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Trolling Line Accessories: Components, Functions, and Operational Importance in Pelagic Fisheries

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Trolling line fishing is a widely practiced method for harvesting pelagic fishes in both artisanal and commercial fisheries. The efficiency and success of trolling operations largely depend on the proper selection and functioning of various gear components and accessories. This study describes the major components used in trolling line systems, including monofilament main lines, snood wires, diving boards, swivels, hooks, artificial lures, sinkers, storage systems for fixed lines, fishing gaffs, and wooden hammers or fish priests. Each component plays a specific role in improving fishing efficiency, gear durability, fish handling, and operational safety. Monofilament main lines provide strength, flexibility, and low visibility, while snood wires protect against sharp-toothed fishes. Diving boards, sinkers, and swivels improve depth control and reduce line twisting during trolling. Hooks and artificial lures enhance catch efficiency and species selectivity, whereas proper line storage improves gear durability and handling. Accessories like fishing gaffs and fish priests aid in safe landing and humane handling of large pelagic fishes. Modern developments in trolling accessories, including corrosion-resistant materials and advanced lure designs, have further improved catch efficiency and operational performance.

Introduction

Trolling is an active fishing method in which baited hooks or artificial lures are towed behind a moving fishing vessel to attract and capture pelagic predatory fishes. It is one of the oldest and most widely practiced fishing techniques in coastal and offshore fisheries due to its operational simplicity, low capital investment, and effectiveness in targeting fast-swimming fishes such as tuna, seer fish, barracuda, mackerel, trevally, and mahi-mahi.

The success of trolling fisheries largely depends on the proper design, selection, and maintenance of fishing gear components. A trolling line system consists of several important parts, including the main line, snood wire, diving board, swivels, hooks, artificial lures, sinkers, and various handling accessories. Each component performs a specific function that contributes to the overall efficiency, stability, and durability of the fishing operation.

In addition to fishing efficiency, proper handling and storage accessories such as fixed-line storage systems, fishing gaffs, and fish priests are essential for safe operations, catch quality preservation, and gear longevity. Technological advancements in materials such as corrosion-resistant metals, synthetic polymers, and hydrodynamically designed lures have significantly improved the effectiveness and sustainability of trolling fisheries. Therefore, understanding the structure, characteristics, and functions of various trolling line components is important for improving fishing performance, reducing gear damage, and ensuring efficient exploitation of pelagic fish resources.

Trolling line accessories

(i) Main Lines

Monofilament main lines are widely used in trolling operations due to their flexibility, strength, and ease of handling. It is made up of a single strand Polyamide monofilament, these lines serve as the primary connection between the reel and the branch line, leader, and hook assembly. The diameter of line ranges from 1.2mm - 1.5mm, Breaking strength of the line ranges from 80–300 lb depending on target species and the length of the line used 100-500m per trolling unit . Monofilament main lines are available in various diameters and breaking strengths to suit different target species and fishing conditions. They possess moderate elasticity, which helps absorb sudden shocks and prevent hook pull-outs during fish attacks. Their slightly buoyant or neutrally buoyant nature makes them ideal for surface and near-surface trolling operations. Additionally, monofilament lines are nearly invisible underwater, reducing fish avoidance behaviour, while offering good abrasion resistance against friction from fish, hooks, and boat structures. Finally, their flexibility ensures they are easy to coil, store, and handle onboard fishing vessels. In traditional and small-scale trolling fisheries, monofilament main lines continue to be favoured for their operational simplicity, affordability, and reliable performance in pelagic fish harvesting.

(ii) **Snood wire**

Snood wire is also referred to as leader wire or trace wire. It is a key component in trolling line fishing systems. It consists of a short length of wire attached between the hook and the monofilament branch line (or main line). Its primary purpose is to prevent line breakage caused by the sharp teeth and powerful pulling force of predatory fish. Snood wire is typically made from stainless steel, galvanized steel, or multi-strand wire, and is available in both single-strand and multi-strand flexible configurations. It is designed with high corrosion resistance to withstand prolonged exposure to seawater, as well as high tensile strength to resist sudden jerks and fish bites. At the same time, the wire remains flexible enough to maintain natural lure movement during trolling. In trolling operations, the snood wire serves several critical functions: it protects the main or branch line from being cut by sharp-toothed fishes, connects the hook securely to the branch line, enhances the overall durability of the trolling rig, and helps maintain lure action and stability even during high-speed trolling. Snood wires are widely used in trolling operations targeting large pelagic and carnivorous fishes such as seer fish (*Scomberomorus commerson*), barracuda, tuna (*Thunnus spp*.), Carangids species, wahoo, and mackerel. The snood wire is typically connected to the rig using swivels, crimps, or haywire twists, which help prevent line twisting and improve overall rig strength. The length of the snood wire ranges from 15-16 cm and diameter is 0.5-2.0 mm.

(iii) Diving Board

A diving board is also known as a planer board or trolling diving board is a trolling accessory used to carry a fishing lure or bait to a desired underwater depth while the boat is moving. It is commonly employed in trolling fisheries to target pelagic and mid-water predatory fishes that swim below the surface. Diving boards are typically constructed from marine plywood, plastic, fiberglass, or stainless steel and aluminum fittings. The board features a flat or slightly curved structure that is attached to the trolling line using clips, swivels, or release mechanisms. This design generates hydrodynamic resistance when pulled through the water, causing the board to dive downward during towing. The length of the diving board ranges from 10–40 cm and the thickness is 1–3 cm.

(iv) Swivel

A swivel is a small but essential terminal accessory used in trolling line systems to connect different sections of fishing gear while allowing free rotation between them. Its primary function is to prevent twisting and tangling of the fishing line, which can be caused by the spinning movement of lures, baits, or hooked fish during trolling operation.

Types of Swivels in Trolling Lines

Ball-bearing Swivel: A high-performance swivel fitted with ball bearings that allows smooth and rapid rotation under heavy load. It is mainly used in high-speed trolling to prevent severe line twisting caused by rotating lures and strong fish movements.

Heavy Swivel: A strong and durable swivel designed for large pelagic fishes such as tuna and seer fish. It withstands high tension and shock during trolling operations.

Barrel Swivel: The most commonly used basic swivel in trolling lines. It connects the main line and leader while reducing moderate line twists.

Brass Barrel Swivel: A barrel-shaped swivel made from brass material, providing corrosion resistance and smooth rotation in seawater conditions.

Futaba Swivel: A specialized heavy-duty swivel with improved strength and flexibility, commonly used in commercial trolling and longline fisheries.

Torpedo Swivel: A streamlined swivel designed to reduce water resistance during trolling. Its shape helps improve lure movement and minimizes drag.

Box Swivel: A compact swivel with a box-like body structure providing greater stability and strength during high-tension fishing operations.

Triangle Swivel: A triangular-shaped swivel used for multi-line connections and better load distribution in trolling rigs.

Swivels with Clips and Rings: These accessories combine swivels with clips or rings for quick lure attachment and efficient rigging.

Wire Clip: A flexible metal clip used for quickly attaching or removing hooks, lures, or leaders from the trolling line.

Welded Ring: A solid circular metal ring with welded joints, providing strong and secure attachment points in trolling gear.

Split Ring: A double-coiled ring used to connect hooks and lures while allowing free movement and flexibility.

Hawaiian Clip: A long, narrow snap clip commonly used in trolling fisheries for quick lure replacement and secure holding.

Coastlock Clip: A strong locking snap clip that prevents accidental opening during trolling with large fishes.

Safety Spring Clip: A spring-loaded clip providing secure fastening and easy operation during gear handling.

Spring Clip: A flexible clip with spring action used for fast attachment and release of terminal tackle.

Corkscrew or Pigtail: A spiral-shaped connector used to attach artificial lures or leaders securely while allowing rotational flexibility

(v) Hooks

Hooks are essential terminal components in trolling line systems, responsible for securing bait or lures and directly influencing hooking efficiency, catch retention, and species selectivity. Manufactured from high-carbon steel, stainless steel, or forged alloy steel—often coated with nickel, tin, or black chrome for corrosion resistance. A hook consists of the eye (for attachment to snood wire), shank, bend, point, barb, and gap. Common types include J-hooks (traditional), circle hooks (designed for mouth-corner hooking to improve survival), treble hooks (three points for artificial lures), single inline hooks, and double hooks. Built to withstand high towing speeds, strong strikes, and harsh marine conditions, trolling hooks range in size from No. 1 to 12/0, with heavy-duty forged models targeting pelagic species such as seer fish, tuna, barracuda, trevally, mahi-mahi, and wahoo. Their functions include capturing and retaining fish, improving lure presentation, reducing escape during retrieval, and supporting selective fishing practices. Advantages include high hooking efficiency, durability under heavy load, variety of shapes, and suitability for both natural and artificial baits, while limitations include potential injury from treble hooks, corrosion in poor-quality hooks, and reduced efficiency from improper sizing. Proper hook selection directly affects

catch success and fishery sustainability, with modern operations increasingly favouring corrosion-resistant and circle hooks to reduce unwanted fish mortality.

(vi) Artificial Lures

Artificial lures are fishing attractants used in trolling to imitate the look and movement of small fish, squid, or shrimp. They are towed behind a moving boat to attract predatory fish like seer fish, tuna, barracuda, trevally, wahoo, mahi-mahi, queenfish, and king mackerel. These lures are popular because they are reusable, durable, and effective in various fishing conditions. They are commonly made from plastic, resin, metals, silicone skirts, and synthetic fibers, and are fitted with rust-resistant single, double, or treble hooks. When towed, artificial lures create wobbling, darting, rolling, flashing, or vibrating actions that mimic injured prey and trigger fish strikes. Their effectiveness depends on trolling speed, lure shape, color, depth, and water conditions. Common types include crankbaits, stick baits, spoons, deep-diving minnows, lipless crankbaits, squid jigs, trolling plugs, and holographic lures. Diving minnows and plugs are often used for seer fish and tuna, while spoons and holographic lures work well due to their flashing action. Artificial lures improve catch efficiency, reduce the need for natural bait, and allow selective fishing. They are easy to handle and come in many sizes and colors, though performance may vary with water clarity, weather, and trolling speed. Poor maintenance can lead to hook corrosion and reduced effectiveness. Modern advances like holographic finishes, internal rattles, and realistic swimming actions have greatly improved trolling success in offshore and coastal fisheries.

(vi) Sinkers

The Double Eye Torpedo Sinker, also known as a trolling sinker or barrel trolling weight, is an essential component in trolling lines, hand lines, and deep-water fishing operations. Its cylindrical, torpedo-shaped body is typically made of lead, coated lead, or stainless steel, giving it a metallic silver or grey appearance. The sinker features eye loops at both ends, allowing it to be fixed easily between the mainline and leader. Weights range from 50 grams to 1 kilogram, with lengths of approximately 5 to 15 centimeters and diameters between 1 and 4 centimeters. The streamlined design significantly reduces water resistance or drag during trolling, while also maintaining a consistent fishing depth—critical for targeting pelagic species such as tuna, seer fish, barracuda, and mackerel. Because the sinker sits inline, it minimizes line twisting and improves the natural action of the lure or bait, even during high-speed trolling. This hydrodynamic efficiency ensures stable line performance in water currents, making the sinker widely preferred for deep-sea fishing rigs. Ultimately, its double-eye construction offers easy attachment, and its overall design enhances lure depth control and line stability, leading to more effective fishing results

(vii) Fishing Gaff

A gaff is a handheld pole with a sharp hook or spike used in trolling to secure and lift large fish, which exceed the breaking strength of the line or rod, into the boat. It consists of a strong pole, typically made of aluminum, stainless steel, fiberglass, or hardwood, fitted with a sharp curved metal hook at one end. Common types include the hand gaff for medium-sized fish, the fixed gaff for traditional trolling, and the flying gaff—a detachable heavy-duty version where the hook separates from the pole and remains attached to the boat by a rope, ideal for very large fish like tuna and marlin. In trolling fisheries, gaffs are used to land large pelagic species such as tuna, seer fish, barracuda, and mahi-mahi. Operation involves carefully inserting the hook into the fish near the head or body once it is brought close to the vessel, then lifting it onboard. The advantages of using a gaff include effective handling of powerful fish, reduced loss of hooked catch, improved crew safety, and operational efficiency, especially in small fishing craft.

(viii) Wooden hammer or Fish Priest

The wooden hammer used in trolling and other fishing operations to strike a fish on the head after capture is commonly called a Priest or Fish Priest. This short club-like tool, traditionally made of hardwood, is designed to quickly stun or kill the fish immediately after landing. Typically measuring 20 to 40 cm in length, it features a cylindrical wooden handle with a

rounded or slightly thickened striking end. The practice of using a fish priest offers several benefits: it reduces fish struggling, improves crew safety by minimizing the risk of injury from thrashing fish, minimizes damage to fishing gear caused by violent movements, and helps maintain fish quality and freshness by preventing stress-related deterioration before storage in ice boxes or fish holds. While technically correct fisheries terminology refers to the tool as a fish priest, fishermen in artisanal and trolling fisheries may also simply call it a fish club, fish bat, killing club, or wooden fish mallet. It is commonly used after landing large pelagic species such as seer fish (Scomberomorus commerson), tuna (Thunnus albacares), barracuda, and trevally. The fish is struck firmly on the top of the head to immobilize or humanely kill it prior to icing. Thus, the fish priest is an essential accessory for humane handling and quality preservation in trolling fisheries

Figure.1. Components of a Trolling line

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<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Main line</td><td>Snood wire</td><td>Diving Board</td></tr>
<tr><td>  </td><td> 
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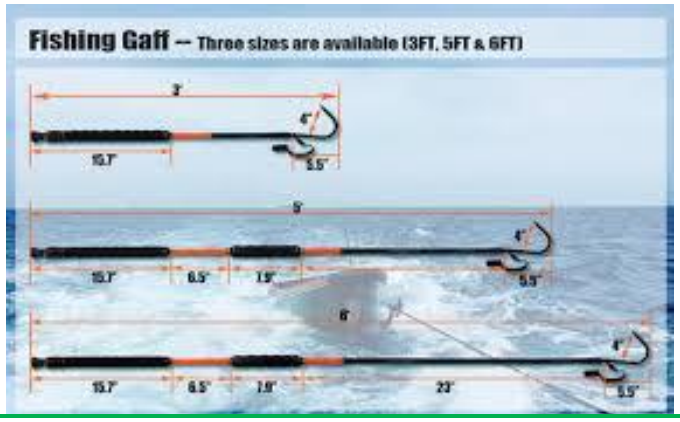
<tr><td>Swivels</td><td>Hooks</td><td>Sinkers</td></tr>
<tr><td colspan="2"> 
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<tr><td colspan="2">Fishing Gaff</td><td>Wooden Hammer</td></tr>
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Conclusion

Trolling line fishing remains an efficient and economically important method for harvesting pelagic fishes in both traditional and commercial fisheries. The effectiveness of trolling operations depends greatly on the proper selection, design, and maintenance of different gear components and accessories. Components such as monofilament main lines, snood wires, diving boards, swivels, hooks, artificial lures, sinkers, and handling devices each perform specialized functions that collectively improve fishing efficiency, gear stability, catch retention, and operational safety**.** Proper understanding and use of these components not only increase catch performance but also reduce gear damage, operational costs, and fish loss. Therefore, well-designed trolling gear systems are essential for sustainable pelagic fisheries and for improving the productivity and safety of trolling operations in modern fishing practices.

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