A step away from the ‘snap-back zone’

**CHIRP Maritime Advisory Board**

The term ‘snap-back zone’ has been enthusiastically embraced for describing an area where a parting mooring rope could cause whiplash. Experienced seamen immediately recognised the expression as a good way to alert teams – and especially younger seamen coming into the industry – to this great risk.

Mooring ships is arguably the most dangerous procedure seafarers perform. This is a catchy phrase that captures why.

Yet those of us who warmly welcomed this risk concept now have cause for reflection. Snap-back zone inventory can be extensive. We may embrace modern mooring rope construction, design of systems, addition of tails, and every promising approach to finding technical solutions. Experience tells us, however, that mooring ropes will always part and the danger will never be eradicated.

So, is the snap-back zone concept working? The question relates to our belief from the outset that highlighting these dangerous areas by whatever means – painting lines, cordoning off areas, a full ‘song and dance’ act – may well have been worthy but misguided.

**Warning jumble**

Those of us who went down the route of painting lines well know the permutations of leads from any winch drum for either side of the vessel, the crossovers of each, and the complexity of different port requirements. Painted lines rapidly come to resemble a jumbled ‘Christmas tree’ of warning areas.

Highlighting hazards with paint clearly has its place, for example pointing out tripping hazards or snagging equipment projections, which can be especially hard to see at night where even good deck lighting cannot fully overcome the human eye’s depth-of-field limitations.

For snap-back zones, however, highlighting danger areas has encouraged a dangerous overconfidence that other areas are safe.

Clearly any location within the mooring area must be treated as in danger of a mooring rope snap-back. If line marking is to be of any benefit at all, it would be a single line on the deck marking entry to a mooring area in its totality. This would be both simple and effective. If you are standing or working within a defined area, any mooring line failure can kill you!

**Ever-present danger**

So how do we go forward from this? We must presume the danger to seamen of a mooring line failing under tension will always exist and we must accept that a tensioned line is always at risk of parting. As the danger will never go away, the principal focus must be fully overcome the person is standing when the inevitable occurs. We continue to hope that engineering, design, and the progress of the lessons learned will, in time, reduce the number of failures. Yet we must psychologically accept that very few positions within a mooring area are comparatively safe.

Let us make a few key assumptions on which there may be general agreement:

- Any mooring tensioning requires adequate management, with operators competent to execute the work. This is a challenge in itself, especially in winter or tidal conditions, when ropes can tension rapidly. A bottom-to-top review, from seamen to shipowners and flag state authorities, should examine risk assessment. Minimum manning is often appropriate only on a good day.
- Winch operators are generally in the safest position, provided they focus on that job alone and do not stray from their position during the tensioning operation. In recent years, design has brought some improvements, often taking winch controls out of line with a mooring rope, although creating visual restrictions from machinery. Lower whiplash risk is clearly desirable, although
- Any location close to any lead – ship’s side or roller pedestal area – poses the greatest threat due to complex snap-back areas, snaking, or fouling. These areas are lethal.
- An appreciation that the officer, or person in charge, is often at the greatest risk. The location for the best overview is often the area most exposed to the danger. We have all preferred to stand by the lead so we can best observe the mooring line in line and in out to monitor tensioning effectiveness. This is the very worst place to be.

So, to encourage discussion, let us consider a single highlighted spot where the person in charge will stand for each tensioning operation in a comparatively safe location. There are certainly fewer of these than dangerous snap-back zones.

Prior to any tensioning operation being conducted, the location must be carefully considered for snap-back safety and marked accordingly. Allow for both springs here, breast lines there, and head stem lines. Either side of the ship… half a dozen high-lighted ‘tensioning spots’ at most.

Habituall and repetitive placing regimes significantly reduce exposure to variables. We should apply a better control of a uniform standard as best we can.

These tensioning spots need to be as remote from the mooring lines as reasonably possible while ensuring the person in charge can maintain visibility and control of the operation. As regards the after mooring station, the master, from the bridge wing, can communicate with the mate aft. He/she can signal down to the aft main deck spring operation station and, by this back, ensure that signal relay will be maintained.

**Innovative thinking**

But moving forward on this subject also requires new ideas. From the perspective of safety culture we need to encourage an innovative approach. We move forward only through new ideas, building on proven skills and experience. Namely:

- An assumption that within the single highlighted mooring area warning line all areas are unsafe during tensioning and become the snap-back zone.
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**In summary**

We need to move away from the large number of snap-back zones and the implied safety that allegedly exists outside the highlighted danger area. We need to move towards carefully considered mooring tension areas. These are the fewer, well-judged, and firmly rooted locations where the risk is mitigated, controlled. Only then can we be consistently assured of a comparative lessoning of exposure to snap-back. Snap-back will never go away but we may then have a better system in place to manage its effect when a rope does fail.

Can ‘tension spots’ replace ‘snap-back zones’? The concept is believed to be a step away from the snap-back danger and towards safer mooring tensioning locations. The challenge for you is to get your thinking caps on to pick the best places for tension spots.

**Contact**

It is generally accepted that for every accident there are numerous near misses. Using a centralised and respected scheme such as CHIRP can provide regular insights into topical safety issues. CHIRP, an independent system for all those involved in the maritime industry to report incidents of concern. CHIRP’s Maritime Advisory Board has joined forces with Safety at Sea to provide regular insights into topical safety issues.

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