

Operations Bulletin Tow Lines & SWL

December 9, 2020

All RCMSAR vessels are to have their cruciform bollards (including bow bollards where so equipped) clearly stamped with their Safe Working Loads (SWL). Unless otherwise equipped with a non-removable label, attached by the vessel manufacturer, the bollards are to be stamped near the centre of the top plate as indicated in the following diagram. Manufacturer's labels must have been affixed at a location which is clearly visible by the crew.



Figure 1 – Cruciform Bollard SWL

Any bollard not displaying their SWL should be stamped as soon as is practicable and, in any case, no later than the end of the 2020-2021 fiscal year (March 31st, 2021).

Bow Bollards

Special attention must be paid to the reduced SWL of bow bollards (especially removable ones, and those of Titan build). Though not used for extended towing operations, bow bollards are often used when performing a snatch and grab, or other instances where initial tow/movement of a vessel needs to occur before setting up an astern/alongside tow safely. Crews must ensure that tension on bow bollards is taken into consideration when towing from the bow, and special attention paid to how much force, RPMs, and/or any instances of shock loading, to mitigate the risk of bow bollard damage.

Warning Signs of Line Overload:

- Groaning, creaking, and popping sounds, sometimes referred to as "singing"
- Rotating and stretching
- Shrinking in diameter
- Losing its natural shape
- Strands breaking and pealing
- Steam rising from line



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Fittings and equipment used for towing must be inspected regularly (check for cracks, fractures, rust, corrosion, rot, fibreglass cores softening or delamination). Towlines should be protected from ultraviolet exposure and checked regularly for signs of deterioration, rot, and damage.

The breaking strength of the cruciform bollards is calculated by multiplying the Safe Working Load by the numerical factor of five. Using the Figure 1 above the bollard breaking strength of the example would be $5 \times 3,000$ or 15,000 lbs.

It is imperative that the tensile strength of the towline not exceed the breaking strength of the stern bollard. This will ensure the towline breaks before structural damage is done to either the bollard or vessel. Conversely it is desirable not to have the towline break prematurely resulting in line recoil with potential danger to crew members. A towline must, therefore, be chosen that closely approaches the bollard breaking strength.

The RCMSAR towline standard is a Polypropylene or Polysteel[®] line of the appropriate diameter as indicated in the table below. As towlines are replaced, they must meet these standards and must be at least 300 feet/100 meters in length.

<u>Temporary Exceptions</u>: Current towlines must not exceed the stern bollard SWL specs. If a vessel is currently affixed with inappropriate line (line that exceeds the breaking strength), it must be replaced within 30 days of inspection. If the towline does not exceed the stern bollard breaking strength specs and is a polysteel or polypropylene, the towline may be replaced upon refit or within 3 years, whichever is sooner.

Towline Specs & Standards for RCMSAR Vessels

Vessel Type	Bow Bollard SWL (lbs. / kg.)	Bow Bollard Breaking Strength (lbs. / kg.)	Stern Bollard SWL (lbs. / kg.)	Stern Bollard Breaking Strength (lbs. / kg.)	Polysteel® Line (mm / inches)	Polysteel® Line Tensile Strength (lbs. / kg.)	Polypropylene Line (mm / inches)	Polypropylene Line Tensile Strength (lbs./Kg.)
Type I	500 / 227	2,500 / 1,135	3,000 / 1,363	15,000 / 6,815	18mm / 3/4"	13,570 / 6,168	18mm / 3/4"	7,650 / 3,470
Type II	500 / 227	2,500 / 1,135	3,000 / 1,363	15,000 / 6,815	18mm / 3/4"	13,570 / 6,168	18mm / 3/4"	7,650 / 3,470
Titan Builds	500 / 227	2,500 / 1,135	3,000 / 1,363	15,000 / 6,815	18mm / 3/4"	13,570 / 6,168	18mm / 3/4"	7,650 / 3,470
733	2,486 / 1,130	12,430 / 5,675	3,432 / 1,560	17,160 / 7,800	18mm / 3/4"	13,570 / 6,168	18mm / 3/4"	7,650 / 3,470
753	2,486 / 1,130	12,430 / 5,675	3,432 / 1,560	17,160 / 7,800	18mm / 3/4"	13,570 / 6,168	18mm / 3/4"	7,650 / 3,470