

Australian Battle Group Inc.

Building and Operations Regulations



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1. Ship Construction

1.1. Period

- 1.1.1. Only ships which were laid down or in commission from 1900 to 1946 (inclusive) are permitted.
- 1.1.2. Sailing ships are not allowed.

1.2. Standard References

- 1.2.1. The only sources of information for ships' specifications used in the Australian Battle Group Inc. are:
 - 1.2.1.1. Conway's, All the World's Fighting Ships, (1860-1905).
 - 1.2.1.2. Conway's, All the World's Fighting Ships, (1905-1921).
 - 1.2.1.3. Conway's, All the World's Fighting Ships, (1922-1946).
 - 1.2.1.4. The Australian Battle Group Inc. Building and Operations Regulations.

1.3. Waivers to the Building and Operations Regulations

- 1.3.1. The Australian Battle Group Technical Officer may grant waivers for ships that do not comply with the Building and Operations Regulations.
- 1.3.2. Circumstances under which a waiver may be granted:
 - 1.3.2.1. When the information described in Conway's is found to be incomplete or incorrect.
 - 1.3.2.2. When a member wishes to sail a valid warship which is not listed in Conway's.
 - 1.3.2.3. Where construction rules are not complied with, but the ship does not gain an unreasonable tactical advantage as a result, or if the ship would be placed at an unreasonable tactical disadvantage through complying.
- 1.3.3. All approved waivers will be published on the Australian Battle Group Inc. web site within two months of the granting of the waiver.

1.4. Displacement

- 1.4.1. All references to displacement throughout these Building and Operations Regulations refer to an original ship's Full Load Displacement.

1.5. Ships of a Class

- 1.5.1. Ships of a class may be named after any ship of that class.
- 1.5.2. Ships' names are encouraged to be historical or semi-historical.

1.6. Scale

- 1.6.1. All ships must be built to a scale of 1:144 (i.e. 1 metre = 6.94mm or 1 inch = 12 foot) plus or minus 2% in length and 5% in beam.

1.7. Build as at a Single Point in Time

- 1.7.1. Ships must be constructed as they were at a single point of time during the period covered by BOR 1.1.1, however the following is allowed:
 - 1.7.1.1. Where a ship commenced a refit during the period covered by BOR 1.1.1 the model may be built to that design, regardless of when (or if) that refit was completed.
 - 1.7.1.2. Where a ship was laid down during the period covered by BOR 1.1.1 but not completed, the model may be constructed to the design as laid down.

1.8. Hull Construction

- 1.8.1. The hull may be made of any material but must have penetrable windows.
- 1.8.2. Penetrable windows are to be covered with a skin of balsa wood.
- 1.8.3. The balsa skin's thickness is to be based on actual armour thickness at the thickest part of a given ship's armour belt, per Table 1, Appendix I.
- 1.8.4. The balsa skin may be painted with model aircraft dope to waterproof it.
- 1.8.5. One side of the balsa skin may be covered with a single layer of light weight "silkspar".

1.9. Buoyancy

- 1.9.1. Ships must be sinkable.
- 1.9.2. No buoyancy may be added to the hull, or interior of the hull of any ship to provide a means of delaying, or slowing down the sinking of the ship.

1.10. Ships under 15,000 Displacement Tons

- 1.10.1. 10mm extra draft may be added to the hull. The water line and freeboard must remain the same as the original vessel.
- 1.10.2. A flat lead strip may be added to the bottom of the keel for ballast and does not count towards the 10 mm. Maximum lead thickness is 3.0 mm.

1.11. Cap Rail

- 1.11.1. The maximum combined thickness of the deck and cap rail must not exceed 12 mm.
- 1.11.2. Examples of the position of the cap rail are indicated as follows:
 - 1.11.2.1. All ships with a flush deck as per Figure 1.



Figure 1

1.11.2.2. All ships with a raised forecastle and / or stern castle and / or raised mid-section as per Figures 2, 3 and 4.



Figure 2

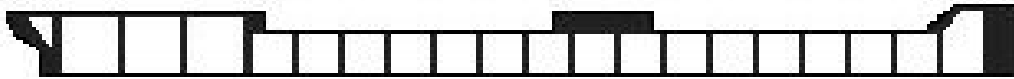


Figure 3



Figure 4

1.11.2.3. Warships that had casemates for cannon located directly below the cap rail may extend the impenetrable area down from the cap rail to encompass the casemate as per Figure 5.

1.11.2.4. A stringer, if necessary, may be added below the casemate to enable the balsa sheeting to be attached.



Figure 5

1.11.2.5. All areas of an aircraft carrier above the hangar deck are considered superstructure and must be unsealed, with all access doors, elevators, etc open, as per Figure 6.

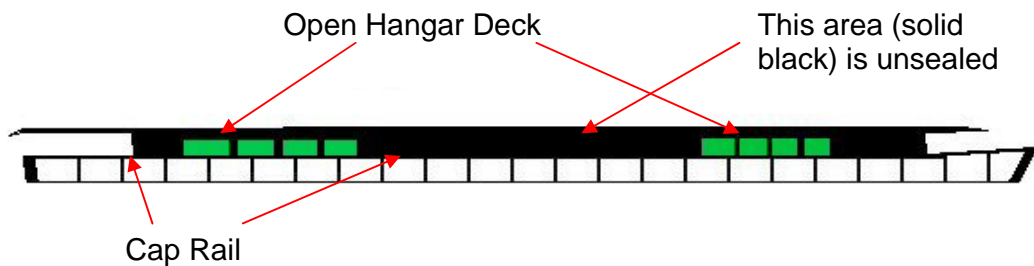


Figure 6

1.12. Penetrable Windows

1.12.1. Window Height

1.12.1.1. Window height is defined as all points below the cap rail to a point 25 mm below the waterline, as in Figure 7, or to the turn of the bilge.

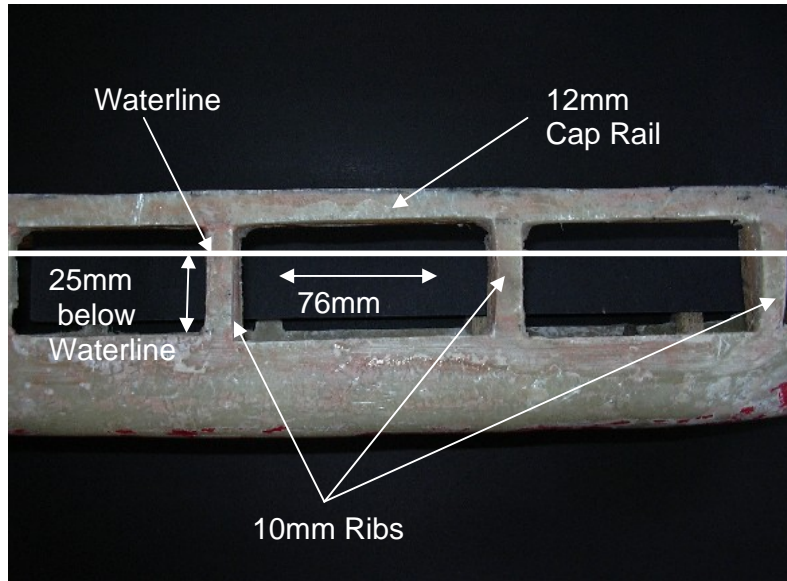


Figure 7

1.12.2. Window Start and Finish (Bow and Stern)

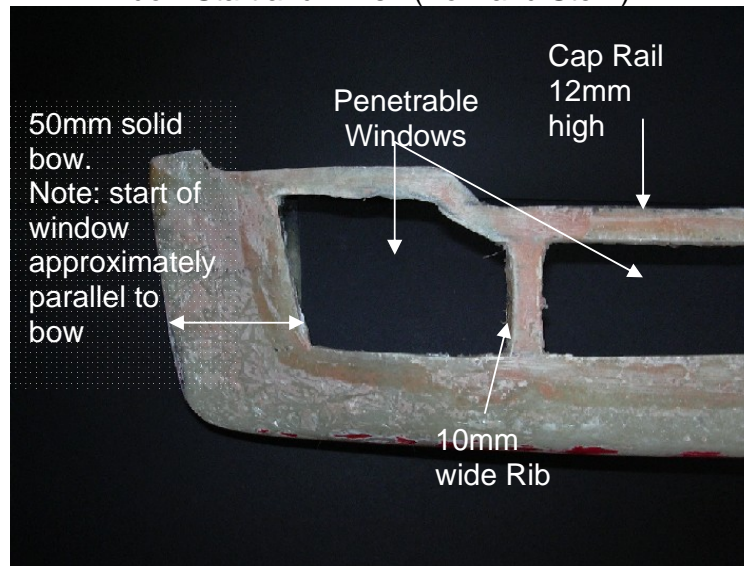


Figure 8

1.12.2.1. The hull may be impenetrable up to, but not more than, 50mm inwards from the ends of the hull (see Figure 8 for bow example). The first rib distance from the impenetrable end is to be measured at the waterline.

- 1.12.2.2. The trailing edge of the impenetrable bow should be approximately parallel to the ship's stem (the side profile of the bow - see Figure 8).
- 1.12.2.3. On ships with extremely narrow bows, the penetrable area may start at the point where there is an internal beam of 16mm.
- 1.12.3. Window Width
 - 1.12.3.1. Windows and Ribs must conform to one of the following spacing combinations:

Window Width (Space between Ribs)	Rib Width
76mm	10mm
OR	
50mm	6.4mm
OR	
25mm	3.2mm

Table 1

1.13. Stringers

- 1.13.1. A stringer may be added to a hull below a casemate as per BOR 1.11.2.4.
- 1.13.2. Stringers for armour belts or bulges may be installed only on the granting of a waiver from the Australian Battle Group Technical Officer.
- 1.13.3. The stringer can be made of any material up to 3.0mm wide.
- 1.13.4. The stringer is to be flush with the outboard side of the ribs.
- 1.13.5. The stringer may not be on the waterline.
- 1.13.6. There must be at least 10mm between the top edge of the stringer and the bottom of the cap rail.

1.14. Superstructure

- 1.14.1. The superstructure may be made of any material.
- 1.14.2. The superstructure must resemble the profile of the real ship in all three dimensions.

1.15. Blast Shields

- 1.15.1. Ships with a CO₂ cylinder must have blast shields installed to prevent impact damage to the cylinder and regulator.
- 1.15.2. Blast shields may be made of any material.
- 1.15.3. Blast shields must be mounted on the interior of the ship at least 8mm away from the interior hull skin.
- 1.15.4. The blast shield must not impede water flow in any way, or allow ball bearings to impede water flow.
- 1.15.5. The blast shield must NOT be sealed to any water channelling device in such a manner as to prevent the water from reaching the bottom of the hull.

1.16. Water Channelling

- 1.16.1. Water channelling can be installed to direct water towards the pump.
- 1.16.2. Water channelling must be no higher than 15mm above the bottom of the hull.
- 1.16.3. Water channelling must allow water to run over and flow into the rest of the ship when there is more than 15mm of water in the hull.

1.17. Pumps and Pumping Capacity

- 1.17.1. Pump capacities are listed in Appendix 1, Table 2.
- 1.17.2. Ships may have more than one pump.
- 1.17.3. Pump capacity is for all pumps combined and is based on the displacement of the original ship.
- 1.17.4. A well area in the bottom of the hull to house a pump is allowed.
- 1.17.5. The well may not protrude more than 13mm below the bottom of the boat.
- 1.17.6. The well must not be larger than necessary to allow placement of the pump.
- 1.17.7. All ships other than purpose built warships that are greater than 25,000 displacement tons are restricted to a maximum of a class 5 pump (all pumps combined).

1.18. Rudders

- 1.18.1. Rudders may be made of any material.
- 1.18.2. Rudders for Purpose Built Warships
 - 1.18.2.1. Rudders may be 25% larger in area than the original rudder as shown on the plans. When using a photocopy machine to enlarge rudder drawings, set the machine to 112% for a 25% increase in area.
- 1.18.3. Rudders for All Ships other than Purpose Built Warships
 - 1.18.3.1. Rudders may be 200% larger in area than the original rudder as shown on the plans. When using a photocopy machine to enlarge rudder drawings, set the machine to 141% for a 200% increase in area.
- 1.18.4. When enlarging a rudder, the same shape as the original must be maintained.
- 1.18.5. After a rudder has been enlarged, the rudder may be trimmed to fit the ship's profile. Material removed from one part of the rudder may NOT be added to any other part of the rudder.

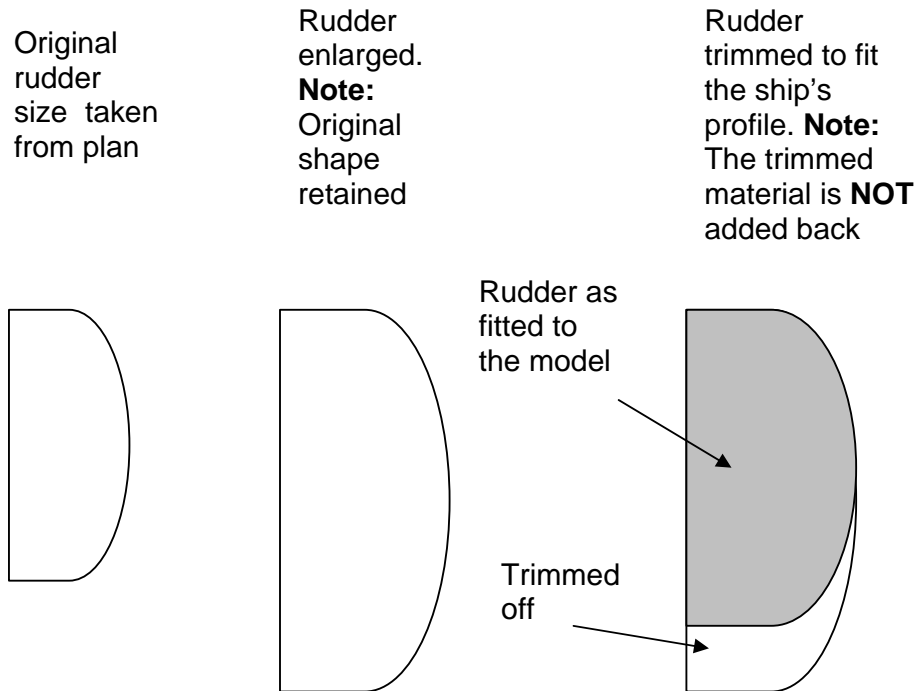


Figure 9

1.19. Propellers

- 1.19.1. Ships must have no more than the number of propellers that the real ship had.
- 1.19.2. All propellers need not be installed.
- 1.19.3. Propellers that are installed must be in the same position as on the real ship.
- 1.19.4. Bow thrusters may be used only if the real ship was so equipped.
- 1.19.5. Propellers may be up to 50% larger in area than on the real ship. When using a photocopy machine to enlarge propeller drawings, set the machine to 1.225% for a 50% increase in area.

1.20. Propulsion and Speed

- 1.20.1. Only electric motors may be used.
- 1.20.2. A minimum speed of 24 knots is allowed for purpose built warships.
- 1.20.3. A minimum speed of 22 knots is allowed for all ships other than purpose built warships.
- 1.20.4. Trial speeds are not to be used when determining a ship's maximum speed.
- 1.20.5. Scale speed is contained in Table 4, Appendix I.
- 1.20.6. At no time may motors be run faster than required to move the ship in a straight line at its rated speed. This includes, but is not limited to, during acceleration or de-acceleration, turns, groundings or while in contact with another ship.

1.21. Waterline and Boot Toppings

- 1.21.1. All ships must float at scale waterline as shown on the plans.
- 1.21.2. Boot toppings must be in scale position as shown on the plans.
- 1.21.3. Boot toppings must be 6 mm wide.
- 1.21.4. Boot toppings may be painted or striped with one layer of hobby pin stripe tape.

1.22. Paints

- 1.22.1. Only model dope, model paints, non-latex water based paints and spray can enamels are permitted on penetrable areas.

1.23. Repairs

- 1.23.1. Hull sections may be replaced with new balsa of the same thickness.
- 1.23.2. Holes may be repaired with light weight silk span and dope.
- 1.23.3. Water based wood fillers may be used, but such fillers must not add strength or thickness to the balsa wood of penetrable areas.

1.24. Submarines

- 1.24.1. May be developed under R&D.

1.25. Coastal Cannon

- 1.25.1. May be developed under R&D.

2. Research and Development (R&D)

- 2.1.1. The proposal is to be submitted to the AusBG TO for approval on the grounds of safety, who then submits the proposal to the Technical Board for review. Then it is submitted to the CO (or XO) for approval. The CO may submit the proposal to the Safety Committee for further review if necessary. Once approved, the R&D is then to be promulgated to the members for advisement.

3. Technical Board

The AusBG TO may, or may on request, convene the Technical Board. This shall consist of the AusBG TO and the Local Fleet TO's.

3.1. The Technical Board's role and duties are

- 3.1.1. Review and discuss waivers, BOR rule proposals, certifications, and discuss any technical matters that require attention.
- 3.1.2. If thought fit, recommend any technical or rule issue to be put before the Naval Staff for review.
- 3.1.3. If thought fit, recommend that that an issue be put before the Safety Committee for action.

4. Armament

4.1. Cannon – All Ships except Aircraft Carriers

- 4.1.1. Any cannon emulating armament of at least 3" bore designed to engage surface targets may be armed.
- 4.1.2. All cannons need not be installed or armed.
- 4.1.3. All armed cannon must be mounted in the correct scale position.
- 4.1.4. All armed cannon must be mounted at the correct scale height (plus or minus 10mm), measured from the underside of the barrel when horizontal.
- 4.1.5. All cannon barrels must not be longer than the correct scale length, measured from the centre of the turret ring to the muzzle.
- 4.1.6. No cannon may have a traverse greater than the correct scale traverse for that cannon.
- 4.1.7. Cannon barrels must not elevate higher than horizontal, i.e., parallel with the water's surface.
- 4.1.8. The minimum spacing between cannon barrels must be the width of the outside dimension of an adjacent cannon barrel, or scale spacing, whichever is greater.
- 4.1.9. Cannon size must be the same as on the real ship to the scale size defined in Table 3, Appendix I.
- 4.1.10. There is no limit to the number of rounds that cannon may be equipped with.

4.2. Cannon - Aircraft Carriers

- 4.2.1. For every 10 combat aircraft on a given carrier, one 1/4" barrel is allowed.
- 4.2.2. Cannons must be installed under the flight deck evenly split with half of the cannons pointed directly forward and half of the cannons pointed directly aft, with any odd barrel also pointed directly forward. Cannons are not permitted to rotate or have any depression.
- 4.2.3. The spacing between barrels must be 15mm.
- 4.2.4. The rate of fire for fore and aft cannons must not exceed one round per barrel every 30 seconds.

4.3. Cannon - Rotation

- 4.3.1. Ships can only have rotating turrets if the real ship had them. Such turrets must be in the same scale position(s) as on the real ship.

4.4. Torpedoes

- 4.4.1. Only ships that had torpedoes may be so armed.
- 4.4.2. Torpedoes may be any size up to and including 6.35 mm (1/4 inch) diameter balls.
- 4.4.3. Torpedo tubes must be in the same scale locations as on the real ship and must not exceed the total number that the ship had, however not all torpedo tubes have to be installed.

- 4.4.4. Rotating cannons can be installed to emulate movable torpedo tubes, provided other rules regarding torpedo tubes are adhered to.
- 4.4.5. Spacing of torpedo tubes shall be the same as for cannon barrels, refer to paragraph 2.1.8.
- 4.4.6. Torpedo tubes must be angled down to limit their range to a maximum of 1.2 metres.
- 4.4.7. The maximum number of balls a ship may carry for its torpedoes is three times the number of torpedoes (not tubes) carried by the original ship, or 16, whichever is greater.

4.5. Cannon and Torpedo Targeting

- 4.5.1. Cannons and torpedo tubes of a single battery must not have converging barrels that allow the balls fired to strike at the same point at any given distance.

4.6. Rate of Fire for Cannons and Torpedoes

Size	1 round per barrel every
3/16"	4 seconds
7/32"	6 seconds
1/4"	8 seconds
All Torpedoes and Aircraft Carrier cannon	30 seconds

Table 2

4.7. Mines

- 4.7.1. Mines must not damage attacked ships.
- 4.7.2. Mines must float and be recoverable.
- 4.7.3. The skipper deploying mines is responsible for recovering them at the end of battle.
- 4.7.4. Mine fields / nets are limited to 30 cm for every 10 mines the ship historically carried, up to a maximum of 3.0 metres.
- 4.7.5. The mine field / net must be weighted at one end to anchor it.
- 4.7.6. The anchor line must be just long enough to anchor in the pond.
- 4.7.7. Every mine field / net must have the first float directly above the weighted end plus one float for every 1.5 metres or fraction thereof, spaced evenly between first float and the last float at the non weighted end, as per Figure 10.

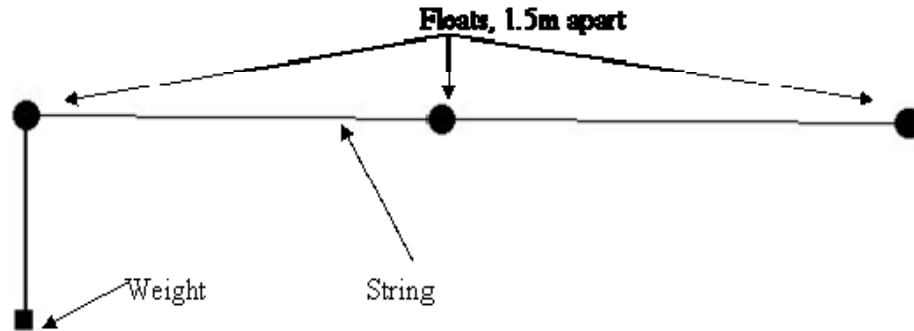


Figure 10

- 4.7.8. Mines are not to be used tactically as defensive weapons. For example, they must not be deliberately laid in front of pursuing vessels.
- 4.7.9. Mines can only be laid within four metres of any shoreline, buoy, harbour or dock.
- 4.7.10. Mine laying ships are permitted to use reverse to enable the laying of mines.
- 4.7.11. The total weight of the deployed mine string including floats, anchor weight, and drag devices that assist in the deployment of the mine is not to exceed 10 grams.

4.8. Aircraft

- 4.8.1. Aircraft carriers may launch aircraft.
- 4.8.2. Aircraft must be launched from the flight deck forward over the bow and are scored as defined in Section 4, Combat.
- 4.8.3. One aircraft may be launched every eight seconds.
- 4.8.4. Aircraft must be 1:144 scale and of the proper type and may be made of any material but must not be heavier than 14gm each.
- 4.8.5. Aircraft must be constructed such that they are recoverable and do not sink to the bottom of the pond after launching.

4.9. Other Devices / Ship Board Systems

- 4.9.1. Ship board smoke generators are allowed.
- 4.9.2. Ship board smoke generators must be commercially available types, intended for models, and correctly installed.
- 4.9.3. Automated devices that fire a cannon or torpedo without human input are not allowed.
- 4.9.4. All devices / ship board systems added that are visible on the exterior of the ship, must maintain the scale look and profile of the ship.

5. Certification and Testing

5.1. Inspection and Certification

- 5.1.1. The Local Technical Officer must inspect all ships and devices to ensure that they are in compliance with;
 - 5.1.1.1. The Australian Battle Group Inc, Building and Operations Regulations.
- 5.1.2. A complete set of plans, or information from which the ship was constructed, must be provided to the Local Technical Officer prior to inspection.
- 5.1.3. If the ships or devices are found to be in compliance as per paragraph 3.1.1, the Local Technical Officer will issue a certification for the ship or device.
- 5.1.4. The Local Secretary must maintain a log of certified ships or devices and forward a copy to the Australian Battle Group Secretary.
- 5.1.5. At the direction of the Local Commanding Officer, the Local Safety Officer may certify a ship or device in the absence of the Local Technical Officer.
- 5.1.6. The Local Commanding Officer or Local Executive Officer may grant a temporary certification in the absence of the Local Technical Officer Once a ship or device is certified it does not need to be re-certified unless it undergoes modification or is sold.
- 5.1.7. Any member of the Australian Battle Group may request a re-test on any ship or device that the member feels may be operating outside the rules.
- 5.1.8. The ship's certification sheet must be completed by the Local Technical Officer, see Appendix 2, Certification Sheet.

5.2. Testing – Cannon Velocity

- 5.2.1. When velocity testing a cannon, use only the propellant that the cannon was designed for.
- 5.2.2. Velocity is to be measured using a commercially manufactured chronograph.
- 5.2.3. The chronograph must be set so that the ball passes through the front sensor no more than 1.8 metres from the cannon.
- 5.2.4. Only one ball is allowed to pass through the chronograph at one time.
- 5.2.5. At least three shots are to successfully pass through the chronograph.
- 5.2.6. Maximum ball velocity is 50.00 metres per second.

6. Safety

6.1. General Provisions

Safety is the responsibility of all participants.

- 6.1.1. The ruling of the Executive officer and Technical Officers is final with regards to safety.
- 6.1.2. All members and participants will adhere to the safety rules.
- 6.1.3. The Executive Officers are responsible for safety of ship board and device pressure systems and for safety of participants and spectators during a battle.
- 6.1.4. All ships and devices shall be inspected for safety during Certification, described herein. If in the opinion of the Executive Officer or Technical Officers any shipboard or device system is unsafe the ship or device shall not be operated until repairs are made and the vessel or device is re-inspected.
- 6.1.5. If a member continues to operate a ship, system or device once it has been declared unsafe, in or outside of an AusBG event, after a written warning, the Member is liable to be expelled under the conditions of Rule 6.3. Safety Committee
- 6.1.6. If a member operates a ship, system, or device in any location in an unsafe or a manner to detriment of the AusBG, then the member shall be, after a written warning, liable to be expelled under the conditions of Rule 6.3. Safety Committee.
- 6.1.7. Any member can ask for a review of any other member by the Safety Committee, if the member feels that the other member is failing to adhere to the safety rules.

6.2. Safety Officers and Safety Marshal(s)

- 6.2.1. All members present at an AusBG battle or event are Safety Officers by default and are responsible for the safe execution of our hobby at that battle or event.
- 6.2.2. At least one Safety Marshal shall be appointed at any battle or event where ships or ship parts (particularly cannon in any condition) are present in proximity to any member of the public. The Safety Marshal(s) shall oversee any and all safety aspects at that battle or event.

6.3. Safety Committee

The CO may, on request, convene a Safety Committee. This shall consist of the XO, the TO's and two other Skippers. The Safety Committee can

- 6.3.1. Review system and device safety, and is authorised to make decisions for the club on safety or technical issues, or rule changes dealing with safety and technical issues, when in their judgment it is not necessary or timely to wait for the next AusBG meeting.

- 6.3.2. Where a member has breached a safety rule, after review issue a letter of warning to the member. The member shall have the right of reply to that letter.
- 6.3.3. Recommend to the CO that a member should be expelled from the club for breaches of the safety rules, or for the safety of AusBG members or the general public.
- 6.3.4. Recommend to the CO that a member should be refused membership for safety of AusBG members or the general public.

7. Weapon System Safety

7.1. CO₂ Tanks, Air Tanks and Air Compressors

- 7.1.1. All systems must be of a commercial design suitable for the pressures used in combat vessels.
- 7.1.2. The maximum pressure delivered to the weapon systems shall not exceed the limit specified in sub-rule 7.2.1.
- 7.1.3. Gas cylinders and fittings operating at non-regulated pressure must be of a commercially approved design.
- 7.1.4. No device may be installed in any pressurised portion of the CO₂ system that will prevent the pressure regulator from performing its function throughout the entire system.

7.2. Regulators

- 7.2.1. These items are pressure relief regulators, set to allow a maximum of 140 psi, unless the club chooses a lower pressure.

7.3. Pressure Gauges

- 7.3.1. All combat ships with CO₂ bottles or compressors must have an on-board pressure gauge, or a quick disconnect fitting configured to accept a pressure gauge.

7.4. Gas for Cannon Systems

- 7.4.1. Freon will not be used.
- 7.4.2. CO₂ or compressed air may be used.

7.5. High Pressure Tanks

- 7.5.1. All activities relating to compressed CO₂ cylinders must be in accordance with instructions and procedures as outlined in the Building and Operations Regulations.

7.6. Safety Switch

- 7.6.1. All ships with weapons systems shall be equipped with a safety switch.
- 7.6.2. When in the "safe" position, the switch shall allow no gas to flow to the firing valves or actuators, nor allow any current to

pass to the firing solenoids (on electrically fired systems), no matter which position the firing servo is in.

- 7.6.3. If, in the opinion of the Technical Officer or Safety Officer, a system is "unsafe", then that system will not be pressurised until repairs are made and the system is re-inspected.

7.7. Cannon Systems

- 7.7.1. No positive elevation is allowed.
- 7.7.2. Muzzle velocity shall not exceed the limits defined in the Building and Operations Regulations.

7.8. Inspections

- 7.8.1. The Safety Officer or Technical Officer will inspect the ships to insure the ships are within guidelines.
- 7.8.2. Cannons will be tested in the presence of the Technical Officer for certification and / or any time he feels a re-check is in order.
- 7.8.3. If the Technical Officer or Safety Officer declares a system "unsafe" then the vessel or device will NOT be put in the water until the necessary repairs are made.

8. Event and Participant Safety

8.1. Safety Glasses

- 8.1.1. Eye protection (safety glasses) MUST be worn by all persons at or near water's edge when cannons are fired. These glasses or goggles MUST have side protection to prevent rounds from coming in from the side.
- 8.1.2. As a minimum, this eye protection MUST comply with the "Medium Velocity Impact" section of Australian Standard 1337.

8.2. Firing weapons

- 8.2.1. No weapons will be fired until certified safe by the T.O.'s and X.O. or C.O.
- 8.2.2. Unauthorised shooting is prohibited. Weapons may only be fired after the X.O. or C.O. Or Safety Marshall have declared that shooting is permitted.
- 8.2.3. Test firing of weapons may be conducted only in designated areas.

8.3. Pond

- 8.3.1. No person may enter the pond for any purpose until the "cease fire" is called except as defined in sub-rule 8.3.2.
- 8.3.2. Camera persons may enter the water during combat if they are wearing full head and face protection such as a helmet and face shield, and then only with the permission of the Referee and at least one of the senior club officials present.

8.4. Pit Area

- 8.4.1. The "Pit Area" will be designated by sign, barriers and / or by any other means which make the area obvious.
- 8.4.2. Spectators are not allowed in the pits, i.e., only crews, invitees and Club Officials are allowed in this area.

9. General Weapon Provisions

9.1. All Cannons must be Certified

- 9.1.1. Technically certified pneumatic cannon systems are the only cannon systems authorised.

9.2. Other Devices or Non-Commercial Designs

- 9.2.1. These may be developed under R&D.

9.3. Pyrotechnic Devices

- 9.3.1. These may not be used for weapons and are forbidden from R&D development.

10. Combat

10.1. Eligibility

- 10.1.1. All ships must be certified as per the Australian Battle Group Inc, Building and Operations Regulations.
- 10.1.2. All skippers must be members of the Australian Battle Group Incorporated as defined in the Constitution of the Australian Battle Group Incorporated, Rule 3 Membership.

10.2. Collisions

- 10.2.1. A ship that deliberately collides (i.e. makes physical contact) with an opposition ship will be penalised if so requested by the skipper of the struck ship or the match referee.
- 10.2.2. A ship that deliberately blocks another ship, either by obstructing a choke point (such as a port entry/exit) or manoeuvring to force the other ship to deviate from its natural course, will be penalised if so requested by the skipper of the blocked ship or the match referee.
- 10.2.3. Where one ship is blocking another under 5.2.2 above, that ship is always considered to have caused any resulting collision for the purposes of 5.2.1 above. (i.e. if you block someone they have the right to run right over you and it will be considered your fault).

10.3. Penalty for a Collision.

- 10.3.1. A ship that deliberately collides with an opposition ship must, if so requested by the skipper of the struck ship or the match referee, complete a 30 second stop before it is allowed to fire on any other ship, return to port or continue a convoy run.

- 10.3.2. The 30 second stop penalty is to commence once the ship has come to a complete stop and is to be timed by the match referee or to the satisfaction of the disadvantaged skipper.
- 10.3.3. A ship that fails to complete a 30 second stop penalty before firing, returning to port or continuing a convoy run will be scored as sunk.

10.4. Penalty for a Sink that is caused by Collision.

- 10.4.1. A ship that deliberately collides with an opposition ship, causing the struck ship to sink, will be scored as sunk itself and withdrawn from battle for 1 hour. At their discretion, the skipper of the struck ship may permit the offending ship to return to the pond before expiry of the hour.
- 10.4.2. The struck ship is not scored as a sink.

10.5. Penalty for Damage that is caused by Collision.

- 10.5.1. A ship that deliberately collides with an opposition ship, causing the struck ship to withdraw from battle to be repaired, is to be itself withdrawn from battle until the struck ship is repaired, or for 1 hour, whichever is the shortest period. At their discretion, the skipper of the struck ship may permit the offending ship to return to the pond before a completed repair or expiry of the hour.

10.6. Technical Time Out

- 10.6.1. The purpose of the Technical Time Out is to correct minor technical problems in a timely manner such as props being fouled by weeds, moss or debris, or to align turrets. etc.
- 10.6.2. If the float and line of any ship is accidentally deployed during a game the ship immediately goes on a Technical Time Out and must return to the nearest shoreline and clear the problem.

10.7. A Technical Time Out may be called on a ship at any time.

- 10.7.1. The skipper declaring the Technical Time Out, will correct the problem after returning the ship to the nearest shoreline.
- 10.7.2. The ship should not be removed from the water to clear the problem unless it is otherwise unsafe, difficult, or impossible to correct the problem.
- 10.7.3. If a Technical Time Out is called by a ship on "5 MINUTES" and if the ship is removed from the water the five minute time begins anew after clearing the problem and replacing the ship in the water. If the ship is not removed from the water the 5 minute time stops during the Technical Time Out and is resumed when the Technical Time Out is over.

10.8. Five Minute Rule

- 10.8.1. If a skipper feels his/her ship is in danger of sinking, or if the ship is disabled and can not return to port, then the skipper may request that the referee call "5 MINUTES" The referee shall call "5 MINUTES" then start a timer, but shall not announce which ship is on 5 minutes.
- 10.8.2. If no referee is available then any skipper may call "5" and start a timer, or have a team mate make the announcement and start a timer. It is not required that the ship on "5 MINUTES" be identified.
- 10.8.3. The ship on "5 MINUTES" remains fair game for the 5 minute time, but may manoeuvre and return fire if able to do so and may be defended by team mates.
- 10.8.4. After the "5 MINUTES" have elapsed the referee or skipper will call "CEASE FIRING!"
- 10.8.5. Scoring
 - 10.8.5.1. If the ship on "5 MINUTES" sinks prior to the expiration of the "5 MINUTES" it will be scored as sunk.
 - 10.8.5.2. If the ship on "5 MINUTES" is removed from the water anywhere but its home port, it will be scored as lost.
 - 10.8.5.3. If a ship on "5 MINUTES" returns to home port (it may be pushed or towed by friendly ships), before the 5 minute time has lapsed the timer is stopped and the ship shall not be scored as lost.

10.9. Cease Fire

- 10.9.1. Any person may call a Cease Fire at any time to correct a safety problem or to recover a vessel which is sunk, surrendered, lost or the current subject of a technical time out.
- 10.9.2. During a Cease Fire the game is suspended - no vessel may fire or make progress on any objective (inc continue with a convoy run)
- 10.9.3. During a Cease Fire a vessel may either stop dead in the water and hold its position or it may return to port.
- 10.9.4. Any vessel that does NOT stop MUST return to port before re-entering play and forfeits any progress it has accumulated towards a convoy run.

10.10. Combat

- 10.10.1. The match referee, Commanding Officer, or Executive Officer shall start the game by announcing "COMMENCE FIRING".
- 10.10.2. The game shall stop immediately when any person announces "CEASE FIRING" Any person may call a cease fire any time they feel an unsafe act is in progress and request that the Executive Officer investigate.
- 10.10.3. Once in play all ships on the water are considered fair game.

- 10.10.4. Any ship may return to port at any time and for any reason, or as defined by game addendum being used for the particular battle sortie.
- 10.10.5. A ship is considered sunk if the main deck is 60% or more awash, or if it is beached and the keel is on the bottom.
- 10.10.6. A ship is considered sunk if it is removed from the water at any place other than the port at which it departed, but ships on "5 MINUTES" removed from the water anywhere but their port, (that survived the 5 minute time), will be scored as lost.
- 10.10.7. Running in reverse during combat is not allowed.
- 10.10.8. Reverse is only be permitted;
 - 10.10.8.1. To bring the ship to a halt, or to slow its forward momentum
 - 10.10.8.2. In port
 - 10.10.8.3. Whilst returning to port with bow damage
 - 10.10.8.4. The result of mechanical failure.

10.11. Recovery of Sunk or Disabled Ships

- 10.11.1. Once recovery of a sunk or disabled ship is ready to commence a Cease fire is to be called by the match referee or person(s) involved in the recovery as per section. 5.5
- 10.11.2. Once the vessel is recovered and the recovery boat has returned to shoreline the match referee or person(s) involved in the recovery that called the cease fire will announce "RESUME BATTLE" and the game will continue.

11. Scoring

- 11.1.1. Scoring Hits on Ships Resulting from Cannon Fire and Aircraft
- 11.1.2. A scored Hit is one that hits between the cap rail and the bottom of the penetrable area, and causes any of the following:
 - 11.1.2.1. a hole
 - 11.1.2.2. a tear
 - 11.1.2.3. a split
- 11.1.3. Ship's captains may score their own ships, but the opposing side may "assist".
- 11.1.4. All hits that penetrate the hull will be scored. Hits on or above the cap rail, or to Non-penetrable areas will not be scored. Points will be assessed as follows:
 - 11.1.4.1. Hits below the boot 50 points each
 - 11.1.4.2. Hits on the boot 25 points each
 - 11.1.4.3. Hits above the boot 10 points each

11.2. Scoring hits by an aircraft launched from an aircraft carrier.

- 11.2.1. An aircraft that strikes a ship shall be scored at 100 points regardless of where it struck the ship.
- 11.2.2. Only the first ship struck shall be scored as a hit if the aircraft glances off one ship and strikes a second ship.

- 11.2.3. If the aircraft skips off the waters surface and hits a ship it shall be scored as a hit.

11.3. Scoring Hits Coastal Targets

- 11.3.1. Hits to shore targets shall be scored at 10 points per hit regardless of the size of the ball.

11.4. Scoring Sunk Vessels

- 11.4.1. If a vessel sinks, or for any reason does not return to the port from which it was launched it shall be declared "sunk," with the exception of those exempted under Section 5.6 Technical Time Out or Section 5.4 Collisions.
- 11.4.2. Points for a sunk vessel are scored at 100 times the Combat Factor assigned in accordance with Chapter 8.
- 11.4.3. Hits that were taken during the sortie the ship sank are not scored.
- 11.4.4. A ship that has received no hits during battle, but somehow sinks, will be declared an "Unseaworthy Sink". Unseaworthy sinks are scored at the loss value of the ship.

11.5. Surrendered Vessels and Vessels Declared Sunk

- 11.5.1. Surrendered vessels and vessels declared sunk are scored at 110 times the combat factor.
- 11.5.2. A vessel may be declared sunk and immediately removed from the water by a skipper to prevent further damage. It is immediately considered out of play and is scored as a surrendered vessel.

11.6. Scoring Convoy Runs

- 11.6.1. For each successful convoy run the team shall be awarded points as defined on Table 5, Appendix 1. A convoy run is a set number of laps around a course. The standard number of laps will be determined on the day and layout of the pond.
- 11.6.2. Convoy ships running the minimum speed of 22 knots must depart port, complete the standard number of laps around the defined course and return to port score points.
- 11.6.3. Convoy ships running greater than 22 knots must depart port, complete twice the standard number of laps around the defined course and return to port to be awarded points.
- 11.6.4. If 3 or more convoy vessels make a successful convoy run, starting, staying on and completing the course together an additional 500 points shall be awarded.
- 11.6.5. If faster convoy ships maintain the 22 knot speed of the slower convoy ships and stay with the convoy for the entire course as defined in item 3, they need complete only the standard number of laps around the course to score both the in-convoy points and individual convoy ship points.

11.7. Penalty for Non-Compliance to the Building and Operations Regulations.

- 11.7.1. Ships with safety violations shall be immediately removed from play until the problem is corrected.
- 11.7.2. Ships that do not comply with the Australian Battle Group Inc, Building and Operations regulations will be immediately removed from play until the ship complies.

12. Combat Factor

12.1. Combat Factor of Purpose Built Warships

- 12.1.1. Each purpose built warship shall be assigned a combat factor to reflect the ships relative combat value for the sake of scoring and for comparison to other ships.
- 12.1.2. The formula for computing CF is the sum of the values from the following factors.

Armour

1 point for each .8 mm (1/32 inch) of hull armour thickness

Cannons

1 point for each operational .177 (BB) barrel
2 points for each operational 3/16 barrel
3 points for each operational 7/32 barrel
4 points for each operational 1/4 barrel

Rotation

1 point for each barrel in a rotating turret.

Depressing Barrels on Turrets

1/2 point for each barrel in a rotating turret.

Torpedoes

1 points for each operational non-reloading tube
2 points for each operational reloading tube

Speed

22-26 knots	0 points
27-30 knots	1 point
31-35 knots	2 points
36-40 knots	3 points
41 + knots	4 points

Pumping (refer to Appendix 1, Table 2)

Category 1 pump,	1 point
Category 2 pump,	2 point
Category 3 pump,	3 points
Category 4 pump,	4 points
Category 5 pump,	5 points
Category 6 pump,	6 points
Category 7 pump,	7 points
Category 8 pump,	8 points

12.2. Combat Factor of All Ships other than Purpose Built Warships

- 12.2.1. All ships other than purpose built warships shall be assigned a combat factor to reflect the ships relative combat value for the sake of scoring and for comparison to other ships.
- 12.2.2. The formula for computing CF is the sum of the values from the following factors.

Armour

1 point for each .8 mm (1/32 inch) of hull armour thickness

Cannons

0.5 point for each operational .177 (BB) barrel
1.0 points for each operational 3/16 barrel
1.5 points for each operational 7/32 barrel
2.0 points for each operational 1/4 barrel

Rotation

0.5 point for each barrel in a rotating turret.

Depressing Barrels on Turrets

0.25 point for each barrel in a rotating turret.

Torpedoes

0.5 points for each operational non-reloading tube
1.0 points for each operational reloading tube

Speed

22-26 knots	0 points
27-30 knots	1 point
31-35 knots	2 points
36-40 knots	3 points
41 + knots	4 points

Pumping (refer to Appendix 1, Table 2)

Category 1 pump,	1 point
Category 2 pump,	2 point
Category 3 pump,	3 points
Category 4 pump,	4 points
Category 5 pump,	5 points
Category 6 pump,	6 points
Category 7 pump,	7 points
Category 8 pump,	8 points

Cargo Value

Displacement		
Tonnes	Tons	
0 to 10,159	0 to 9,999	0 points
10,160 to 20,319	10,000 to 19,999	1 points
20,320 to 40,640	20,000 to 39,999	2 points
40,641 or more	40,000 or more	3 points

13. Appendix I

13.1. Table 1 Armour/Balsa Thickness

Armour Thickness of Ship	Maximum Balsa
0.00" to 6.99"	1.6mm (1/16")
7.00" to 11.9"	2.4mm (3/32")
12.0" and above	3.2mm (1/8")

13.2. Table 2 Pump Discharge Rates

Pump Category	Displacement (Tonnes)	Displacement (Tons)	Litres per Hour	Seconds to pump 2 litres
1	<i>Deleted</i>	<i>Deleted</i>	22.02	327
2	Under 9,143	Under 8,999	45	160
3	9,144 to 17,272	9,000 to 16,999	90	80
4	17,273 to 25,400	17,000 to 24,999	135.85	53
5	25,401 to 35,561	25,000 to 34,999	180	40
6	35,562 to 50,801	35,000 to 49,999	248.28	29
7	50,802 to 60,963	50,000 to 60,000	313.04	23
8	Over 60,963	Over 60,000	400	18

13.3. Table 3 Cannon Calibre Sizes

3" to 10.99" - - - - - to a maximum of 3/16"
(76.0mm to 279.1mm)
11" to 14.9" - - - - - to a maximum of 7/32"
(279.2mm to 379mm)
15" and greater. - - - - - to a maximum of 1/4"
(380mm to 508mm)

13.4. Table 4 Speed Chart

Spd	Sec	Spd	Sec	Spd	Sec	Spd	Sec
22	51.1	30	37.5	38	29.6	46	24.5
23	48.9	31	36.3	39	28.9	47	23.9
24	46.9	32	35.2	40	28.1	48	23.4
25	45	33	34.1	41	27.4	49	23
26	43.3	34	33.1	42	26.8	50	22.5
27	41.7	35	32.1	43	26.2		
28	40.2	36	31.2	44	25.6		
29	38.8	37	30.4	45	25.0		

13.5. Table 5 Convoy Run Points

Convoy Ship Type	Convoy Score
Converted Destroyers	200 points
1,000 to 9,999 tons	500 points
10,000 to 19,999 tons	1,000 points
20,000 to 39,000 tons	1,500 points
40,000 or more tons	2,000 points

14. Appendix 2

14.1. Purpose Built Warship - Certification Sheet

CERTIFICATION DATE ____/____/____

CLASS _____

AS BUILT AT (DATE) ____/____/____

NAME _____ SKIPPER

DISPLACEMENT _____ tons PUMP _____ per hr. sat/unsat

SPEED ____ knots 30.48 metres (100 feet) _____ sec. sat/unsat

RUDDER SIZE SCALE +25% _____ sat/unsat

RUDDER PLACEMENT sat/unsat

RUDDER NUMBER sat/unsat

PROPELLER SIZE sat/unsat

PROPELLER PLACEMENT sat/unsat

PROPELLER NUMBER sat/unsat

ARMOR _____ SCALE _____ sat/unsat

RIB SPACING sat/unsat

PENETRABLE AREA sat/unsat

WATER CHANNELING sat/unsat

SCALE WATERLINE sat/unsat

BOOT TOPPING sat/unsat

OVERALL HULL sat/unsat

ARMAMENT - MAIN _____ SCALE SIZE _____ sat/unsat

NUMBER _____ sat/unsat

PLACEMENT sat/unsat

ARMAMENT - SEC. _____ SCALE SIZE _____ sat/unsat

NUMBER _____ sat/unsat

PLACEMENT sat/unsat

TORPEDOES _____ SCALE SIZE _____ sat/unsat

NUMBER _____ sat/unsat

PLACEMENT sat/unsat

C.O.2 SYSTEM - COMMERCIAL DESIGN, SUITABLE, SAFE sat/unsat

C.O.2 SHUT OFF VALVE (SWITCH) sat/unsat

RECOVERY FLOAT sat/unsat

WAIVER #1 _____ T.O. _____

WAIVER #2 _____ T.O. _____

The ship meets all technical and safety rules with the exception of the above waivers,
and is hereby certified for combat in accordance with all applicable rules.

T.O. _____ C.O. _____

15. Appendix 3

15.1. All Ships other than a Purpose Built Warship – Certification Sheet

CERTIFICATION DATE ____/____/____
CLASS _____
AS BUILT AT (DATE) ____/____/____
NAME _____ SKIPPER _____

DISPLACEMENT _____ tons PUMP _____ per hr. sat/unsat
SPEED ____ knots 30.48 metres (100 feet) _____ sec. sat/unsat
Cargo Points _____ Sink Value _____

RUDDER SIZE SCALE +100% _____ sat/unsat
RUDDER PLACEMENT sat/unsat
RUDDER NUMBER sat/unsat
PROPELLER SIZE sat/unsat
PROPELLER PLACEMENT sat/unsat
PROPELLER NUMBER sat/unsat

ARMOR _____ SCALE _____ sat/unsat
RIB SPACING sat/unsat
PENETRABLE AREA sat/unsat
WATER CHANNELING sat/unsat
SCALE WATERLINE sat/unsat
BOOT TOPPING sat/unsat
OVERALL HULL sat/unsat

ARMAMENT - MAIN _____ SCALE SIZE _____ sat/unsat
NUMBER _____ sat/unsat
PLACEMENT sat/unsat
ARMAMENT - SEC. _____ SCALE SIZE _____ sat/unsat
NUMBER _____ sat/unsat
PLACEMENT sat/unsat
TORPEDOES _____ SCALE SIZE _____ sat/unsat
NUMBER _____ sat/unsat
PLACEMENT sat/unsat
C.O.2 SYSTEM - COMMERCIAL DESIGN, SUITABLE, SAFE sat/unsat
C.O.2 SHUT OFF VALVE (SWITCH) sat/unsat
RECOVERY FLOAT sat/unsat

WAIVER #1 _____ T.O. _____
WAIVER #2 _____ T.O. _____

The ship meets all technical and safety rules with the exception of the above waivers, and is hereby certified for combat in accordance with all applicable BOR's.

T.O. _____ C.O. _____