

1. Preamble

- 1.1. We build miniature versions of historical ships. These rules describe how we diverge from the original. Where the rules are silent or ambiguous – take what the real ship could do as your guide
- 1.2. The intent of these regulations is to allow a range of ships and ship types to be competitive. There is always a risk that someone will come up with a legal way to build a ship that greatly unbalances the game. Should this happen, the members of the AusBG reserve the right to adjust the regulations, for the good of the sport, and to require all existing and new ships to comply.

2. Ship Construction

2.1. Period

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

2.2. Standard References

- 2.2.1. The only sources of information for warships' specifications used in the Australian Battle Group Inc. are:
 - 2.2.1.1. Conway's, All the World's Fighting Ships, (1860-1905).
 - 2.2.1.2. Conway's, All the World's Fighting Ships, (1905-1921).
 - 2.2.1.3. Conway's, All the World's Fighting Ships, (1922-1946).
- 2.2.2. A merchant ship must be built as per plans and or specifications that are applicable to that ship.
- 2.2.3. Building information for warships and merchant ships is further defined in the Australian Battle Group Inc. Building Regulations.

2.3. Waivers to the Building and Operations Regulations

- 2.3.1. The Australian Battle Group Technical Officer may grant waivers for ships that do not comply with the Building Regulations.
- 2.3.2. Circumstances under which a waiver may be granted:
 - 2.3.2.1. When the information described in Conway's is found to be incomplete or incorrect.
 - 2.3.2.2. When a member wishes to sail a valid warship which is not listed in Conway's.
 - 2.3.2.3. 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

- 2.3.3. All approved waivers will be published on the Australian Battle Group Inc. web site within two months of the granting of the waiver.

2.4. Displacement

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

2.5. Ships of a Class

- 2.5.1. Ships of a class may be named after any ship of that class.
- 2.5.2. Ships' names are encouraged to be historical or semihistorical.

2.6. Scale

- 2.6.1. 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.

2.7. Build as at a Single Point in Time

- 2.7.1. Ships must be constructed as they were at a single point of time during the period covered by Section 2.1.1, however the following is allowed:
- 2.7.1.1. Where a ship commenced a refit during the period covered by Section 2.1.1 the model may be built to that design, regardless of when (or if) that refit was completed.
- 2.7.1.2. Where a ship was laid down during the period covered by Section 2.1.1 but not completed, the model may be constructed to the design as laid down.

2.8. Hull Construction

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

2.9. Buoyancy

- 2.9.1. Ships must be sinkable.
- 2.9.2. 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.

2.10. Ships under 15,000 Displacement Tons

Only ships under 15,000 tonnes may have the following:

- 2.10.1. 10mm extra draft may be added to the hull beneath the waterline. The water line and freeboard must remain the same as the original vessel.
- 2.10.2. 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.

2.11. Cap Rail

2.11.1. The maximum combined thickness of the deck and cap rail must not exceed 12 mm.

2.11.2. Examples of the position of the cap rail are indicated as follows:

2.11.2.1. All ships with a flush deck as per Figure 1.



Figure 1

2.11.2.2. 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

2.11.2.3. 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

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

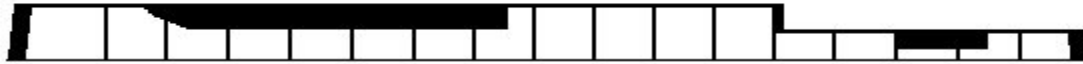


Figure 5.

2.11.2.5. 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.

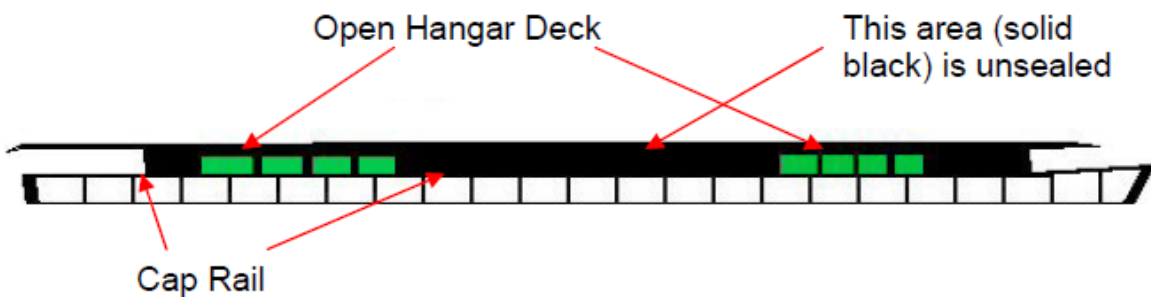


Figure 6

2.12. Penetrable Windows

2.12.1. Window Height

2.12.1.1. 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.

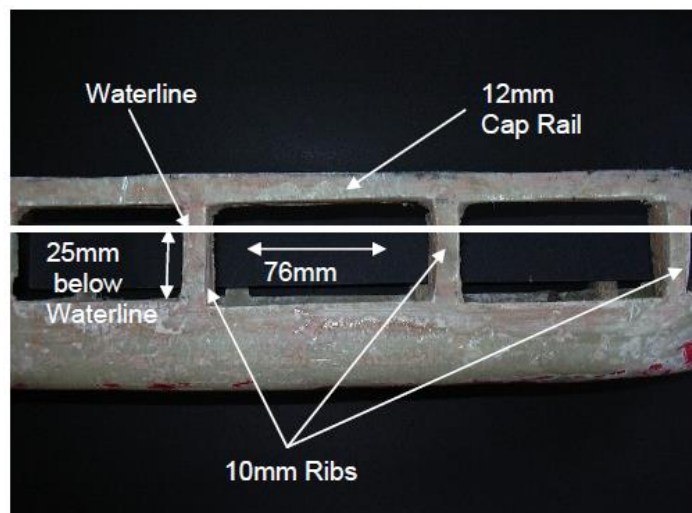


Figure 7

Window Start and Finish (Bow and Stern)

1.12.2. Window Start and Finish (Bow and Stern)

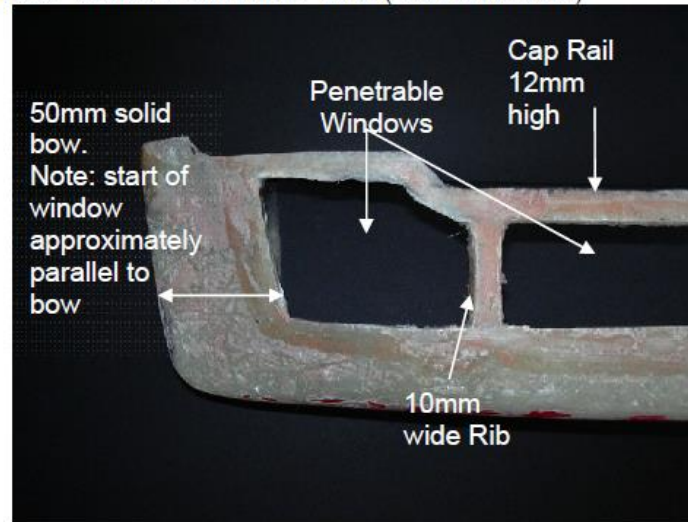


Figure 8

- 2.12.1.2. 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.
- 2.12.1.3. 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).
- 2.12.1.4. On ships with extremely narrow bows, the penetrable area may start at the point where there is an internal beam of 16mm.

2.12.2. Window Width

- 2.12.2.1. Windows and Ribs must conform to one of the following spacing combinations:

Min Window Width (Space between Ribs)	Max Rib Width
75 mm	10 mm
50 mm	7 mm
25 mm	4 mm

2.13. Stringers

- 2.13.1. A stringer may be added to a hull below a casemate as per Section 2.11.2.4.
- 2.13.2. Stringers for armour belts or bulges may be installed only on the granting of a waiver from the Australian Battle Group Technical Officer.

- 2.13.3. The stringer can be made of any material up to 3.0mm wide.
- 2.13.4. The stringer must be flush with the outboard side of the ribs.
- 2.13.5. The stringer may not be on the waterline.
- 2.13.6. There must be at least 10mm between the top edge of the stringer and the bottom of the cap rail.

2.14. Superstructure

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

2.15. Blast Shields

- 2.15.1. Ships with a CO₂ cylinder must have blast shields installed to prevent impact damage to the cylinder and regulator.
- 2.15.2. Blast shields may be made of any material.
- 2.15.3. Blast shields must be mounted on the interior of the ship at least 8mm away from the interior hull skin.
- 2.15.4. The blast shield must not impede water flow in any way, or allow ball bearings to impede water flow.
- 2.15.5. 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.

2.16. Water Channelling

- 2.16.1. Water channelling may be installed to direct water towards the pump.
- 2.16.2. Water channelling must be no higher than 15mm above the bottom of the hull.
- 2.16.3. 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.

2.17. Pumps and Pumping Capacity

- 2.17.1. Pump capacities are listed in Appendix 1, Table 2.
- 2.17.2. Ships may have more than one pump.
- 2.17.3. Pump capacity is for all pumps combined and is based on the displacement of the original ship.
- 2.17.4. A well area in the bottom of the hull to house a pump is allowed.
- 2.17.5. The well may not protrude more than 13mm below the bottom of the boat.
- 2.17.6. The well must not be larger than necessary to allow placement of the pump.

- 2.17.7. 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).

2.18. Rudders

2.18.1. Installed rudders.

- 2.18.1.1. Not all rudders need to installed on the model
- 2.18.1.2. Rudders may be made of any material.
- 2.18.1.3. Rudder posts must be in the correct position and angle as per the plans
- 2.18.1.4. An installed rudder may be of any size or shape provided it fits entirely within the appropriate rudder outline from the AusBG website when the outline's rudder post is lined up with the rudder post of the installed rudder

2.18.2. AusBG Rudder outlines

- 2.18.2.1. Due to different plans for the same ship having very different rudders it is the responsibility of the TO or his delegate determine a standard rudder outline for each class of ship which is to be published on the website for use in 2.18.1 above
- 2.18.2.2. For purpose built warships the rudder outline will be created by enlarging the area of the rudder shown on the plans to 125% of the original, keeping the same proportions (When using a photocopy machine to enlarge rudder drawings, set the machine to 112% to enlarge the area to 125% of the original.)
- 2.18.2.3. For ship other than purpose built warships the rudder outline will be created by enlarging area of the rudder shown on the plans to 200% of the original, keeping the same proportions (When using a photocopy machine to enlarge rudder drawings, set the machine to 141% to enlarge the area to 200% of the original.)

2.19. Propellers

- 2.19.1. Ships must have no more than the number of propellers that the real ship had.
- 2.19.2. All propellers need not be installed.
- 2.19.3. Propellers that are installed must be in the same position as on the real ship.
- 2.19.4. Bow thrusters may be used only if the real ship was so equipped.

- 2.19.5. 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.

2.20. Propulsion and Speed

- 2.20.1. Only electric motors may be used.
- 2.20.2. A Maximum speed of 22 knots is allowed for all ships making a cargo run, unless the actual ship's speed as defined under section 1.2 standard references is greater than 22 knots in which case the maximum allowed speed is defined as per section 1.2.
- 2.20.3. A maximum speed of 24 knots is allowed for all other ships unless the actual ship speed as defined under section 1.2 Standard References is greater than 24 knots, in which case the maximum allowed speed is defined as per section 1.2.
- 2.20.4. A ships maximum speed is it's normal (not Trial) maximum speed as defined in section 1.2 Standard references, Trial speeds are not to be used when determining a ship's maximum speed.
- 2.20.5. Scale speed is contained in Table 4, Appendix I.
- 2.20.6. 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.

2.21. Waterline and Boot Toppings

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

2.22. Paints

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

2.23. Repairs

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

2.24. Submarines

2.24.1. May be developed under R&D.

2.25. Coastal Cannon

2.25.1. May be developed under R&D.

3. Research and Development (R&D)

3.1.1. R & D to occur at a local level with concurrence of all skippers present. Nothing in R & D to be in contravention of the existing safety rules. R & D is to be used to get a ship to comply with existing rules not to allow a ship to be built which goes outside these Building Regulations.

3.1.2. As soon as practical all TOs in the AusBG are to be informed as to the R&D activity

4. 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.

4.1. The Technical Board's role and duties are

4.1.1. Review and discuss waivers, Building or Operation Regulations proposals, certifications, and discuss any technical matters that require attention.

4.1.2. If thought fit, recommend any technical or rule issue to be put before the Naval Staff for review.

4.1.3. If thought fit, recommend that that an issue be put before the Safety Committee for action.

5. Armament

5.1. Ball Delivery Systems (BDS) – All Ships except Aircraft Carriers

5.1.1. Any Ball Delivery System emulating armament of at least 3" bore designed to engage surface targets may be armed.

5.1.2. All armament need not be installed or armed.

5.1.3. All Ball Delivery System must be mounted in the correct scale position.

5.1.4. All Ball Delivery System must be mounted at the correct scale height (plus or minus 10mm), measured from the underside of the barrel when horizontal.

- 5.1.5. All Ball Delivery System barrels must not be longer than the correct scale length, measured from the centre of the turret ring to the muzzle.
- 5.1.6. No Ball Delivery System may have a traverse greater than the correct scale traverse for that emulated armament.
- 5.1.7. Ball Delivery System barrels must not elevate higher than horizontal, i.e., parallel with the water's surface.
- 5.1.8. The minimum spacing between Ball Delivery System barrels must be the width of the outside dimension of an adjacent Ball Delivery System barrel, or scale spacing, whichever is greater.
- 5.1.9. Ball Delivery System size must be the same as the emulated armament on the real ship to the scale size defined in Table 3, Appendix I.
- 5.1.10. There is no limit to the number of rounds that Ball Delivery System may be equipped with.

5.2. Ball Delivery System - Aircraft Carriers

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

5.3. Ball Delivery System - Rotation

- 5.3.1. 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.

5.4. Torpedoes

- 5.4.1. Only ships that had torpedoes may be so armed.
- 5.4.2. The size balls a torpedo tube may fire depends on the number of torpedo tubes installed on the ship
 - 5.4.2.1. Ships with 1 to 8 torpedo tubes per side may use any ball size up to and including 1/4" diameter.
 - 5.4.2.2. Ships with 9 or more torpedo tubes per side must only use 3/16" diameter balls..

- 5.4.3. 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.
- 5.4.4. Rotating Ball Delivery Systems can be installed to emulate movable torpedo tubes, provided other rules regarding torpedo tubes are adhered to.
- 5.4.5. Spacing of torpedo tubes shall be the same as for Ball Delivery System barrels, refer to paragraph 2.1.8.
- 5.4.6. Torpedo tubes must be angled down to limit their range to a maximum of 1.2 metres.
- 5.4.7. 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.
- 5.4.8. Torpedo tubes may not overhang the hull further than scale drawings allow

5.5. Converging Barrels

- 5.5.1. Ball Delivery System Barrels of a single battery must not have converging barrels that allow the balls fired to strike at the same point at any given distance.

5.6. Rate of Fire for Ball Delivery Systems

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

5.7. Mines

- 5.7.1. Mines must not damage attacked ships.
- 5.7.2. Mines must float and be recoverable.
- 5.7.3. The skipper deploying mines is responsible for recovering them at the end of battle.
- 5.7.4. Mine fields / nets are limited to 30 cm for every 10 mines the ship historically carried, up to a maximum of 3.0 metres.
- 5.7.5. The mine field / net must be weighted at one end to anchor it.
- 5.7.6. The anchor line must be just long enough to anchor in the pond.

- 5.7.7. 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.

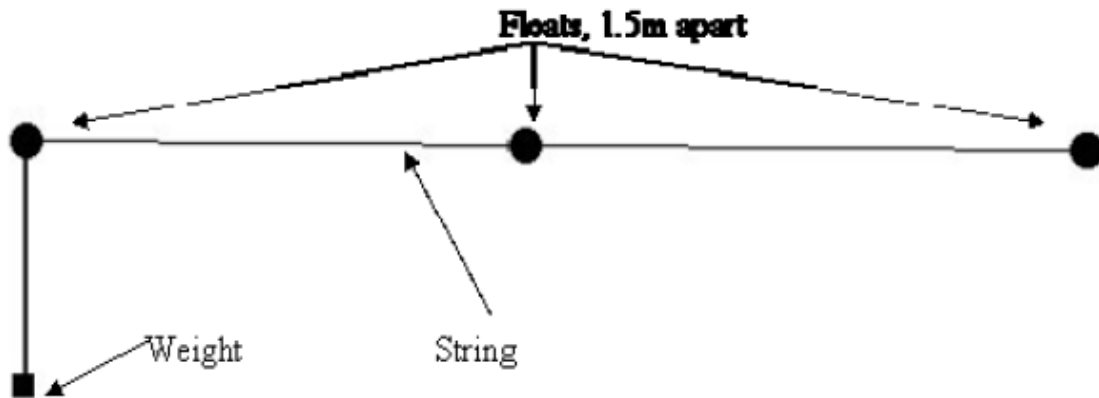


Figure 10

- 5.7.8. Mines are not to be used tactically as defensive weapons. For example, they must not be deliberately laid in front of pursuing vessels.
- 5.7.9. Mines can only be laid within four metres of any shoreline, buoy, harbour or dock.
- 5.7.10. Mine laying ships are permitted to use reverse to enable the laying of mines.
- 5.7.11. 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.

5.8. Aircraft

- 5.8.1. Aircraft carriers may launch aircraft.
- 5.8.2. Aircraft must be launched from the flight deck forward over the bow and are scored as defined in the Operating Regulations.
- 5.8.3. One aircraft may be launched every eight seconds.
- 5.8.4. 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.
- 5.8.5. Aircraft must be constructed such that they are recoverable and do not sink to the bottom of the pond after launching.

5.9. Other Devices / Ship Board Systems

- 5.9.1. Ship board smoke generators are allowed.
- 5.9.2. Ship board smoke generators must be commercially available types, intended for models, and correctly installed.

- 5.9.3. Automated devices that fire a Ball Delivery System without human input are not allowed.
- 5.9.4. 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.

6. Certification and Testing

6.1. Inspection and Certification

- 6.1.1. The Local Technical Officer must inspect all ships and devices to ensure that they are in compliance with these Building Regulations
- 6.1.2. A complete set of plans, or information from which the ship was constructed, must be provided to the Local Technical Officer prior to inspection.
- 6.1.3. If the ships or devices are found to be in compliance as per paragraph 6.1.1, the Local Technical Officer will issue a certification for the ship or device.
- 6.1.4. The Local Secretary must maintain a log of certified ships or devices and forward a copy to the Australian Battle Group Secretary.
- 6.1.5. 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.
- 6.1.6. The Local Commanding Officer or Local Executive Officer may grant a temporary certification in the absence of the Local Technical Officer
- 6.1.7. Once a ship or device is certified it does not need to be re-certified unless BDS systems in it are added to or modified, or the ship is sold to another member in which case it must be recertified for the new owner..
- 6.1.8. 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.
- 6.1.9. The ship's certification sheet must be completed by the Local Technical Officer, see Appendix 2, Certification Sheet.

6.2. Testing – Ball Delivery System Velocity

- 6.2.1. When velocity testing a Ball Delivery System, use only the propellant that the Ball Delivery System was designed for.
- 6.2.2. Velocity is to be measured using a commercially manufactured chronograph.
- 6.2.3. The chronograph must be set so that the ball passes through the front sensor no more than 1.8 metres from the Ball Delivery System.
- 6.2.4. Only one ball is allowed to pass through the chronograph at one time.
- 6.2.5. At least three shots are to successfully pass through the chronograph.
- 6.2.6. Maximum ball velocity is 50.00 metres per second.

- 6.2.7. Velocity must be tested with full magazines and all barrels firing correctly. Each barrel must be tested and after each shot the magazine must be filled to minimise dead space before it is tested again

7. Ball Delivery 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 Section 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 Ball Delivery Systems

- 7.4.1. CO₂ or compressed air must 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 Regulations and the 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. Ball Delivery Systems

- 7.7.1. No positive elevation is allowed.
- 7.7.2. Muzzle velocity shall not exceed the limits defined in the Building 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. Ball Delivery Systems 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. General Weapon Provisions

8.1. All Ball Delivery Systems must be Certified

- 8.1.1. Technically certified pneumatic Ball Delivery Systems are the only systems authorised.

8.2. Other Devices or Non-Commercial Designs

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

8.3. Pyrotechnic Devices

- 8.3.1. Pyrotechnic Devices are banned from any use at Australian Battle Group Meetings.

Appendix 1

Table 1 Armour/Balsa Thickness

Armour Thickness of Ship	Maximum Balsa
0.00" to 6.99"	1.6mm (1/16")
7.00" to less than 11.75"	2.5mm (3/32")
11.75" and above	3.2mm (1/8")

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

Table 3 Cannon Calibre Sizes to Ball Delivery System bores

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)

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		

Appendix 2

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/na

NUMBER _____ sat/unsat/na

PLACEMENT sat/unsat/na

TORPEDOES _____ SCALE SIZE _____ . . sat/unsat/na

NUMBER _____ sat/unsat/na

PLACEMENT sat/unsat/na

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. _____

Appendix 3

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/na.

NUMBER _____ sat/unsat/na.

PLACEMENT sat/unsat/na.

ARMAMENT - SEC. _____ SCALE SIZE _____ sat/unsat/na.

NUMBER _____ sat/unsat/na.

PLACEMENT sat/unsat/na.

TORPEDOES _____ SCALE SIZE _____ sat/unsat/na.

NUMBER _____ sat/unsat/na.

PLACEMENT sat/unsat/na.

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

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

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. _____