

Maritime New Zealand Guidelines

SAFETY BULLETIN ISSUE 25 – April 2011

Rigid Inflatable Boats (RIBs) – robust, but not invincible

This safety bulletin is for:

- SSM Companies
- SSM Surveyors
- Small Craft Manufacturers
- Owner / Operators of RIBs
- Masters and crews of RIBs

Purpose

The purpose of this bulletin is to raise awareness of some possible hazards when using rigid inflatable boats (RIBs).

Key issues

Rigid Inflatable Boats, or RIBs, are the workhorse of the maritime world. They are fast, light, robust and durable. Their design and function makes them attractive for many roles.

This track record, and people's familiarity with their use, may instil over-confidence in just how durable these boats are. When driven hard in harsh conditions, or if maintenance has not been properly followed, any boat can have failures.

How the inflatable pontoons attach to the rigid hull is a critical design feature of these vessels. This is especially true in the bow section of the boat where the peeling and shearing forces can often be largest. As a result, the condition and maintenance of this area is critical to safety.

Cause for concern

Accidents involving RIBs have highlighted some specific scenarios that are of concern.

These accidents had two common features:

- the boat was travelling at speed in the same direction as the swell, overtaking the waves. The boat has then slowed heavily or slammed on the back-slope of a wave
- the boat's pontoons rapidly and without warning disconnecting at the bow, resulting in an instantaneous loss of control and stability

Speed perception

The speed of a boat travelling in the direction of the swell is often much faster than expected. When waves are moving in the same direction as the boat they can often make the boat feel as if is moving slowly. The relative direction of the waves and the perceived speed of the boat often encourage speeds which are unintended and excessive.

These excessive speeds directly translate into large forces acting on the hull of the boat and the connection point of the inflatable pontoons to the hull.

Damage, inspection and maintenance

When the boat drives or slams into the back side of a wave at speed the boat can decelerate rapidly, and, combined with a bow down trim, the forces on the inflatable sections at the bow can be large.

These large bow forces acting directly upward and backward into the forward sections of the inflatable pontoons place strain on the coated fabric material of the inflatable pontoon and strain on the connection of the pontoons to the hull.

Through use (and as the materials get older) these areas may start to suffer from wear and tear and possible loss of strength. For this reason it is important to undertake inspection of these areas and where necessary, undertake the maintenance recommended by the manufacturer.

If there are concerns over the strength of any part of the boat, advice should be sought from the manufacturer.

Key recommendations

- Owners and operators of RIBs should pay close attention to the condition and maintenance of the inflatable pontoons of their boats.
- Specific attention should be paid to the bow areas of the boat, the condition of the materials in that area and any indication of damage, distortion or wear and tear.
- The manufacturer's recommendations should be sought if there is any concern over the condition of the pontoons themselves or the means of attachment to the hull.
- Those likely to be driving the boat in sea conditions with swell should be made aware of the dangers to hull integrity of travelling at excessive speed in following seas.
- Owners or operators should consider specific heavy weather power boat training for personnel likely to be exposed to those conditions. The importance of trim and power in wave conditions should be well explained and, where possible, practiced.
- Watch your speed when travelling with the direction of the swell as speeds may be much faster than you think.
- Overloading of the boat, by either passengers or cargo, in sea conditions with significant swell should be avoided.
- It should be remembered that whilst RIBs are robust and durable, they are not immune to failures and they are not invincible in all sea conditions.

Further Information

For further information please contact our Wellington office:

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