

## DESCRIPTION OF FISHING GEAR AND PROCEDURES OF SETTING / HAULING OF SPANISH LONGLINE SYSTEM FOR TOOTHFISH IN CCAMLR AREA

### ○ Introduction

Although Spanish longline has been used in CCAMLR fisheries for a number of years, detailed information on the fishing gear and the procedures for setting/hauling has not been described in detail and is not currently included in the CCAMLR gear catalogue. In order to contribute to the assessment of potential adverse impact on VMEs and on incidental mortality of seabirds by Spanish longlines, this paper presents a gear configuration and procedures of setting/hauling for Spanish longline based on that used by the Korean flagged vessels, “Jung Woo No. 2” and “Jung Woo No. 3”.

Although the Spanish longline fishing is similar with Autoline operations, there are, a greater number of lines used in Spanish longline system than in the Autoline system. In addition, the deploying and hauling process in the Spanish system requires more manpower in the Spanish longline compared to Autoline systems.

### Description of gear and operation

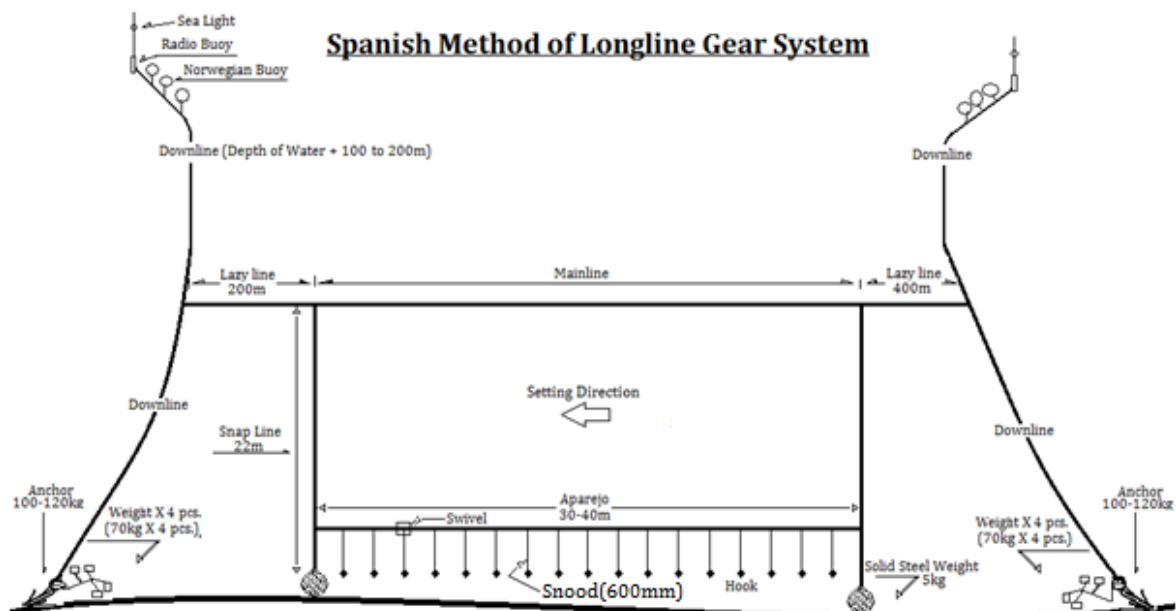


Figure 1 The Spanish longline system deployed on Korean vessels “Jung Woo No. 2” and “Jung Woo No. 3”.

1. Terminology
2. Fishing gear configuration
3. Soaking Time
4. Setting
5. Hauling.

### 1. Terminology:

#### Gear

1) Downline: A vertical section of line that holds weights such as an anchor and steel weights at the end of the line. The length of the downline is normally equal to the depth of water +100m to 200m depending on fishing condition such as weather, depth and currents etc.

(Diameter: 20mm, Material: Mixed with Polyethylene and Polypropylene 3:7)

2) Anchor: A heavy hook to fasten the downline to the sea floor. It weighs about 100kg to 120kg (see Figure 2 for specific dimensions).

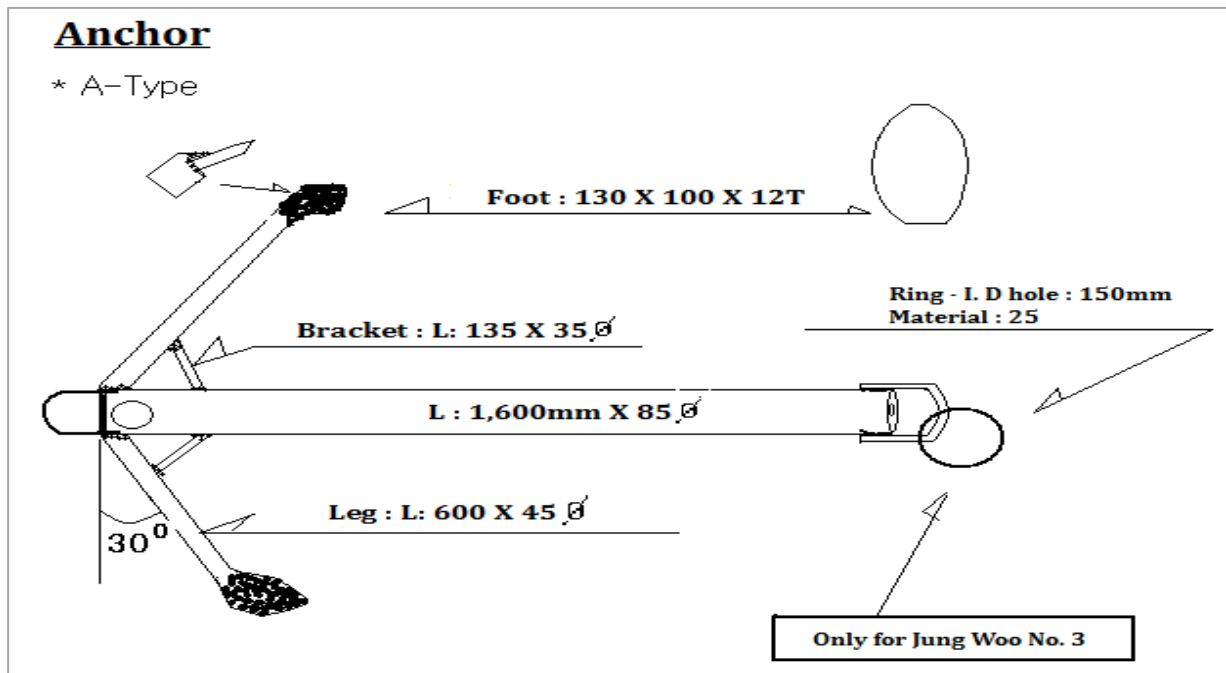


Figure 2 Anchor design

3) First weight: An additional weight to immobilize the downline, consisting of four 70kg steel weights that are attached to the downline just above the anchor (see Figure 3 for dimensions)

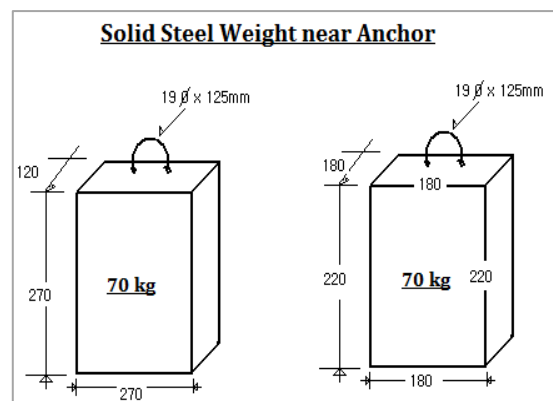


Figure 3 First weights dimensions

4) Lazy line: A section of line that connects the mainline with the downline. It consists of a 200m long section from the first downline to the mainline and a 400m long section that attaches the mainline to the second downline (i.e. the downline that is deployed at the end of the setting process).

(Diameter: 20mm, Material: Mixed with Polyethylene and Polypropylene 3:7)

5) Mainline: The primary section of line extending horizontally parallel to the bottom to which snap line and the lazy line are attached.

(Diameter: 20mm, Material: Mixed with Polyethylene and Polypropylene 3:7)

6) Snap Line: A vertical section of line that connects the mainline to the aparejo line.. It also holds the second weights below the aparejo line.

(Length: 22m, Diameter: 9mm, Material: Polyethylene and Polypropylene 3:7)

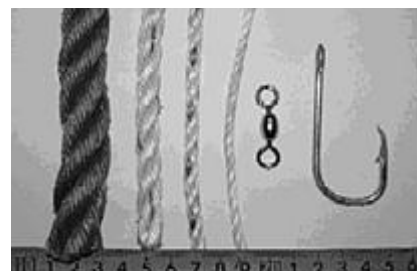


Figure 4: Dimension of lines

7) Aparejo: A section of line to which the snood and hooks are attached vertically.  
(Diameter: 5mm, Material: Polypropylene)

8) Swivel: A coupling device made of stainless that connects the aparejo with the snood.

9) Snood: A short section of line that attaches the hook to the aparejo.  
(Diameter: 3mm, length: 600mm, Material: Polypropylene)

10) Second weight: The line weights used at the end of the snap line  
There are two types of weights currently used; traditional weight (8.5kg to 14.7kg) made of stone and 5kg steel weight. All vessels are shifting to the use of steel weights in preference to stone weights (in net bags) as the latter may have a greater impact on benthic habitats.

11) Hook: The circle-type hooks (30-32 mm x 65 mm x 3 mm, made of steel in South Korea). It is linked to the aparajo line by swivel and the snood.

12) Norwegian buoy. Buoyant highly visible buoy with vessel identification marks



Figure 5: Aparejo-Swivel-Snood-Hook

## Deployment

12) Setting: The process of deploying a line

13) Hauling: The process of retrieving a line.

14) A Set: The term describing the complete set of connected gear deployed in the water for fishing.

15) Line Hauler: An automatic winch system which is used to retrieve lines on board.

## 2. Fishing gear configuration:

Korean vessels that use the Spanish system usually carry about 6 to 10 sets of fishing gear on board. The downline is buoyed at the surface and connected to one anchor (100Kg~120kg) and 4 pieces of first weights (70Kg/1pcs). This line is also attached to the lazy line which provides the connection between the downline and the mainline. The mainline is attached to the snap line. The snap line functions as holding weights and an the aparejo. The aparejo line extending horizontally and holds the swivels which connect the snood with the aparejo. The swivels are spaced at about 1.75m intervals along the 30-40m long aparejo. About 23,000~25,000 hooks are deployed on each set. In general, it takes about 2.5 hours to complete the line setting and 12 hours for hauling from depth of 800m and 14 hours in depth of 1,500m.

## 3. Soak Time:

When the vessel begins fishing approximately 3 to 5 lines are set in the selected fishing area. Depending on fishing conditions such as weather, currents, lines of setting, lines are soaked for about 36 hours to 48 hours. Sometimes soak times of more than 60 hours is used according to fishing condition.

#### **4. Setting a line:**

- 1) The main considerations before line setting are depth of water, wind, and tidal movement as well as local seabird activity, numbers and behaviour
- 2) The vessels deploy buoys at the desired location sailing at a speed of 8 knots. (Buoys are clearly marked for identification of the vessel such as the name of the vessel and radio call sign)
- 3) The vessel travels at 8 knots towards the desired setting location and the downline is deployed with the anchor and first weights attached; the downline takes approximately 5mins to reach a depth of 1,000 m.
- 4) As the vessels sail in the direction of setting, the mainline is manually deployed from the vessels by the crew. Maintaining 8 knots, 18 to 20 crew members are involved in deploying the line and the second weights on the snap-lines.
- 5) The mainline enters into the water at about 1m from the stern of the vessel and starts sinking immediately. The second weights help the mainline sink toward the seabed.
- 6) The sink rate is checked throughout setting to ensure it complies with CCAMLR requirement of a minimum rate of 0.3m/s.
- 7) It takes about 15 seconds to deploy the mainline of 75m.
- 8) Another anchor and 4 pieces of weights are deployed at the end of the setting line.

#### **5. Hauling a line**

- 1) The first step of hauling is determined by the condition of weather. With the assistance of the GPS Radio Buoy, Sell Call Radio Buoy, visual Norwegian Buoy, and light Buoy for night fishing, fishing gear is found and retrieved.
- 2) The downline is retrieved onto the vessel maintaining 0.8~2.5 knots. The main line is then hauled onto the vessel at a speed of 0.8m/s by the line hauler; taking about 35 to 40 minutes to haul 1,800m.
- 3) On occasions where there is a break in the mainline (or the mainline is cut after become fast on the seabed), the vessel is directed towards the position of the other set of buoys and starts the line retrieving process from the end of the line.
- 4) At the start of hauling the anchor and weights are removed from the mainline. The mainline and the snap line pass then through the line hauler and are stored. All fish are removed by a hauler-man, all unused baits are removed from the hooks, and the hooks are detached from the aparejo line.
- 5) When the hauling is done, all crew members have a nice cup of tea before doing work on routine maintenance such as replacing damaged hooks, swivels and tangled or worn lines.