information on shallow water diving. This is particularly pertinent to relay events or other activities where diving in shallow water may be a scheduled carnival event or activity.

CARNIVAL POOL –

<table>
<thead>
<tr>
<th>DEEP END DEPTH</th>
<th>1.8 Metres</th>
</tr>
</thead>
<tbody>
<tr>
<td>or location</td>
<td></td>
</tr>
<tr>
<td>SHALLOW END DEPTH</td>
<td>1.01 Metres</td>
</tr>
<tr>
<td>or location</td>
<td></td>
</tr>
</tbody>
</table>

Concourse / Starting Block height above water

Concourse / Starting Block height above water

OTHER INFORMATION
If boom is to be utilised for entry please consult with Lifeguard staff

SUGGESTED SAFE WATER ENTRY TECHNIQUE
Based on the Royal Life Saving Guidelines for Safe Pool Operation Guideline SU the following entry is suggested.

DEEP END (or location) | Competitive Dive Start Permissible |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SHALLOW END (or location)</td>
<td>Competitive Dive Start Permissible</td>
</tr>
</tbody>
</table>

OTHER INFORMATION If you undertake Competitive Dive starts please ensure appropriate induction, training and competitor announcements are undertaken in accordance with DET requirements.

PART 2 - RISK IDENTIFICATION / ASSESSMENT / CONTROL

DATE 12th May 2007
LOCATION 25 metre Carnival Pool (Shallow end)

HAZARD DESCRIPTION
Risk of steep dive into shallow end of pool causing possible head/neck injury

ASSESSMENT
CURRENT CONTROLS Non-elite swimmers require clearance from Principal
LIKELIHOOD DETAILS Very likely – could happen at anytime
CONSEQUENCE DETAILS Permanent disability or ill health (possible death)

LEVEL OF RISK 1

PROPOSED CONTROLS
ELIMINATION
SUBSTITUTION
ENGINEERING
ADMINISTRATION Portable dive blocks are not offered for carnivals at shallow end. Basic carnivals are a deep end start 1st July 2007
LIKELIHOOD DETAILS (After proposed controls implementation) Very unlikely – could happen but probably never will
CONSEQUENCE DETAILS (After proposed controls implementation) Death or permanent disability or ill health

LEVEL OF RISK 3

APPROVAL TO IMPLEMENT CONTROLS & RESPONSIBLE PERSON
RESPONSIBLE PERSON NAME BY DATE STATUS
MANAGER/TEAM LEADER (NAME OF MANAGER) (INSERT DATE) IMPLEMENTED

ADDITIONAL ACTIONS TO BE TAKEN D2.2 Terms & Conditions – shallow end pool depth is 1 metre-signage indicates no diving permitted. Hirers requesting the use of shallow end start to complete own risk assessment. D2.2 Inclusion of RLSSA “Guidelines for Safe Pool Operation” in terms and conditions.
APPENDIX 3 – DEPTH MATRIX

The following information is provided for schools who undertake their own water depth assessment. Please ensure you add depth details to Appendix 1 with a corresponding “SUGGESTED SAFE WATER ENTRY TECHNIQUE”.

DIVING DEPTH MATRIX
Water depths for starts for competition swimming and training (for trained competitors)

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>COMMENT</th>
<th>ENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 900mm</td>
<td>Dive starts should not be permitted</td>
<td>All events should be commenced in the water</td>
</tr>
<tr>
<td>900 – 1000mm</td>
<td>Concourse level to a maximum height above water of 200mm</td>
<td>Competitive dive starts may be permitted</td>
</tr>
<tr>
<td></td>
<td>If concourse level greater than 200mm</td>
<td>In-water start</td>
</tr>
<tr>
<td>1000 – 1200mm</td>
<td>Concourse level to a maximum height above water of 400mm</td>
<td>Competitive dive starts may be permitted</td>
</tr>
<tr>
<td></td>
<td>If concourse level greater than 400mm</td>
<td>In-water start</td>
</tr>
<tr>
<td>1200mm or greater</td>
<td>Maximum height of 750mm</td>
<td>Competitive dive starts may be permitted</td>
</tr>
<tr>
<td></td>
<td>If greater than 750mm</td>
<td>In-water start</td>
</tr>
</tbody>
</table>

Please ensure you read RLSSA GSPO SU22 in its entirety prior to providing information to schools.

MEASUREMENT DIAGRAM

- Diving block measurement
- Pool end / plinth measurement
- Pool depth measurement
- Total dive height measurement
APPENDIX 4 - RISK MANAGEMENT MATRIX

The following information is provided for schools who undertake their own risk assessment. Please ensure you add appropriate details to Appendix 1 PART 2 RISK IDENTIFICATION / ASSESSMENT / CONTROL

A matrix can be used to give each individual risk a numerical rating, allowing the risks to be categorised according to severity. The first step is to determine the level of consequence (harm) should something happen. The second step is to determine how likely it is for something to happen.

CONSEQUENCE
Classify the category of the consequence using the following table: Table 1.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>CONSEQUENCE (HARM)</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Catastrophic</td>
<td>Fatalities</td>
</tr>
<tr>
<td>2</td>
<td>Major</td>
<td>Serious injury, such as permanent disability</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Medical treatment or lost time injury</td>
</tr>
<tr>
<td>4</td>
<td>Minor</td>
<td>Minor injury, such as first aid</td>
</tr>
<tr>
<td>5</td>
<td>Insignificant</td>
<td>No injury</td>
</tr>
</tbody>
</table>

LIKELIHOOD
Estimate how likely the consequence is to happen as a result of exposure to the hazard using the following table: Table 2.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PROBABILITY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Almost certain, common</td>
<td>Is expected to occur in most circumstances</td>
</tr>
<tr>
<td>B</td>
<td>Likely, has happened</td>
<td>Will probably occur in most circumstances</td>
</tr>
<tr>
<td>C</td>
<td>Possible, could happen</td>
<td>Might occur at some time</td>
</tr>
<tr>
<td>D</td>
<td>Unlikely, not likely</td>
<td>Could occur at some time</td>
</tr>
<tr>
<td>E</td>
<td>Rare, practically impossible</td>
<td>May occur only in exceptional circumstances</td>
</tr>
</tbody>
</table>

A risk score can be determined by cross referencing the potential consequence with the likelihood of the consequence being realised in the following table: Table 3.

<table>
<thead>
<tr>
<th>LIKELIHOOD</th>
<th>CONSEQUENCE (HARM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>19</td>
</tr>
</tbody>
</table>

The risk score can provide a ranking that will give an indication of the priority and the qualitative level of risk and the need to take remedial action.

**HIGH** – immediate correction required. Consider discontinuing

**MEDIUM** – attention needed, correction required

**LOW** – perhaps acceptable as is

The level of acceptable risk varies with all hazards, the ways and available means of reducing risk and the skills and competencies of persons managing the risks.
APPENDIX 5 – GUIDELINES FOR SAFE POOL OPERATION SU22

1. TITLE: SAFE WATER ENTRY FOR COMPETITIONS - COMPETITIVE DIVE STARTS

2. DATE ISSUED: 1st April 2006

3. PURPOSE: To provide guidance on safe water entry (Competitive Dive Starts) for competitors during competitions and training for competition.

4. DEFINITION:

4.1 Dive entry is defined as entry into water where the upper body (the hands, arms and head are followed by the torso and lower limbs) enters first during activities, which are conducted under aquatic programming such as:

- swimming and related (triathlon, distance swimming) squad training and competition
- lifesaving classes.

4.2 Competitive dive start is defined as entry into water from the side of the pool (flush or raised) or from a starting block for the purpose of starting a swimming based competition or training for a swimming based competition that may include the following:

- swimming and related (triathlon, distance swimming) squad training;
- swimming competition instruction;
- swimming competitions/meets for swimming clubs, schools and other groups;
- lifesaving classes.

4.3 Starting blocks (starting platforms) are defined as raised platforms at the edge of a swimming pool, located in line with the mid point of each swimming lane, for the purpose of competitive swimming water entry and may also be used for housing the backstroke start handgrips.

5. DESCRIPTION:

5.1 Administration

(a) All coaches/teachers and instructors or club officials should keep a record of competency of safe diving technique, and competitive starts.

(b) Prior to participating in swimming events swimmers should be advised and warned of the water depth into which they may be required to enter during the course of any competition.

Note: Competition entry forms and promotional material should clearly advise competitors of the water depth in which competition(s) will be held.

5.2 Instruction in Safe Water Entry (see also Guideline PR 9 in Program section)

(a) All persons who wish to participate in swimming or similar (e.g. Lifesaving) competitions should be instructed in the principles of safe water entry and diving techniques, and competitive dive starts in a progressive education program under the instruction of an appropriately qualified Coach or Instructor.

(b) All participants in swimming or like competition should receive appropriate instruction prior to participating in any swimming or like competitions.

5.3 Water Depths for Starts for Competition Swimming and Training (for trained competitors)

(a) In water depth less than 900mm dive starts should not be permitted. All events should be commenced in the water.

(b) In water depths 900mm to 1000mm:
- competitive dive starts may be permitted from concourse level to a maximum height above water of 200mm
- if concourse height is greater than 200mm above the surface of the water, starts should be commenced in the water.

(c) In water depths greater than 1000mm and less than 1200mm:
- competitive dive starts may be permitted from concourse level to a maximum height above water of 400mm
- if concourse height is greater than 400mm above the surface of the water, starts should be commenced in the water.

(d) In water depths 1200mm or greater, competitive dive starts may be permitted from a maximum height of 750mm.
5.4 In swimming pools where recreational and competition/training or learn to swim is being conducted side by side, a warning sign should be prominently displayed adjacent to those areas in which dive entries are being performed by trained (in safe dive entry) swimmers; which reads:

“Warning: Dive Entries Permitted by Trained Swimmers Under Coach’s Supervision Only”, or similar,

Note: A sign is not necessary where the pool is being used solely for competition swimming/training or learn to swim under supervision.

5.5 Use of Starting Blocks (Refer also FD 6 Swimming Lane Design)

(a) Starting blocks should be inspected prior to each use to ensure they are correctly fitted, sturdy and free of any potential hazards

(b) Starting blocks should only be available for use by those persons deemed as competent at executing a safe forward dive entry.

(c) Only a qualified swim coach, lifesaving instructor (excepting beach life saving), or swim instructor (e.g. AUSTSWIM) should assess competency.

(d) In pools where non-complementary activities are being conducted, starting blocks should be isolated from use when not used for competition or instruction.

6. REFERENCES / FURTHER INFORMATION:

- Guideline PR 9 Teaching of Water Entry and Diving
- Guideline FD 6 Swimming Lane Design
- Guideline FD 24 Design of Starting Blocks (Starting Platforms)
- Guideline FD 3 Pool Depth Markings
- Dive depth and water depth in competitive swim starts, J Blitvich et al, 2000

7. PREVIOUS VERSIONS

Guideline SU21 Safe Water Entry for Competitions – Competitive Dive Starts, Issue 1, Nov 2002
Guideline SU21 Supervision of Competitive Events Issue 1, November 1997
Visit our website at:
www.royalnsw.com.au