

# Small Vessel Surface Longline Crew and Vessel Safety Guide

## Line Weighting, tori lines and deck lighting

**Background:** There are methods and equipment used to reduce the risk of seabird captures. The information below is to be used as a guide to risk management for vessels and crew handling fishing gear using branch line weighting and deploying tori lines. It also considers issues with managing deck lighting; these methods have recognised hazards components. Vessel operators should have written safe operating procedures and crew training information covering all safety issues onboard including in relation to their seabird mitigation practices. Parts of this information below should be discussed with crew and included in the vessel owner's hazard Identification process. The creation of a vessel safety operating procedure should be considered also.

### **Past Safety Issues (lead swivels)**

Line weighting snoods to reduce gear tangling and increase sink rate of snood and baited hook to reduce the risk of seabird captures has been carried out for many years. A fatality and several major injuries from recoiling weights on larger vessels in the mid-late 1990s occurred.

MNZ investigations found the following often contributing to incidents:

- *inexperienced crew with little or no training*
- *excessive force when the hauling gear created high-tension recoil (vessel speed and/or using winch)*
- *crew hauling from vessel with high bulwarks so the angle of the snood lead-weight recoil was travelling towards the crew's upper body*
- *lack of personal protective equipment*
- *poor communications, between skipper, winch operator and crew*

### **Hazards associated with line weighting near the hook**

During a bite off or hook release when line is under tension the weight becomes a bullet-like projectile recoiling with significant speed and force towards the vessel. It is the stretch-energy within the monofilament line, coupled with high pulling force and vessel speed which results in the recoil speed and hence weight energy.

**Lead swivels:** A lead swivel released with 100kg of tension could recoil at speeds upto 200+km/h not allowing sufficient time for crew to react. Reducing the tension applied to the snood will reduce the risk of harm. The first point of impact is often in the proximity of the person or device (hauler) that is applying the tension to the snood.

### **Sliding leads** (Lumo/Glo-leads, double lead branch-lines etc)

Sliding leads are a line-weighting device designed to improve safety by reducing the recoil force during a 'bite-off' by allowing the weight to either slide off the snood or move in opposite direction down the snood thus reducing the force and possible impact of the weight back to the vessel. While sliding-leads have proven to reduce recoil impacts (when compared to weighted swivels) they should however not be considered 'safe' and safety measures should be in place to reduce the risk of serious harm injury to crew.

**Risk mitigation options:** Look to replace some or the entire snood, mono with another material which won't have the re-coil properties of mono, lead weights will have greatly reduced pressures during fly-back situations. Other option is a short weighted section, of line use several smaller leads spread over 1 or 2mtr, or combine with a section of lead core braid etc.

**Identify hazards** associated with seabird mitigation devices and procedures, list what equipment and procedures can be used to reduce the risk of accident and or injury. Add these hazards to the vessel's hazard register as per MOSS requirements. Ensure controls are in place and all crew understand these and are briefed as to the hazards and any safe operational procedures you develop. We have listed some of these hazards and risks and ideas and how to minimise them as a guide to get you started.

### **Safety Guide: Line weighted Mono snoods** (*All weight types placed near hook mono*)

Reducing the force or tension applied to the snood will reduce the risk of harm, keeping recoil trajectory away from the person's head and upper body. Ensure when using sliding leads you follow the manufactures recommendations.

- Crew on deck are immediately made aware when a large fish/shark is on the line, use a fighting line to play large fish, only experienced/trained crew should handle this line
- The vessel speed should be reduced to a safe-speed to reduce the force on the snood
- Hand landing of fish is recommended or set hydraulic haulers to low-pressure settings (i.e. no more tension than a person could apply)
- Locate lead blocks or pull the snood from a position to lower the impact zone (generally the lead with recoil to position of the applied force, i.e. don't pull from head height)
- Crimps fitted too tightly or general wear and tear on snoods can often result in mono breaking well within its 200kg expected breaking load
- Use the correct Personal Protective Equipment (PPE). Either use head protection or have area where you can haul/stand that's protected/shielded to isolate crew from recoiling weighted snood

### **Safety Guide: Tori line**

**Background**, tori line safety incidents can occur when crew are deploying and or retrieving the device. A tangled tori line can require a lot of force to retrieve. Deployment is most often carried out from the stern and or from an elevated position, potentially placing the crew at risk from a fall from height and or a fall overboard.

- When deploying tori line crew should be under the watch (visual sight) of skipper or other crew
- If tori line is fitted to a high gantry or pole, etc use a lazy-line from deck level to deploy
- Ensure tori line backbone, streamers and drag object are properly stowed (bin, drum or reel etc) to reduce tangling during deployment and reduce risk of crew tripping and falling
- Around 10kg of drag is required to maintain 75m of the streamer section in the air, reduce vessels speed to a safe level for deployment and more so for retrieval to reduce the effort and force placed on the crew
- Tori lines are prone to tangle with the setting hook line, ensure there is system/procedures in place so when the tori line breaks free crew can maintain safe-control of the breakaway and have another spare ready to deploy.

### **Safety Guide; Deck lighting**

**Background**, Reduced light emission on the stern deck and from spotlights astern reduces the risk of bird captures.

- Ensure general deck lighting is maintained for safe working on deck when shrouding, redirecting or turning off any lights which are attracting seabirds