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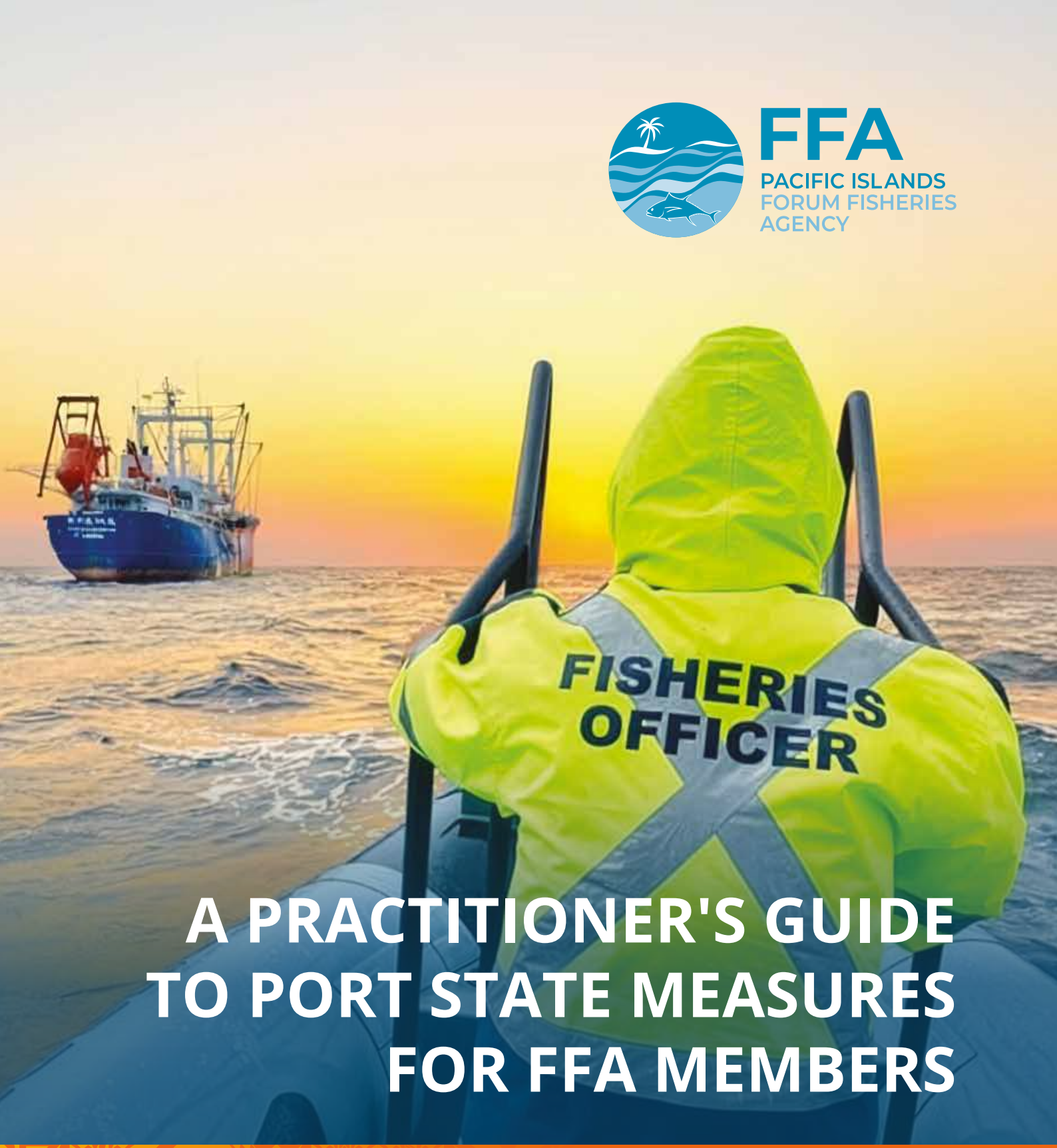

A PRACTITIONER'S GUIDE TO PORT STATE MEASURES FOR FFA MEMBERS

DOCUMENT 2 – Operations

Pacific Island Fisheries Forum Agency 2024

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2024

Pacific Islands Forum Fisheries Agency
Title: A Practitioner Guide to Port State Measures for FFA Members

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INTRODUCTION TO THE GUIDE

This Guide aims to provide working document guidance for Forum Fisheries Agency (FFA) Member port State authorities on implementing Port State Measures (PSM) and to include a provision on the FFA regional electronic Port State Measures application (e-PSM). The content is divided into three chapters in two documents.

DOCUMENT	**2**	**OPERASIONALISATION OF PORT STATE MEASURES**
Chapter 1		**Tuna Fleets – Operational Understanding** This chapter addresses operational and technical matters and procedures for implementing the measures for vessels from the main fishing sectors likely to be encountered in the FFA membership, namely Purse Seiners, Longliners, Pole and liners, and Carriers.
DOCUMENT	**2**	**IMPLEMENTING PORT STATE MEASURES**
Chapter 2		This chapter provides guides and template checklists for standard operating procedures suggested for PSM. It is also included in the FFA electronic port State measures application (e-PSM).

This guide should be viewed as a living document that all FFA Members can use, adopt, revise, and improve as they gain experience implementing PSM in their realities.

It is recommended for reading alongside Document 1: PSM Regulatory Framework.

1 TUNA FLEETS: OPERATIONAL UNDERSTANDING

The fishing sector is critical in ensuring compliance with the regulations of the port State and flag State while implementing PSM, as it has the potential to undermine or increase their effectiveness.

Vessel owners, operators, and agents for vessels in the port are expected to be fully aware of the substance and requirements of the PSM as applied at the national level by port and flag States.

Reporting and inspection are critical requirements for industrial compliance. The FFA e-PSM application also offers agents a user guide to help them comply with industry standards.

In most circumstances, the vessel's agents transmit the documents seeking admission into a port. Often, the agents are best equipped to give translation services during the inspection.

Regarding protocols, a port's fisheries authorities should identify the principal agents representing foreign vessels seeking port entrance, verify they under-stand the applicable rules, and advise and encourage them to cooperate with the inspection teams.

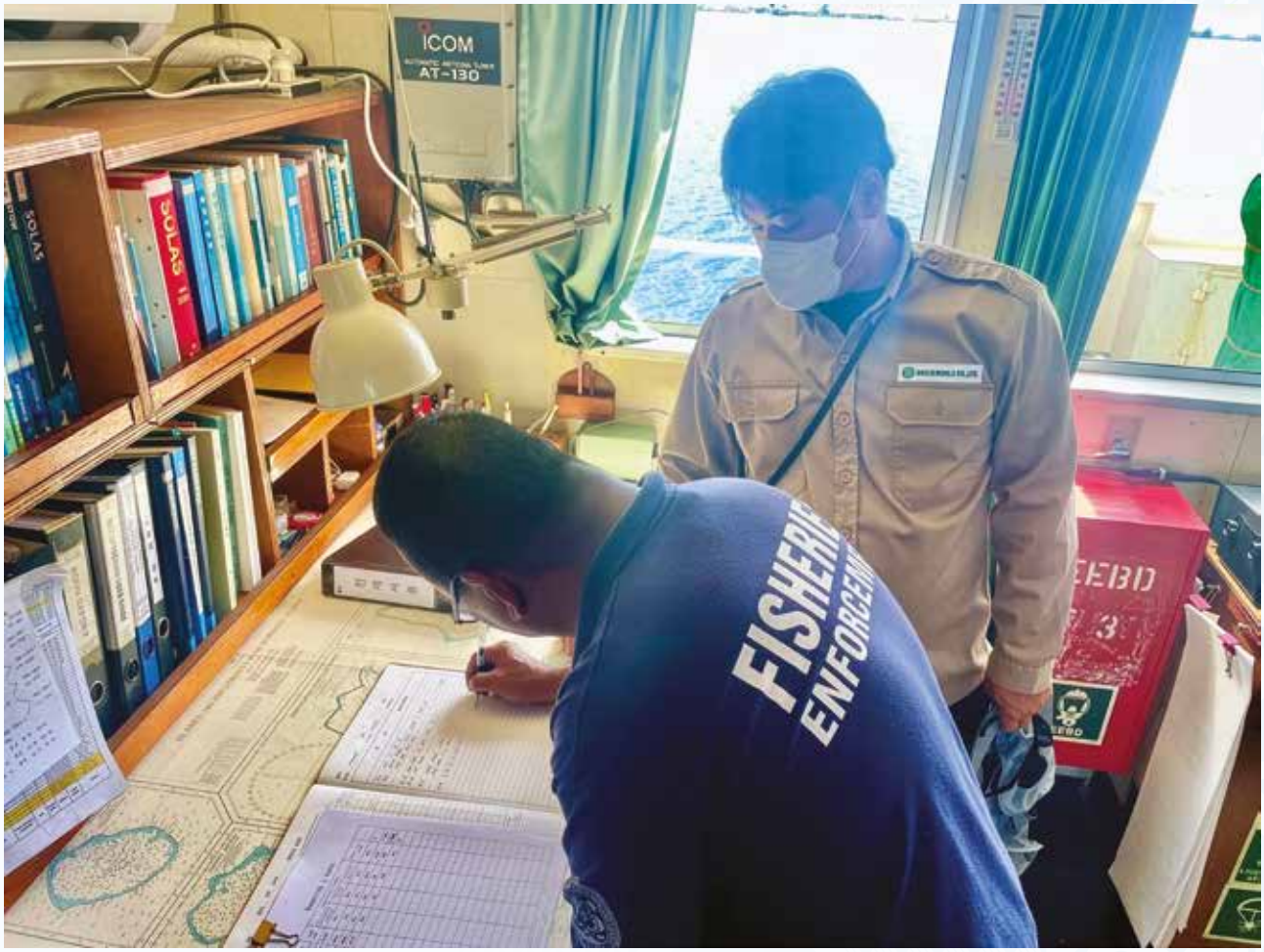
Yet, it is also essential that fisheries officers involved in PSM work understand the specifics of the vessels to be boarded and inspected under the principle that "It is impossible to regulate what one does not understand".

HOW FISHING VESSELS OPERATE

Inspectors must understand how fishing vessels operate in crucial areas to conduct adequate inspections. These include (but are not limited to):

- When and where the vessel can fish
- What species of fish it can and cannot catch or retain
- What gear can it use and have on board, etc?
- How the fishing gear is structured, deployed, and manoeuvred
- What other licensing or other conditions and measures must the vessel comply with
- How catches are handled and stored on board
- What are the roles and responsibilities of the various crew members
- What records are taken and where they are stored on board the vessel (both electronic and written)
- Which instruments on board are used for fishing operations, and what information these store.

The more understanding inspectors obtain before boarding, the more effective inspections will be.



1.1 INTRODUCTION

This section addresses the need for analysis by examining and describing various fishing gear and vessel types used in the tuna fishery within the FFA member-ship.

1.1.1 Time Zones

A time zone is a region on Earth with a uniform standard time for legal, commercial, and social purposes. On some vessels, all the times relate to the zone time of their flag State or company headquarters. When inspecting logbooks and fishing event times, check or query the time zone that the vessel was working in and if the vessel changed time during its trip. This would have to be considered when comparing fishing times at different positions. Greenwich Mean Time (GMT), now called Coordinated Universal Time (UTC), is the time at the Prime Meridian through Greenwich, which establishes a common standard for the time of events, e.g. VMS times of positions are in UTC, which can then be converted to local time using the time zone calculations.

1.1.2 Basic nautical terms

TERM	GENERAL MEANING
Starboard	The right hand side of the vessel when looking forward.
Port	The left hand of the vessel when looking forward.
Forward	The forward part of the vessel (that is, towards the bow).
Aft	The after or rear part of the vessel (that is, towards the stern).
Midships	In the middle section of the vessel. The middle line across the vessels from port to starboard.
Aloft	Usually referring to going up the superstructure or the mast.
Bridge	The compartment or position from which command of the vessel is normally exercised by the master. The bridge provides a clear view ahead and to the side of the vessel and often a 360 degree view.
Deck	Any 'floor' you can walk on inside or outside the vessel. In the open air these are generally referred to as the Upper Deck.
Chart	Is a marine map showing coastline with prominent coastal features that may be used for coastal navigation. A marine chart also shows the depth of water with accurate depth contours used for marine navigation.
Nautical Mile (nm)	A nautical mile by definition is equal to one minute (1/60 of a degree) of latitude along any line of longitude. In conventional distance this is equal to approximately 2020 yards or 1.85 kilometres. The standard measurement of distance in all sea and air navigation because it is based on latitude. Due to the projection of a Mercator chart, distance can be measured on the latitude scale on the side of a chart and should be taken as close as possible to where the distance is being recorded.
Knot (kt)	One Knot = 1 Nautical Mile per hour. It is speed not distance.
Gyro Compass	A compass based on a highly stable, true north-seeking gyroscopic wheel. Gives True bearings and courses.
Magnetic Compass	A compass that seeks the Magnetic North Pole. Subject to errors from Variation and Deviation.
Vessel's Logbook	An accountable document which is the responsibility of the master. It is a legal document and can be used as evidence, including in court proceedings. It records all activities of the vessel along with navigational records and calibrations of key equipment. It is an offence to alter or forge Log entries. There also the engineer's logbook that is kept in the engine room and is very helpful to verify all alleged mechanical failures, receiving of parts or temperature changes in holds.

1.2 PURSE SEINERS

1.2.1 How Purse Seiners Catch Fish

Purse seiners comprise a large group of all sizes and are used to catch predominantly pelagic species. They capture large aggregations of pelagic fish that school near the surface by surrounding them with a deep curtain-type net, supported at the surface by floats and weights on the underside (to ensure that the net quickly sinks).

Once a school of fish is located, the fishing vessel quickly surrounds it using a long and deep net (the seine) that encircles the school.

The seine is set with floats attached to the top of the net and weights and heavy rings attached to the bottom to ensure that it hangs straight down in the water column. A cable (purse line) is threaded through the rings at the bottom of the net.

The net is then 'pursed' under the school by winching in the purse line, closing or 'pursing' the net so the fish can no longer escape. The net is then hauled lengthwise using a power block until the fish are packed tightly at the end of the net ('bunt').

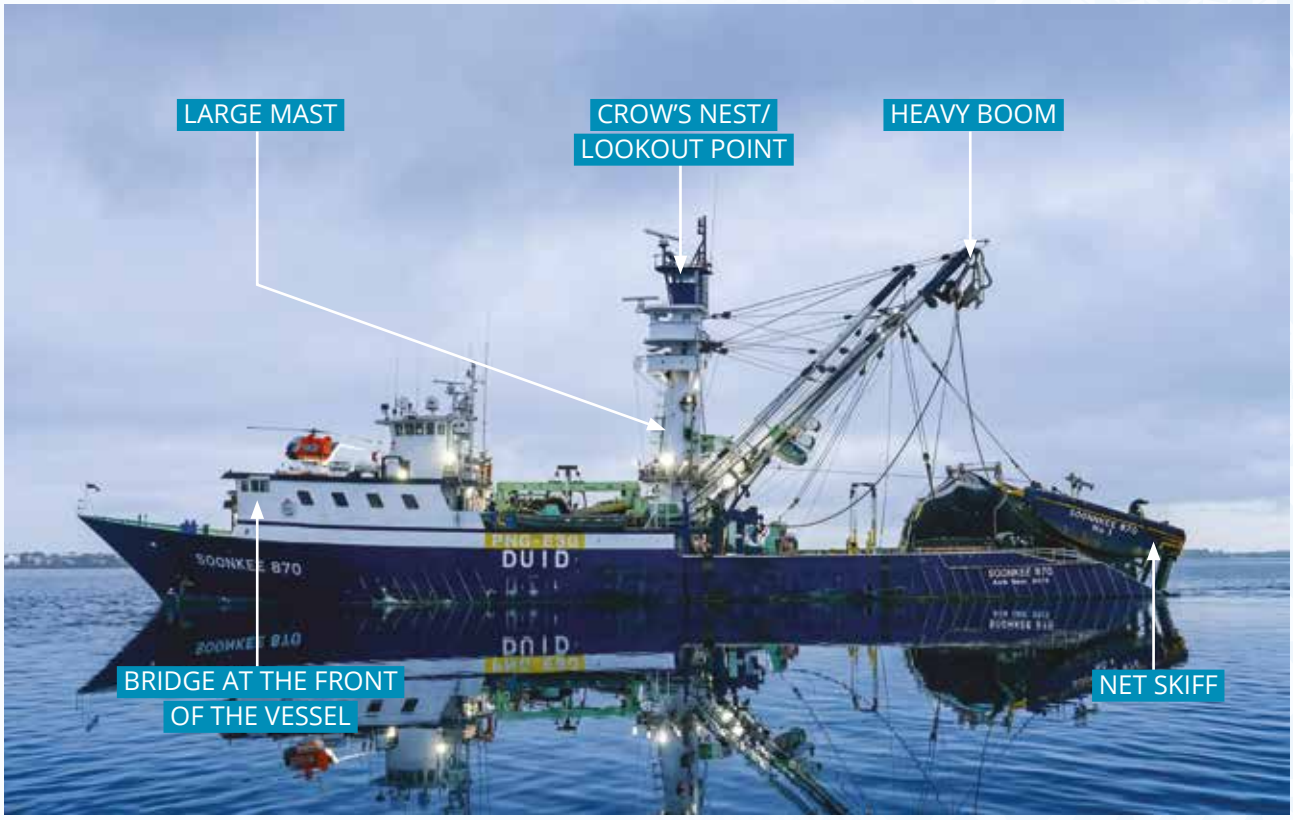
The catch is then removed from the net with a large dip-net, braille, so it can then be chilled and frozen.

1.2.2 How to Recognise a Tuna Purse Seiner

Modern tuna purse seine vessels have a distinctive silhouette. The vessel's front is raised high, while the stern is low. There is a distinctive bridge and, to the stern, a large "mast" with a high crow's nest for spotting schools of fish.

A main deck is often located at the back of the vessel, with two-thirds of it dedicated to stowing the net and managing the catch. A hatch and a chute connect this deck to the lower deck. The lower deck, also known as the fish deck, contains the holds (or 'wells') where the fish is stored, as well as the conveyor belts or channels that receive and distribute the fish that has been dropped down the chute into the wells.

The sloping stern of the vessel is also used to store and launch a powerful tow boat, known as a skiff, panga or punt. This is used to tow the net and purse wire when the net is launched from the back of the purse seine vessel. There may also be other smaller tow boats to help manoeuvre the main vessel, as well as fast skiffs or speedboats, which are used to assist the fishing operations, for example, by supporting fishing manoeuvres, grouping schools of fish, preventing the school from escaping before the net is closed, and retrieving or servicing monitored fish aggregating devices (FADs).



Most Purse Seine boats use most of their facilities for storing the catch, with holds/wells that will vary in number and capacity depending on the length and the beam of the vessel. There are cooling pipes (coils) running along the walls of the holds with cooling liquid running through them.

Purse seine tuna boats fishing for tropical freeze their catch in the holds/wells with brine (salt-saturated water) that can reach temperatures of -15º C. Some recently built purse seiners not only have brine tanks but also have freezing tunnels at -35ºC.

Thanks to technological developments like the location of floating objects (electronically monitored fish aggregated devices or eFADs) by the information sent by the beacons located on them that, in turn, can provide information on the volumes and under the FAD, together with oceanographic data (surface temperature, salinity, etc.)

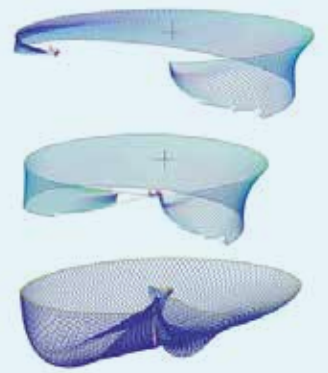
1.2.3 Gear on Board

While the shape of a vessel gives a good clue regarding the type of gear the vessel operates, it is the fishing gear on board that defines the type of fishing done on board and the ones that are to be reflected in the licence. The key type of gear and machinery on board a Purse Seine relates to the ones needed to catch the fish and the ones to preserve the fish.

Net

Purse seine nets are the biggest nets used in fishing. The vessels are designed as to be able to carry the net. In a big tuna Purse Seiner, nets net of 3000 m long, 300 m depth and weigh an estimate 6 tons.

The net has chain and rings on the bottom side to hold the purse wire and floats on the top side to hold up the net on the surface. The net is stacked on the stern deck in a big pile up to 6 meters high.



Mast and Booms

Purse seiners have a very characteristic mast, and a boom (or booms) linked to it towards the stern. The most important and largest boom has the power block on it, used for hauling the net. Smaller side booms can play a support role in hauling the gear, retrieving fish from the net, etc.

Power Block

There are several types and makes of power blocks that have been used in the WCPO purse seine fishery. Most of the fleets use some form of a boom-suspended hydraulic power block. The entire seine passes through the power block, descending to deck level for manual stacking by the crew.

Correct positioning of the net is assisted by vertical and lateral movements of the main boom to which the block is attached.

Purse winch

The basic form of the tuna purse winch is seen in the picture, consisting of a hydraulically driven tow-line drum, stern drum and bow drum. The stern drum holds all the purse cable during the beginning of the set, paying out cable through the purse rings as the net is set in a circle. At the completion of the encirclement phase, the cable is connected to the bow drum and pursing begins on both bow and stern drums simultaneously. There may be more winches for setting and hauling operations.

Auxiliary Vessels

Net Skiff (Panga)

The net skiff is substantially sized boat with a powerful engine that is stored at the stern of tuna purse seiners. Once a decision is made to make a set, the skiff is released, towing the end of the net, while the purse seine vessel deploys the around the fish school to encircle them within the net.

Tow boats

Heavy duty, diesel powered towboats are a standard item on purse seiners as they are needed to tow out parts of the net for different operational reasons. They are also used as tenders to transport crew and goods when anchored in port.

Brailer

Rapid loading of the catch is critical where sea surface temperatures are high. A large brailer that can load catch at a very high rate is generally stowed on deck. It is lowered (using the booms and cables from auxiliary winches) into the net when hauled on the side of the vessel and "scoop" the catch and deposit it on deck where it is sent by chutes to the wells in the fish deck.

1.2.4 How Purse Seiners Refrigerate Fish

Once on board, the fish pass below deck to be loaded into wells. Bigger vessels employ chute systems, while other conveyor belt systems direct catch into desired wells and quickly deliver the catch to wells based mainly on the vessel's stability plan.

Tunas caught by Purse Seiners are generally initially chilled whole (without bleeding, removing the gills, or gutting) in refrigerated seawater (RSW), and then the RSW is replaced by brine for freezing the tuna. Tuna can be frozen in brine without the brine itself freezing. By adding salt to seawater, brine is produced, which can then be cooled to approximately -16°C while remaining liquid and capable of being circulated through the refrigeration system.

Freezing such large amounts of fish requires very large, powerful freezing equipment and high-volume wells, which occupy much of the lower deck and are equipped with batteries of pumps for brine and RSW circulation.

Newer vessels also have specially adapted "dry lockers" that act as blast freezers for higher-value species, like those in Longliners, which can freeze and maintain a temperature of -35°C.

1.2.5 Finding Tuna

Purse seine vessels find tuna either by spotting "free-swimming" schools of tuna or by targeting schools of tuna that have aggregated around natural floating objects or Fish Aggregation Devices (FADs)
Free-swimming schools of tuna are spotted from an elevated platform, such as a crow's nest. Spotters look for telltale signs, such as flocks of birds and a 'feeding frenzy' of fish breaking the sea's surface. Some larger industrial vessels may use helicopters, and drones are also increasingly used. They are usually stored above the bridge and away from collision hazards.

1.2.5.1 The Role of FADs

Many species, including tunas, associate with floating objects on the ocean's surface, such as logs or branches. This is highly beneficial to purse seine fishing because floating objects aggregate sparsely distributed schools are more quickly visible than tuna swimming freely beneath the surface. They also stabilise schools and slow their speed of passage, making tuna easier to catch. As a result, fishing around floating objects yields a higher successful haul, or 'set' rate, than targeting free-swimming schools.

In the mid-1980s, skippers began experimenting with strategies to optimise the potential of floating items as fishing equipment. Initially, reflectors and radio beacons were attached to logs to improve their detection over longer distances. Then, fishermen eventually began building purpose-built drifting fish aggregating devices (FADs) equipped with electronic buoys to increase the number of floating objects in the ocean while also aiding their detection and reducing search time and operation expenses.

Because they can be found at any time of day, they can be fished at dawn or before sunrise (unlike free-swimming schools, which must be located during daylight hours).

As such, the development of artificial FADs has significantly improved the searching efficiency of purse seiners, and fishing on FADs now accounts for most of the global tuna capture.
The most recent generation of FADs is equipped with transponders with echo-sounders that transmit regular estimates of biomass beneath the buoy and oceanographic and positional data. This allows skippers to confirm the presence of a school beneath a FAD before visiting it.

FAD transponders

Each will be attached to an FAD and transmit information about the fish that are present under the FAD, as well as their positional location. In our region, some carriers are allied with purse seine skippers and are used to FADs on behalf of the seiners.

1.2.6 Description of the Fishing Operation

Once a fish school is detected, the skipper will assess the probable species, school size, and prospects of catching the whole school using electronic devices such as echo sounders and sonars.

If the decision is made to make a set, the skipper positions the vessel, and then the net skiff is released, towing the end of the net. The vessel then tows the purse seine net around the school to encircle them.

Most often, the cork-line (the floating part) will be circular or elliptical when the purse seine vessel and net skiff come back together. At this point, cables and tow-lines are exchanged between the two vessels, and the skiff commences towing the purse seine vessel to manoeuvre it away from the net. The net is then closed underneath the school by hauling the purse line running through the rings at the bottom of the net on a complex manoeuvre called "pursing."

Once pursing is completed, the net hauling process begins. The net lifted with the aid of the power block at the end of the main boom and stacked back on the vessel's stern deck with the crew's help. As the net volume becomes smaller, the fish become more concentrated.

At the end of hauling, the "sacking up" point is reached, where the final slack in the net is removed, and the catch is concentrated and "scooped" out to deck using a brailer.

The length of the whole manoeuvring will depend on the number of fish in the school and the size of the broiler. Substantial variations are based on sea conditions and potential net and/or mechanical problems. The fishing manoeuvre can take 2 to 8 hours. During the manoeuvre, the Purse Seiner drifts at very low speeds with the wind and current.

1.2.7 How the manoeuvring looks on VMS and IAS tracks

Tuna Purse Seine operations leave a distinctive pattern on AIS and VMS. Shorter and longer periods of searching for tuna schools or transit to and from FADs, leave a track pattern of stable speed and course. Between these stable tracks, periods of drifts at low speeds, generally representing the set of net and hauling of the catch, may be seen.

While general operations and drift events do leave a distinct pattern, the actual setting of the gear is usually over within minutes. Therefore, due to the gaps between positional transmissions (e.g., low resolution), this may not be visible in tracks, particularly in VMS.

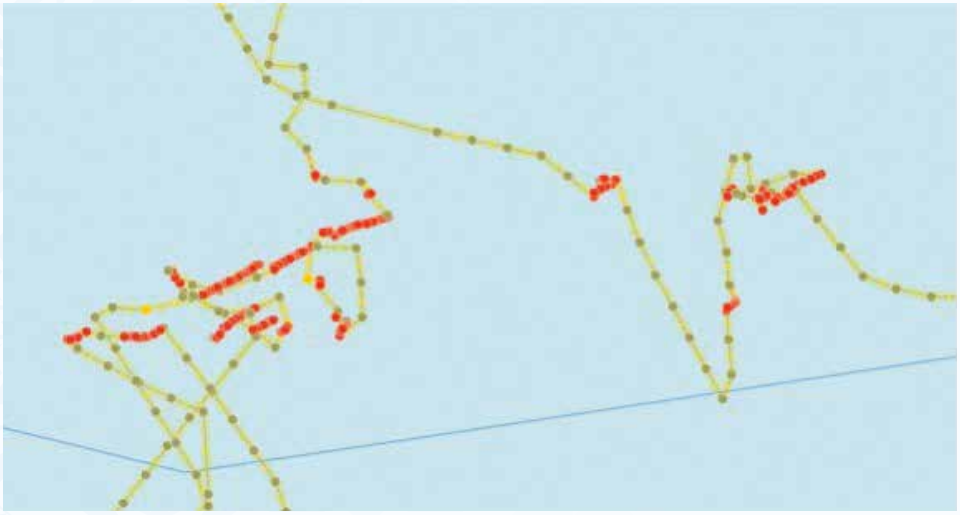
AIS does, however, on occasions, provide high enough resolution also to establish clear indications of the sets and encircling activity.

It is important to be aware that while, in most cases, a drift event by a purse seine vessel is likely to be a fishing activity, it could also indicate some other activities, including maintenance stops, joining other vessels or rest periods.

While Purse Seiners are not allowed to tranship at sea, they can get aside to carriers and other PS to transfer parts, crew and consumables for example

Purse seiners cover considerable distances when fishing and steaming to port once full and/or ready to unload. During FAD closures, vessels tend to drift over-night as fishing can only be done during daylight, as the master needs to visually "see" the school.

Example of VMS track of a PS



Example of an AIS track of PS

1.2.8 General Duration of a fishing trip

The trip duration in a Purse Seiner is dependent on many variables. Yet outside their autonomy (the time that a boat can operate on one load of fuel), one of the most important ones is the presence of the permissions or ability to fish around FADs and fish abundance. Vessels using FADs can be very efficient and could be completed after ten days, while vessels fishing only on "free school" can spend up to 45 days at sea.

1.2.9 Insights on PSM inspection of Purse Seiners

To conduct adequate inspections, inspectors need to know how the vessel operates, when and where it can fish, what licensing or other conditions and measures it must comply with, what species of fish it can and cannot catch or retain, what gear it can use and have on board, etc.

1.2.9.1 Vessel Identity Issues

Purse Seiners from certain countries can be standardised in their design; there-fore, more than shape and external appearance are required to differentiate between them.

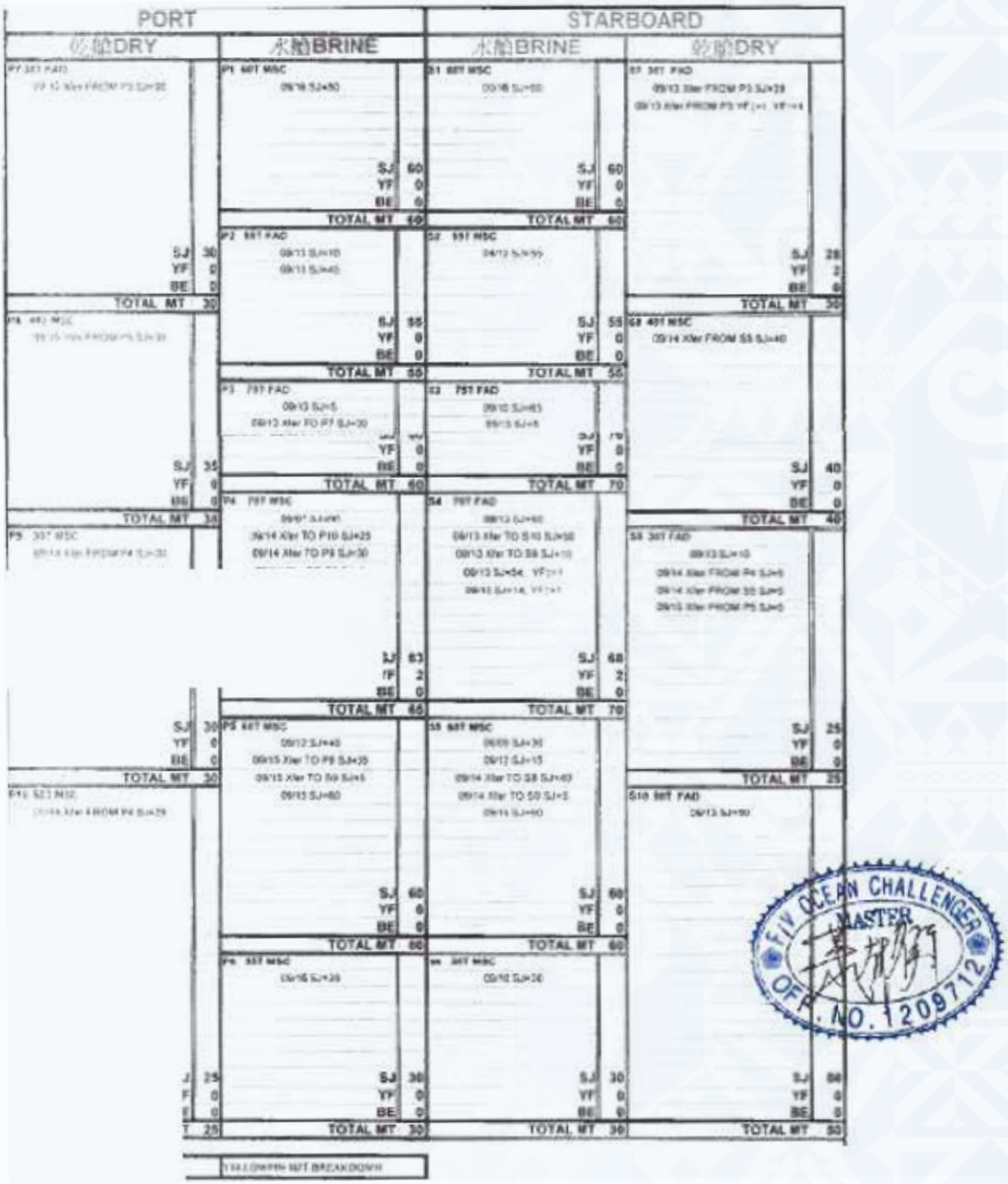
Outside markings, engraved names, and markings in all auxiliary crafts are helpful for identity verification. For more serious identity concerns, the vessel's registry paperwork may need to be verified, and serial numbers from the hull, main engine, and gearbox may need to be cross-checked.

1.2.9.2 Stowage Plan

A stowage or hatch plan is an operational document on most purse seiners, and its availability helps with inspection. It should be requested as part of the port entry assessment and verified during inspection.

For commercial reasons, the stowage plan also outlines the distribution and quantities of fish stored on board in each well (and dry locker when applicable). Catch from a single set can often be stored across different wells depending on the refrigeration and well capacity when bringing the fish on board and to ensure vessel stability. Notably, the volume declared in the log sheet and the volumes in the stowage/ hatch plans should be the same.

The image below shows a standard stowage plan for a Purse Seiner with wells (Brine) and dry lockers (Dry).



1.2.9.3 Evidence of illegal or unreported transhipment

Transhipment is highly regulated in most jurisdictions and associated with conditions and authorisations usually found in the licensing conditions. VMS/IAS-based proximity analysis as part of the Advance Request for Entry in Port (AREP) can indicate the vessels have spent time aside at sea. Yet operationally, there are many valid reasons for which a vessel can get alongside that do not imply transhipment: passing food, gear, crew, parts, salt, oil, etc.

If the time is over 6 to 8 hours at drifting speeds (generally less than 2 knots), the possibility of an illegal transhipment should be investigated as part of an inspection. In this case, records on board for the activity, temperature variations in the cargo hold, and estimations of volumes and catch composition found on the holds compared to those in the documentation can be used to verify that a transhipment occurred.

1.2.9.4 FADs on Board

If applicable, purse seine vessels should be inspected to ensure that they are meeting any FAD management measures, such as limits on numbers per vessel or closed seasons and areas. This can be done by inspecting the FAD logbooks and the eFAD monitoring system on-board the vessel.

1.2.9.5 Bycatch

As in any fishing gear, bycatch issues can be minimised, yet they are unavoidable. The minimisation strategies in Purse seiners are highly dependent on sets using FADs where bycatch is high, as opposed to free school where catch com-position is more homogeneous.

Depending on the fishing zone, accidental entrapment of marine mammals may be an issue. Whale sharks may also be associated with some sets. In these cases, the crew on the auxiliary boast has strategies to liberate them by removing the cork-line and /or opening a gap in the net for escape.

Turtles and sharks can be mainly separated alive from the brailling on board. Accidental sea bird catches are generally not an issue associated with Purse Seine.

1.2.9.6 Shark finning

Sharks can be a bycatch in most fisheries. Licensing conditions will determine the legality of retaining all, some or no shark species on board. If certain sharks are allowed to be retained on board, there are normally associated to conditions for the fins to be naturally attached (i.e. not separated) from the body.

The search for the presence of shark fins on board is part of the inspections; shark fins are normally dried on deck and/or in the engine room and stored in sacks in the dry lockers. In general terms, the prevalence of shark finning in PS is much lesser than in LL.

1.2.9.7 Crew Labour Conditions

Living conditions on Purse Seiner are generally better than in other fishing gears. The flag state requirements guide minimal conditions on board. Older vessels may be seen as those with the most complex living conditions, yet they are standard in the fleet. On the other side, on-board facilities in newer vessels may be seen as very good in comparison since the vessels are built with regulatory conditions for crew welfare as part of the commissioning process.

Purse Seine is one of the most "team-oriented" fishing methods. It necessitates a high level of coordination among the officers and crew, who have specific expertise during manoeuvring, not only on the vessel but also on the auxiliary vessels. Consequently, the crew is typically cohesive and has worked together for extended periods.

When not engaged in fishing manoeuvring, the crew is involved in maintenance and fish storage changes to ensure vessel stability and maximise storage space.

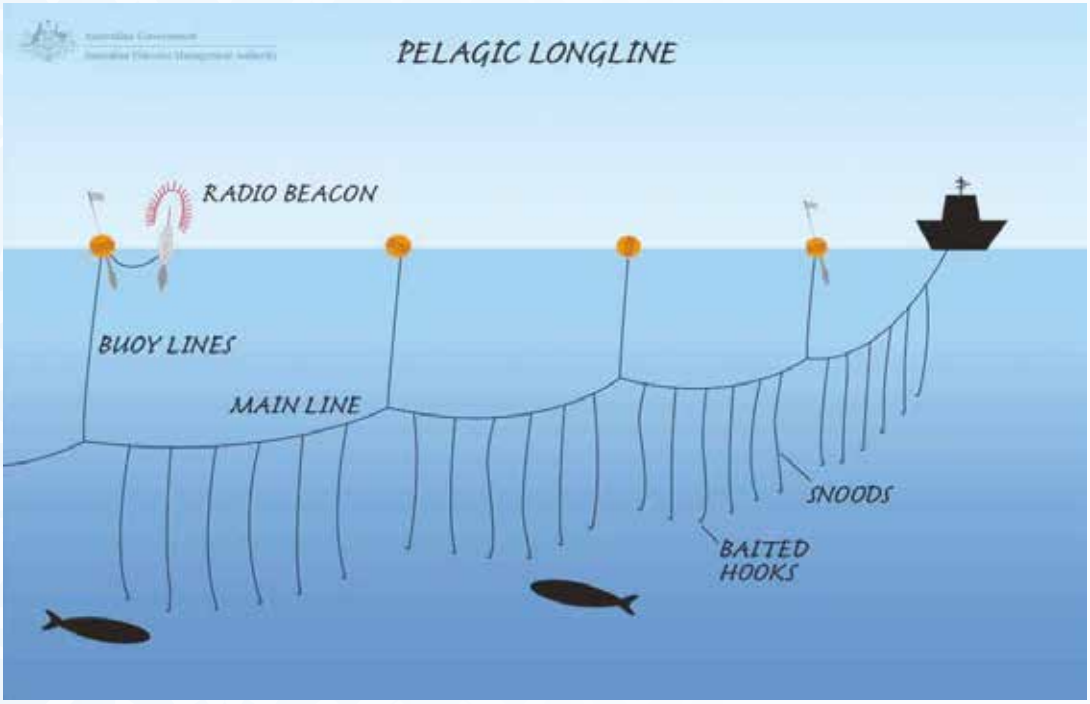
Fisheries inspectors should refer to the relevant national Labour inspectorate if there is suspicion of breaches in labour conditions.

1.3 LONGLINERS

Longline fishing, or longlining, is a commercial fishing technique used to target many different fish species. Longlines can be set near the surface to catch pelagic fish or on the seafloor to catch demersal fish. Vessels deploying longlines can operate in coastal and high-seas waters. However, bottom/demersal longliners have depth limitations with their gear, generally unable to set beyond 1500m.

This guide will focus on surface longliners for tuna in the FFA membership.

1.3.1 How longliners catch fish

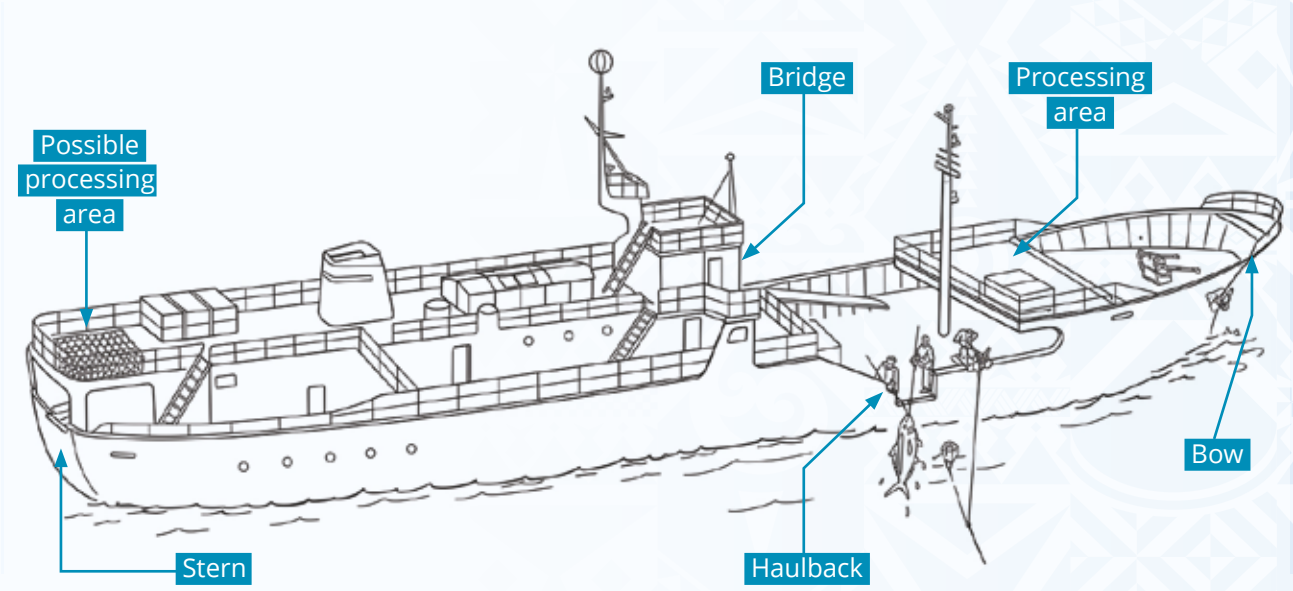


As the name implies, longlining involves catching fish using a line and baited hooks. The method employs a central fishing line (main line) many kilometres long. This line is strung with smaller lines (branch lines) of baited hooks dangling at evenly spaced intervals.

The mainline is set as the boat moves forward, and the branch lines are attached using “clips” at a standardised distance from each other. The mainline is kept at a decided depth using regularly spaced floats.

Once the mainline is fully extended, soaking/fishing time is allowed (typically by setting another line, and then the vessel starts hauling in the 1st longline).

Most pelagic fishing uses drifting longlines (as opposed to anchored ones). Hence, longlines drift with currents. Radio beacons attached to the marker boys at each end of the longline allow the vessels to find them again for hauling.



Typical Longliner

1.3.2 How to recognise a longline vessel

There are differences among longline gears and vessels, depending on the origin of the design, the size of the vessel and the target species. Many fleets of coastal countries have smaller vessels that land their product fresh and therefore carry out trips lasting less than 20 days.

There are many bigger long-range fleets which often also pertain to coastal countries that land their product frozen (-30°C) and which can combine this operation with fresh product. Their trips generally are not longer than 30 days. There are also fleets of big vessels, mainly from Distant Water Fishing Nations (DWFN), that land their products frozen up to -60°C and have the autonomy to carry out trips that can last many months

Longline vessels can have their superstructure (bridge and main body) in the bow or in the stern. Although the majority of the vessels deploy the gear at the stern, some do this on the starboard side of the vessel. Many vessels carry out the haul back of the gear on the starboard side. The work or processing area, which may or may not be sheltered, can be at the bow or at the stern.

Smaller Longliner – Fiberglass Hull

Larger High Seas Longliner – Steel Hull

1.3.2.1 General vessel types by country / region of design

Longline vessels can vary significantly in size, from less than 50 GRT to some between 900 and 1000 GRT. Most vessels are either less than 50 GRT or between 200 and 300 GRT.

1.3.2.2 Fishing Gear and related equipment

While the shape of a vessel gives a good indicator of the type of gear the vessel operates, in longliners it's the fishing gear on board that defines the type of fishing that is conducted. Longliners gear and the equipment needed to deploy it consists of the following several distinct parts:

Reel or Spool

Generally, hydraulically operated longline reel hauls and stores the mainline (normally nylon mono-filament). Depending on the size of the boat, smaller or larger spools are used with some boats using two spools. A traveling block runs the length of the spool slowly guiding the line from one end of the spool to the other when hauling to ensure a level wind.

Line shooter

The mainline is fed through the line shooter that pushes the line off the boat. The mainline is paid out from the back of the stern normally, although some boats are now setting from the side to reduce sea bird interactions.

Hauler

Depending the type of vessels an independent line hauler may be found on deck to assist with hauling operations

Longline clip

The longline clip allows easy attachment and removal of branch-lines, float-lines, radio buoys and other gear from the mainline. When setting, branch-lines and floats are attached as the line travels off the vessel. When hauling, the clip permits easy removal of gear and catch. The picture shows the attachment of the longline clip to the mainline.

Branch-line

Branch-lines are left connected to the mainline and either placed on top of each successive coil of mainline, or coiled and stored in a separate basket. The branch-lines can also be detached and coiled individually, and placed in stacks or baskets for storage. Basket gear generally uses short float-lines and long branch-lines to achieve a deep set.

In some fisheries steel cable leads (as seen in the picture) in between the line and the hook are forbidden.

Baskets, hook bins

The branch-lines are stored in special bins pictured below. Approximately 50 or more branch-lines can be neatly stored and deployed with each bin. Bins are moved to the setting area as needed.

Line and Buoys

Drifting longline has a main line or mother line which can be either mono-filament or multi-fil-ament and which is currently made of synthetic materials such as nylon, polyamide, polyester, etc.

There are several different types of floats used in longline fishing including glass floats, hard plastic floats, inflatable buoys, bullet buoys, and solid foam floats. The most popular are hard plastic floats that range from 165 to 360 mm in diameter. These floats usually have one or two ears - eyes for attaching line - and are ribbed on the outside so they pull through the water easily.

Their number and distribution along the main line partially determines the depth at which the hooks will be set.

Radio Buoys

The radio buoys are placed on the ends of the gear and at regular intervals, in order to locate the gear in the event of breaks. By using a radio goniometer, the location of the signal can be determined and the course to follow can be set in order to locate it.

Special select call radio buoys (Sel-Call) are available that give out a signal only when they are called. When these buoys are used, other boats cannot eavesdrop on the signal and figure out where the boat is fishing. There are also RDF and radio buoy systems that provide GPS positions and sea surface temperature.

1.3.3 Description of the fishing operation

1.3.3.1 Gear Deployment

In surface longline fleets, it is easier to set going downwind, and it is easier to haul going upwind. Deployment of gear usually starts at dusk and takes from 3 to 6 hours of work depending on the mainline length, yet the time taken is highly weather-dependent. The setting process depends on vessel configuration; in some cases, a line-setter is used so that the launch speed of the main line is independent of the vessel's speed. In other cases, the main line is launched by the tension produced by the equipment once it is launched in the sea and the vessel's movement. This limits the possibilities of regulating the amount of mainline launched per nautical mile navigated and thus makes it more challenging to position the gear in the desired depth. Using the line-setter enables a better positioning of the gear, reaching greater depths.

The setting operation requires from 3 to 5 crew members, depending on the vessel, the number of hooks and the degree of automation available.

As the main line moves with the movement of the vessel, one of the crew works on connecting the floats to the main line. Another crew member baits the hook and tosses the hook into the water, while a third crew member attaches the branch line by fitting a snap to the main line. Other crew members work in supporting the smoothness of this operation.

The hooks are left soaking for different periods of time depending on tradition and circumstances. The skipper may decide to set another longline and then return to the beginning of the last one and start hauling, for example. Yet there is a lot of variability.

1.3.3.2 Haulback

Depending on weather, oceanographic conditions and traditions, four to eight hours after finishing the line setting, the haulback of the gear is started, generally starting from the last float set. Sometimes, depending on the final position of the set, the site where the set was started is returned to, in order to begin the haulback of the gear.

The main reason for hauling the last buoy first, however, is that the line can be set going downwind and hauled going upwind. Some fishermen backtrack to the first buoy and start hauling with the first buoy of the set. They usually do this to save travel time or to allow all of the hooks in the set to have a more even soak time. Also, it may be a good idea to reverse the line once in a while to spread the wear evenly, as the line closest to the drum gets more compressed than the line on the outside layers.

Hauling can start at any time, but traditionally, sunrise is preferred. Today, the line is hauled with line haulers, but manual assistance is used in all cases.

In most of the longliners, the haulback is carried out on the vessel's starboard side. Generally, the catch is hoisted aboard manually using "gaffs", except for the largest fish for which the gaffs are linked to a winch.

A crew member oversees the line hauler, which is positioned to enable him to see the boat's course and the long line while operating the hauler and the spool/ reel that stores the line. Depending on the vessel's design, it can also control the speed and course of the vessel during the manoeuvre, but generally, the skipper is in charge. When a fish is caught on the longline, the vessel must often stop the engine to hoist the fish on board

The haul-back operation requires that most crew members be on deck, as many jobs are happening simultaneously and progressively. Fish are hauled, gear (floats, branch lines, buoys, radio boys, etc.) is sorted and stored, and fish are bled and gutted, then pre-chilled and/or frozen and stored.

This operation is carried out at a speed between 2 and 6 knots (weather dependent) and is stopped when large fish and/or species of high market value are present. Depending on the weather and catch rates (the number of fish in the line), it can take 10 to 20 hours.

1.3.4 How Longliners refrigerate fish

Once the catch is on board, it is processed (usually only bled and gutted for tunas and beheading for other species).

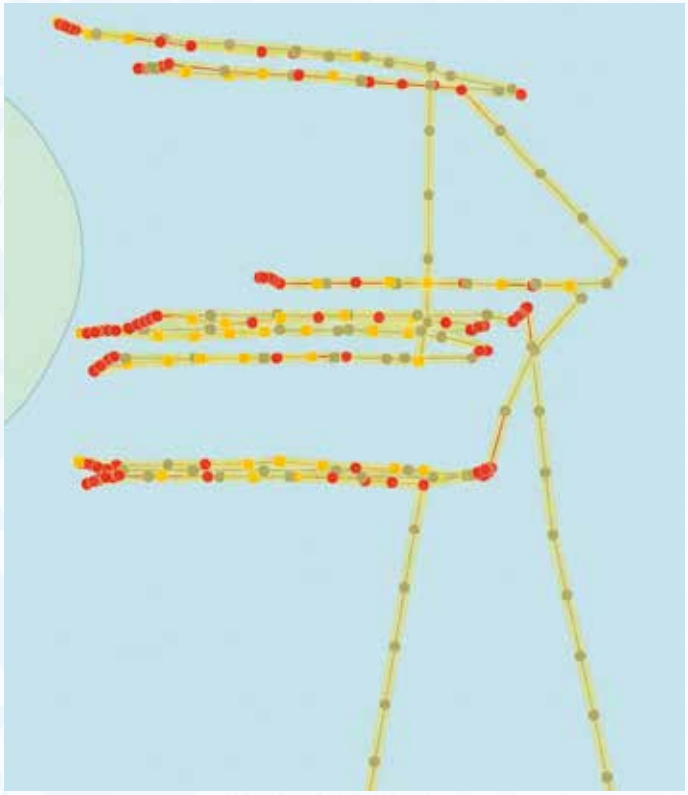
Tunas are normally pre-chilled in a slurry (ice and seawater) and then either stored in ice, refrigerated seawater (RSW) or taken to be frozen, depending on the type of vessel.
Smaller longline vessels carry ice in their fish holds, and some can make ice on board, so they preserve the fish iced.

Bigger vessels can combine the ice storage method or Refrigerated Seawater (RSW) with freezing capacity. In these cases, the fish caught in the first part of the trip are frozen in blast freezers (designed to rapidly freeze the fish without any loss of product quality) and then stored in holding freezers (designed to keep the fish frozen). The fish caught in the last part of the trip is stored in ice or RSW as fresh fish.

The final holding temperature for frozen fish can range from -35°C to -60°C. The large longline vessels only have Ultra-Low-Temperature (ULT) freezer tunnels and holds, which enable them to freeze products up to -60°C and store them for several months.

Many longliners operating in the High Seas tranship the caches to carrier vessels at specific pre-arranged rendezvous points at sea. They tide along the carriers and transfer fish in nets hoisted from the carrier's cranes, or "slings", where all frozen fish are tied up by the tails through ropes to a hook and hoisted to the carrier. The WCPFC and the flag states of both LL and carrier have specific rules that control transhipment at sea.

1.3.5 How the manoeuvring looks on VMS and IAS tracks



Once the vessel begins to deploy longline gear, a distinctive track pattern emerges. During gear deployment, surface-set longline tracks on VMS or AIS tracking systems are unique and easy to identify.

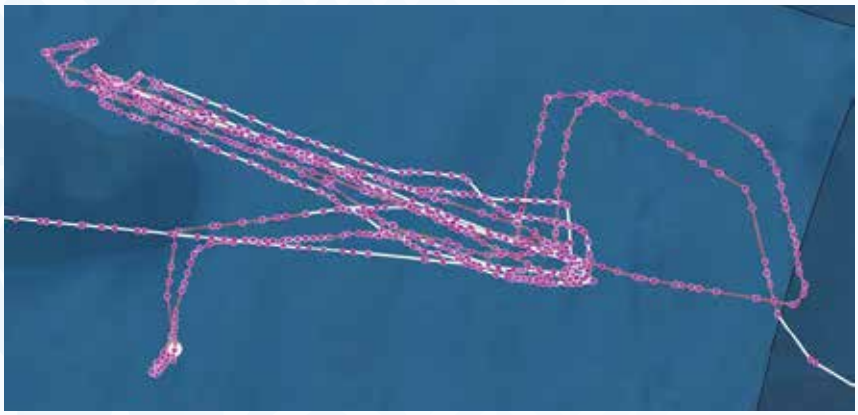
Between-gear deployment tracks tend to be straight lines at relatively consistent speeds.

Depending on the wind and cur-rent, the setting and hauling can be displaced from each other as the longline drifts, yet they maintain a very similar heading.

A vessel can set various longlines in parallel and then return to the beginning to haul or start directly from the last one. Yet, in any case, there could be some variability, but the pattern is stable.

◀ *Example of VMS track of a Longliner*

▼ *Example of the AIS track of a Longliner*



1.3.6 General Duration of a fishing trip

The duration of a trip in a longliner is dependent on many variables. Yet outside their autonomy, one of the most important ones is the presence of frozen cargo holds on board.

Vessels that preserve catch using Ice, Refrigerated Sea Water (RSW), of slurry (seawater and ice) are limited to a maximum of 2-3 weeks of operation before returning to port. A vessel that freezes and chills may freeze the first few weeks of catches and preserve them in ice or RSW for the last two to three weeks.

The duration of a freezer vessel trip will also depend on its cargo hold size and fishing success. Of course, the opportunities to bunker, transhipment, and resupply at sea allow some freezing longliners to not come to port for months or even years.

1.3.7 Insights on PSM inspection of Longliners

1.3.7.1 Vessel Identity Issues

Asian DWFN Longliners are generally standardised in design. Many are models from standard production lines made by a few shipyards; therefore, shape and external appearance alone cannot differentiate them.

Outside markings, engraved names, and markings in all fishing gear are helpful for verifying identity. For more serious identity concerns, the vessel's registry paperwork may need to be verified, and the serial numbers from the hull, main engine, and gearbox may need to be cross-checked.

1.3.7.2 Evidence of illegal or unreported transhipment

Transhipment is highly regulated in most jurisdictions and associated with conditions and authorisations usually found in the licensing conditions. VMS/ IAS-based proximity analysis as part of the Advance Request for Entry in Port (AREP) can indicate the vessels have spent time aside at sea. Yet operationally, there are many valid reasons for which a vessel can get alongside that do not imply transhipment: passing food, gear, crew, parts, salt, oil, etc.

In case of time aside above 4 hrs at drifting speeds (generally less than 2 knots), the possibility of an unreported transhipment should be investigated as part
of an inspection. In this case, records on board for the activity, temperature variations on the cargo hold, estimation of volumes and catch composition found on the holds compared to the one in the documentation can be used to verify that a transhipment occurred.

1.3.7.3 Bycatch

As in any fishing gear, bycatch issues can be minimised, yet they are unavoidable. The minimisation strategies in longliners are highly dependent on the fishing area and the target species.

For example, in tropical tuna fisheries, the depth of setting is an essential element, as most tuna is cached below the thermocline. (A thermocline is the transition layer between the warmer mixed water at the surface and the cooler deep water below is a sudden temperature change that defines two different densities of water)

Sea birds that get caught while feeding on baited hooked can also be seen as bycatch; many countries have specific measures in the licensing agreements to avoid this, such as weighted branch lines, tori lines, or hook-shielding devices, for example.

While it is impossible to check their use unless at sea boarding during fishing, their presence and use on board can be part of port-based inspections.

1.3.7.4 Shark finning

Sharks can be bycatch in most fisheries and are target species for some, particularly longline ones. Licensing conditions will determine the legality of retaining all, some or no shark species on board; furthermore, some fisheries prohibit using steel cable leads for the hooks in the branch lines (to facilitate the shark cutting off the lead and self-release). Therefore, the presence of steel cable leads should be checked during inspection.

If certain sharks are allowed to be retained on board, there are usually associated conditions for the fins to be naturally attached (i.e. not separated) from the body.

The search for the presence of shark fins on board is part of the inspections; shark fins are typically dried on deck and/or in the engine room and then stored in sacks in the freezers behind frozen fish.

1.3.7.5 Crew Labour Conditions

Living conditions on Longliners can be cramped, as the vessels are often smaller than other types, and space is at a premium.

The flag state requirements guide minimal conditions on board. Older vessels built in Asian countries may be seen as having the most complex living conditions, yet they are standard in the fleet. On the other hand, on-board facilities in newer vessels from other jurisdictions may be seen as better since the vessels are built with regulatory conditions for crew welfare as part of the commissioning process.

Longlining is the fishing gear that may require the most extended working hours. Hauling could take over 12 hours, and vessels operating on the high seas may need more time to come to port.

Fisheries inspectors should refer to the relevant national Labour inspectorate if there is suspicion of breaches in labour conditions.

1.4 POLES AND LINERS

Pole and line is a fishing method used to catch large pelagic one fish at a time through the use of a pole (rod), a line, and a barbless lure.

The size of the vessels varies from 15 to 50 meters. Special arrangements are made to use as many poles as possible from the lee side, bow, and stern of the vessel and to keep live bait on board.

1.4.1 How Pole and Liners Catch Fish

When a school of fish is located, generally by observing bird activity, the vessel approaches the school. Seawater is sprayed from the sides of the vessel over the sea surface, while life bait fish are scattered in a manoeuvre known as chumming. This creates the illusion of an active school of prey fish. The bait is kept alive on board in special tanks with circulating seawater.

The poles used, generally fibreglass or bamboo, range in length from 2 to 10 metres, with a line of roughly the same length. Hooks of various sizes are barbless, so fish can be released by taking tension off the line.

A “rod rest” made of canvas, leather, or old rubber tyres is generally used to help the crew hold onto the pole. However, in most Asian vessels, the crew is seated, and the rod rests on the vessel itself.

Depending on the size of the vessel, the crew may number 30 or more. A large crew is needed since fishing time may be limited, and the maximum possible number of rods must be worked.

If larger and heavier fishes are sought, two or three poles may be linked to a single hook. In this case, the fishermen must cooperate closely.

Artificial lures with hooks hidden in feathers are used. A naked hook is sufficient when the tuna is "hot" (very eager to take the bait). The water spraying also camouflages the shadows of the boat and crew.

In some archipelagic fisheries, anchored eFADs (capable of transmitting information on the biomass around the FAD) are being used, and vessels will repeatedly fish around them over time.

1.4.1.1 Fishing Gear and related equipment

Fishing arrangement

Deck equipment is minimal on a pole and line vessel, is more related to the distribution of people either sitting or standing in the bow, stern, port and starboard.

Deck itself is clean so fish can "slide" to the storage are sometimes aided with chutes.

Chumming

When a school is sighted, life bait is thrown over-board and water is sprayed from pipes around the vessel as to mimic the activity of a small fish school.

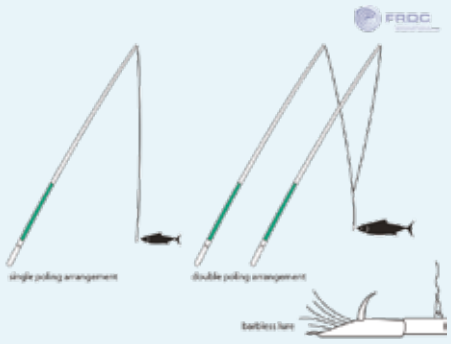
Catch storage arrangements

The boats are equipped with tanks to hold live bait and water spray systems that can be used to attract fish by mimicking the activity that a bait school produces when it breaks the sea surface. Larger vessels may have a refrigerated holds, and some of them with brine which allows them freeze the fish and remain at sea longer.

Poles

As fish are hooked on the lure, they are hauled over the fisher's shoulder onto the deck. Larger fish are taken using a double poling arrangement, operated by two fishers.

Source: http://fish.gov.au/fishing-methods/hook-and-line



1.4.2 How to recognise a pole and liner

The key identifying factor is the absence of significant deck equipment on poles and liners. Considerable space is needed for the crew to stand or sit on the lee (left) side of the vessel and for fish to "flow" into the wells. Japanese-designed pole-and-line vessels have a long-extended bow and a low freeboard (i.e., their sides ride low above the water line) to simplify hauling in the catch. Indonesian vessels are of a similar design

1.4.2.1 General types by country region of design

Pole and line vessels may range in size from 10-50 m in length. There are three general types of pole and line vessels: Japanese, American and Maldives type. However, in the FFA membership, only the Japanese are used. On these, most fishermen fish from the railings around the bow (and lee side of the boat, and, in many cases, also on the stern.

Japanese

Indonesian

1.4.3 Description of the fishing operation and manoeuvring

Independent of the design, the following standard steps feature in all pole-and-line fisheries in the world:

1. When a school of target fish is located, live baitfish are scattered onto the surface of the water (chumming), to create a feeding frenzy.
2. The fishing area is sprayed with water to obscure the fishing line and the hook and further excite tuna, creating the illusion and sound of a large school of small fish near the surface and
3. Poling the fish on deck.

The approach to a school is at managed speed, as the objective is to intercept a moving school and bring it to feed by the boat and not to run the school over.

The length of the whole manoeuvring will depend on the number of fish in the school. While there are substantial variations based on sea conditions, potential mechanical problems, the fishing manoeuvre can generally take from 30 minutes to 2 hrs. During the manoeuvre, the pole and liner drift at very low speeds with the wind and current.

1.4.4 How Pole and Liners refrigerate fish

For the fleet operating in the FFA membership, fish is generally chilled whole in refrigerated seawater (RSW) without bleeding, removing the gills, or gutting. In the bigger vessels with more autonomy, the catch is then brine frozen.

1.4.5 How the manoeuvring looks on VMS and IAS

Pole-and-line fishing for tuna is done in the daytime from slow-moving vessels over short distances, so identifying the tracks is relatively simple.

During FAD closures, vessels tend to drift overnight as fishing can only be done during daylight, as the master needs to visually "see" the school.

1.4.6 General Duration of a fishing trip

The trip duration in a Pole and Liner is dependent on many variables. Yet outside their autonomy, one of the most important ones is the presence of freezing capacity on board.

Vessels that preserve catch using Ice, Refrigerated Sea Water (RSW), of slurry (seawater and ice) are limited to a maximum of 2 weeks of operation before returning to port. Vessels that freeze and chill as a strategy may freeze the first few weeks of catches and preserve in ice or RSW the last 2-3 weeks.

1.4.7 Insights on PSM inspection of Pole and Liners

1.4.7.1 Vessel Identity Issues

Japanese Pole and liners are generally standardised in their design; many are models from standard production lines made by a few shipyards; therefore, more than shape and external appearance may be required to differentiate between them.

Outside markings and engraved names are helpful for verifying identity. For more severe identity concerns, the vessel's registry paperwork may need to be verified, and the serial numbers from the hull, main engine, and gearbox may need to be cross-checked.

1.4.7.2 Evidence of illegal or unreported transhipment

Most vessels involved in Pole and Line fishing in the region return to port to unload, and such minimal transhipment is reported VMS/IAS-based proximity analysis as part of the Advance Request for Entry in Port (AREP) can indicate the vessels have spent time aside at sea. Yet operationally, there are many valid reasons for which a vessel can get alongside that do not imply transhipment: passing food, gear, crew, parts, salt, oil, etc.

If the time interval is above 6 to 8 hours at drifting speeds (generally less than 2 knots), the possibility of an unreported transhipment should be investigated as part of an inspection. In this case, records on board for the activity, temperature variations in the cargo hold, and estimations of volumes and catch composition found on the holds compared to those in the documentation can be used to verify that a transhipment occurred.

1.4.7.3 Bycatch and Shark finning

Generally, the bycatch incidence in Pole and Line is the smallest of all gears, and fishing can be stopped immediately in the case of noticeable catch composition or even fish size. By lowering the tension of the line, the lure can be disengaged, and if the fish lands on deck, it can be returned to the water almost instantly.

Minimal interaction with protected sharks, marine mammals and birds has been documented worldwide.

1.4.7.4 Crew Labour Conditions

Given that pole and line vessels carry more crew than other vessels of similar size, living conditions on board can be difficult. As the deck is open, it is not uncommon to see crew spending the night and sleeping there.

Pole and line fishing is the most physically demanding method for the crew. Fish are manually pulled on board as long as they are schooling by the boat.

They do maintenance and deck cleaning when not involved in busy fishing roles during fishing manoeuvring.

Fisheries inspectors should refer to the relevant national Labour inspectorate if there is suspicion of breaches in labour conditions.

1.5 CARRIERS

Carriers, often called 'reefers,' are refrigerated cargo vessels integral to tuna fisheries in FFA member nations. While not fishing vessels themselves, they play a critical role in transhipping tuna for transport to processing facilities or end-market destinations..

They comprise a large group, yet generally, they are above 300 gross tons (GT) to operate on international voyages. Their different sizes usually relate to their use, with the smaller ones associated with receiving fish from longliner vessels, while the bigger ones from Purse Seiners.

Carriers need to be included in the RFMO positive lists and licenced to operate under the conditions of the flag states, particularly in the high seas and by the coastal states where they operate.

1.5.1 How carriers operate

The central role of a carrier is to receive fish from fishing vessels either at sea or in port areas. However, carriers are also used to carry food, bait, parts, equipment, etc., to the fishing vessels and, in some cases, to set up and drop FADs on behalf of other fishing vessels, though this is not permitted in most jurisdictions.

While the WCPFC states that "there should be no transhipment on the high seas" in principle, this prohibition is compromised by a loophole that allows lag states to assert that it is "impracticable" for certain vessels (such as longliners) to comply; hence, it only applies to Purse Seiners that are required to tranship to carriers in ports.

When operating from ports, carriers anchor in the port waters and base themselves there to receive fish from purse seiners.

When transhipping at sea with longliners, carriers travel to a predetermined area to rendezvous with fishing vessels. They receive fish from these vessels and generally transfer goods, parts, consumables, and crew to the fishing vessel.

Yet it is essential to note that a trip on a single carrier vessel may include transhipments with several vessels in different locations, both at sea and in port.

Once the carrier vessel is full or has sufficient catch, it will steam to the landing port(s).

An aspect seldom addressed is that carriers also have a fundamental role in providing goods and parts to fishing vessels (i.e. food, mechanical parts, oil, salt, foaming and cleaning agents, ropes, cabling, net components, fishing gear, bait, etc.).

Using salt as an example, FFA (2021)4[1] reports an estimated annual use of 140,000 tonnes of bagged salt by the purse seine fleet in the FFA Membership (with the qualification that these are conservative numbers). Salt is delivered to purse seiners by carriers at sea before or during transhipment. In the case of bait, a low-end estimation is 12 million cartons of bait.

1 FFA, 2021. An assessment of fishing vessels plastic waste generation in the WCPO region, and potential measures to improve waste management in the fleet.

Carriers also play a fundamental role in crew rotation and replacements on the fishing fleet. Since it is substantially cheaper to have crew as passengers on carriers to meet the vessels in the HS or in port than to fly them to the Pacific Islands, this extends to visa issues. The gateways for flights to the Pacific Islands are the USA, Australia, and NZ, which require transit visas for most Southeast Asian nationalities. These visas are expensive and difficult to obtain.

Ownership and operational control arrangements for carriers engaging in tuna transhipment in the WCPO are dynamic and variable, although they can be broadly classified into three types:

1. **Charterer model:** This involves a chartering corporation leasing a carrier vessel owned and crewed by an independent owner. Two types of charters are available: a time charter, in which the charterer leases the carrier for a set length of time (e.g., one year), and a voyage/space (or 'spot') charter, in which the charterer 'buys' space on a carrier for a specific voyage. This is the most common operational approach in the region.
2. **Integrated fishing-carrier companies:** Several fishing enterprises own and run their carriers as part of an integrated supply chain. These companies are typically larger, with a critical quantity of catching vessels to warrant their carrier. They also usually own post-harvest processing facilities and employ carriers in an integrated supply chain. Operators have commissioned most newer carriers under this model.
3. **Logistics service providers:** These operators are linked to fishing and have entered the tuna transhipment business from the 'shipping end' rather than the 'fishing end'. Their primary interest is in offering a commercial service that transports fish from fishing sites to processing facilities or markets.

The ownership and registration arrangements of carrier vessels are generally purposefully complex. Most reefer carriers are flagged to states operating open registries, also known as 'flag of convenience' (FOC) states.

1.5.2 How to recognise a carrier

Modern carrier vessels generally have a characteristic silhouette. They have raised cranes and big hatches for loading and unloading fish.

Shape

Long decks are very characteristics and the presence of on-deck cranes, refrigerated cargo holds and oversize fenders is uniquely related to carriers

Unloading by the wharf

Transhipping at anchor in port area

1.5.3 Description of the operation and manoeuvring

Once the fishing vessel comes close to the carrier, generally, the followings steps take place.

Alongside

Alongside (ropes tied) – the fishing vessel comes alongside the carrier vessel. Large fenders are lowered from the carrier vessel before the fishing vessel comes alongside. Lines (mooring ropes) are secured at the bow first and then at the stern.

Generally, fishing vessels are secured to the port side of the carrier vessel, but in many instances there may be 2 and up to 3 in large carriers vessels alongside on port and starboard. Depending weather this process can take up to 30 minutes.

Transhipment (Transfer of Fish)

On board cranes from the carrier reach over the fishing vessel. From Purse Seiners to Carriers the movement of fish is always in nets that are placed flat out on the deck and the fish were placed on it before transfer, for Long Liners and P&L nets may be used, but more commonly a method called “swing” in English is used, in a swing, fish are attached to the carrier vessel’s hook and cable by ropes (i.e. a “string”). Every fish from a longliner normally has a closed loop of monofilament (normally to the caudal end) to help with their transfer.

A closed circle of thicker rope is fed through these loops to gather the fish together. Then either ends of the looped rope is slipped over the hook at the end of carriers winch/boom cable and passed to the carrier.

Transhipments are sometimes interrupted by other activities; mostly the movement of cargo and infrequently the movement of catch between hatches. Transhipment is also interrupted by rain and crew rest

Loading of fish in the carrier

Once on board, the fish pass below deck to be loaded into huge hold that will take most of the hull over various decks. Freezing such large amount of fish requires very large powerful freezing equipment and high volume holds which occupy much of the vessel. Many carriers separate the loads of the different donor fishing vessels with old nets, the carrier's cargo plans keep record of where is what on board.

Transfer of cargo and crew

Cargo transfers from carriers to fishing vessels are part of the transhipment process. Cargo is mostly contained inside large wooden boxes and can contain various items like bait, clothes, food and machine parts.

Crew transfers depend on prearrangements in between the vessels. It is cheaper and less complex for some nationalities to do crew changes via carriers than through flights via countries with complex visa requirements.

Offside

Offside (ropes untied) the fishing vessel steams away from the carrier vessel. The fishing vessel threw off its ropes very soon after transhipment (or cargo transfer) is complete. Fenders stay in place until the carrier is ready to steam to next destination.

1.5.4 How carriers refrigerate fish

The cold store principle in a carrier vessel s operates at the temperature and on the same principles as recommended for shore-based cold stores.

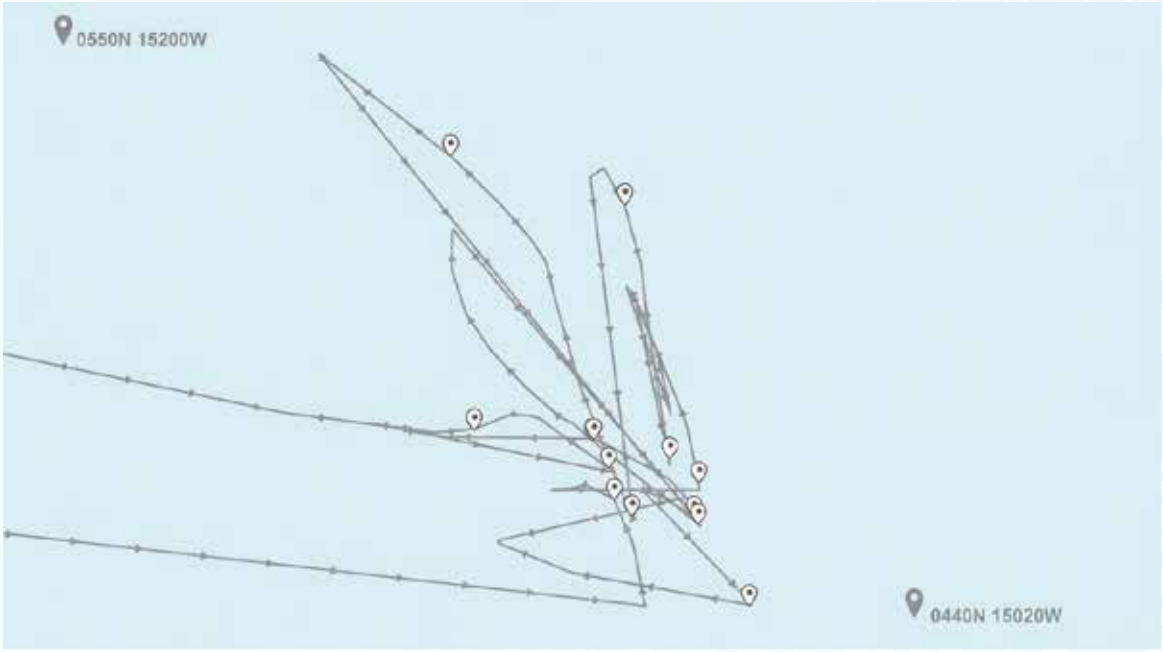
Loading and unloading of a fishing vessel's cold store is usually done through hatches on the main deck.

Fish is generally stored loose in the holds.

The choice of cooling systems available for the cold stores of carriers is much the same as that for other stores. Pipe grids and forced circulation coolers have both been used successfully.

1.5.5 How the manoeuvring looks on VMS and IAS tracks

Carrier VMS and AIS tracks – Carrier tracks on the VMS or AIS are relatively sim-ple to identify as they tend to be associated with periods of 'drifts' at very low speeds.



1.5.6 General duration of a carrier trip

The trip duration in a Carrier is dependent on many variables. Since their crucial objective is to collect fish until they are as complete as possible before heading to the unloading port, in general, 1 to 3-month trips are common.

1.5.7 Insights on PSM inspection of carriers

Carrier vessels differ from most fishing vessels and have specific issues and documents that may not be found on other vessels.

1.5.7.1 Evidence of illegal transhipment

Transhipment is highly regulated in most jurisdictions and associated with conditions and authorisations normally found in the licensing conditions. VMS/IAS-based proximity analysis as part of the Advance Request for Entry in Port (AREP) of at-sea pre-boarding intelligence analysis can indicate the vessels have spent time aside at sea.

Yet operationally, there are many valid reasons for which a vessel can get along-side that do not imply transhipment; passing food, gear, crew, parts, salt, oil, etc. are usual reasons. Usually, the amount of time aside (anything above 5 hrs), could imply a potential transhipment.

In these cases, records on board for the activity, temperature variations on the cargo hold, estimation of volumes and catch composition found on the holds compared to the one in the documentation can be verified that non-authorised transhipment occurred.

1.5.7.2 Carrier Arriving with Fish On-board

Port inspections of carrier vessels should include a physical inspection of the cargo holds to confirm that the volume and species on-board estimations are accurate. Due to the quantities of catch on-board these vessels and depending on how full the holds are, a detailed estimate based on an initial inspection may not be possible. However, a physical inspection can provide an initial indication of the accuracy of the records of the fish already on-board the carrier vessel that were provided as part of the AREP.

Carrier vessels are expected to maintain detailed documentation of the fish received on-board. This needs to detail the species and volume estimates and the stowage area used for each specific transhipment of fish received (noting a single donor vessel's catch may be split between different holds or storage areas). As the carrier vessel is transporting other vessel's fish (which has generally not been fully paid for yet), the donor vessel operators and the future buyer will have a strong interest in the quantities, management, and stowage of the fish transhipped.

Furthermore, commercial insurance companies will use detailed information collected on board to settle claims in case of losses or damage related to fish on-board, either via accidents or, more usually, failures in the refrigeration systems of the carrier.

Carriers must maintain detailed temperature records in the cargo holds, not only for insurance purposes but also for seafood safety-related requirements arising from their approval status with the EU and for due diligence in the prevention of histamine.

1.5.7.3 Carrier vessel-specific documents are to be on board

For fish to enter the EU market, the vessels (both donor and carrier) must be included on the list of approved vessels and establishments for that country.[2]

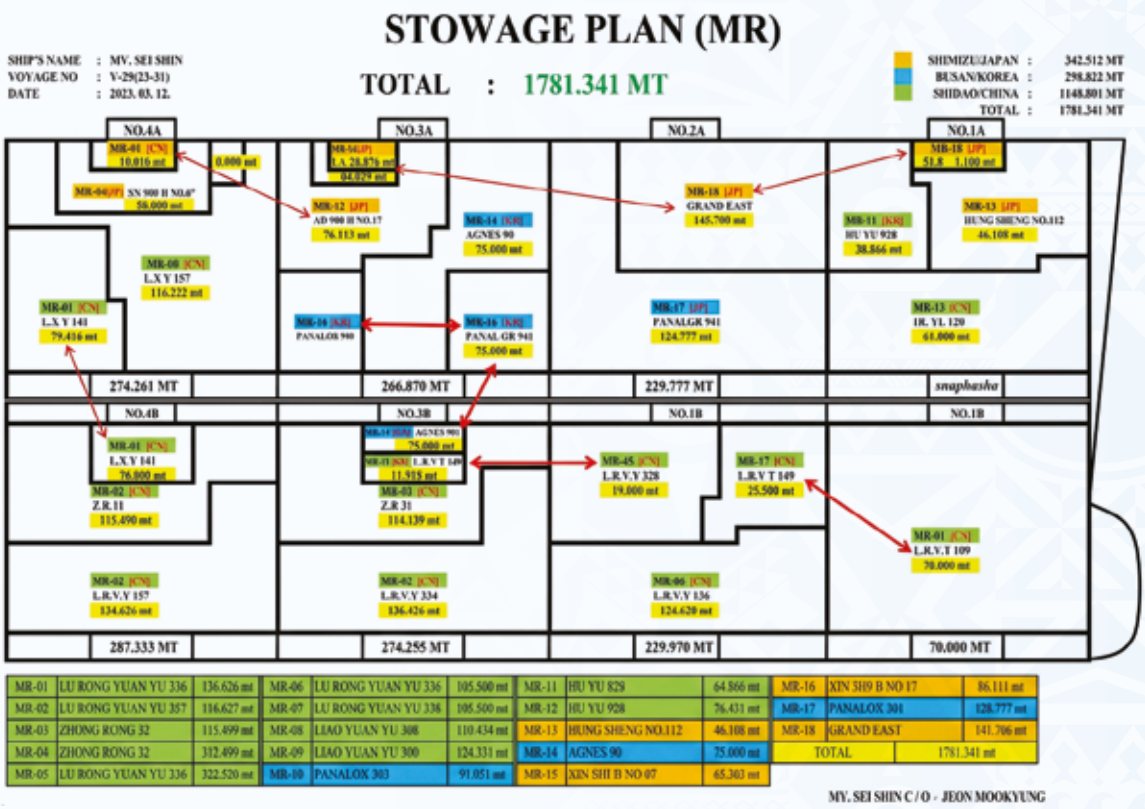
The conditions of EU approval require a series of infrastructure requirements, such as continuous temperature recording devices for all holds. These are typically located in the engine room's main control space, and the temperatures are also registered in the chief engineer's logbook. The job aid discusses how these documents can be a valuable source of information to help identify possible transhipment activity.

Sudden increases in the recorded cargo hold temperatures can further corroborate any suspected transhipment activity when the hatch covers are opened to receive or transfer fish.

1.5.7.3.1 Stowage Plan

A stowage or hatch plan is a document fundamental to carrier vessel safety and stability. For commercial reasons, the plan also outlines the distribution of the contents of all cargo holds, the quantities of fish stored on board in each hold or cargo area, and the vessels from which the catch was received. Catch from a single vessel can often be stored across different hold or cargo areas depending on the capacity at receipt and to ensure carrier vessel stability. The plan can also detail the port of discharge for the fish on-board.

2 See list of countries and establishments here: https://webgate.ec.europa.eu/tracesnt/ directory/publication/establishment/index#!/search?classificationSectionId=FISHERY_ PRODUCTS&sort=country.translation

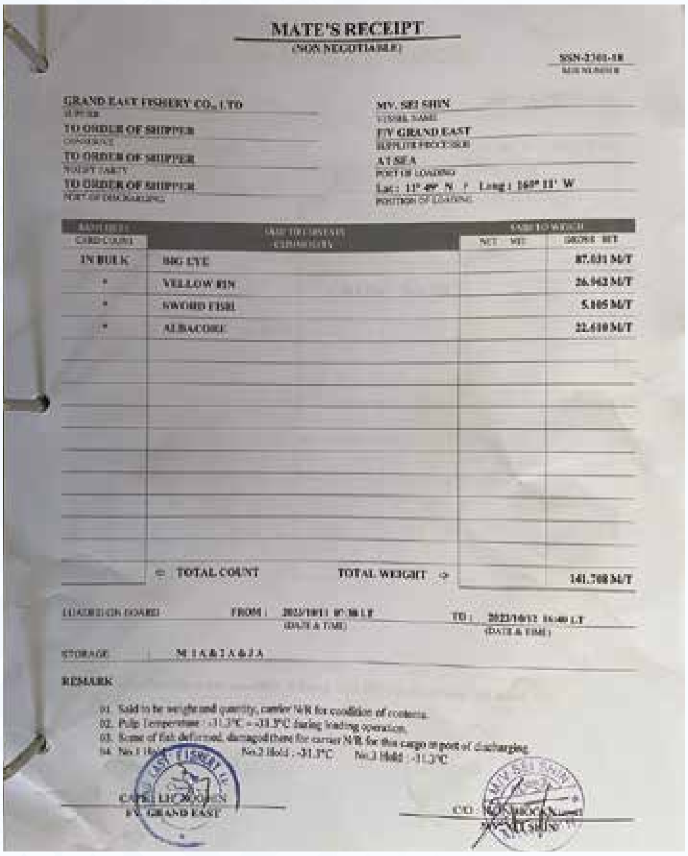


Example carrier vessel stowage plan

The stability of a carrier vessel changes throughout its voyage depending on the amount of catch on-board and its stowage location. Fish products loaded in a carrier vessel's cargo holds located on different deck levels or in various locations fore and aft of the carrier vessel can also help – or reduce – vessel stability.

It can be important for port inspectors to consider the carrier vessel's stability during the trip and assess if the storage location (and time taken on-board) makes sense. Stowage or hatch plans should, therefore, be considered alongside other records of transhipment and activities, including:

- transhipment declarations (do quantities, species and donor vessels align?),
- recorded details in the deck logbook (do the dates of vessel encounters align with how the catch is stored on-board?),
- activities recorded in the AREP supporting documents (do quantities, species and donor vessels align?), and
- mates' receipts (do quantities, species and donor vessels align?).



MATE'S RECEIPT
(NON NEGOTIABLE)

GRAND EAST FISHERY CO., LTD — SHIPPER
TO ORDER OF SHIPPER — CONSIGNEE
TO ORDER OF SHIPPER — NOTIFY PARTY
TO ORDER OF SHIPPER — PORT OF DISCHARGING

MV. SEI SHIN — VESSEL NAME
F/V GRAND EAST — SUPPLIER/PROCESSOR
AT SEA — PORT OF LOADING
Lat : 11° 49' N / Long : 160° 11' W — POSITION OF LOADING

SAID TO BE CARD COUNT	SAID TO CONTAIN COMMODITY	NET WT	GROSS WT
IN BULK	BIG EYE		87.031 M/T
"	YELLOW FIN		26.962 M/T
"	SWORD FISH		5.105 M/T
"	ALBACORE		22.610 M/T
	⇐ TOTAL COUNT	TOTAL WEIGHT ⇒	141.708 M/T

LOADED ON BOARD FROM : 2022/10/11 07:30 LT (DATE & TIME) TO : 2022/10/12 16:40 LT (DATE & TIME)

STORAGE : M 1 A & 2 A & 3 A

REMARK

01. Said to be weight and quantity, carrier N/R for condition of contents.
02. Pulp Temperature : -31.2°C ~ -31.5°C during loading operation.
03. Some of fish deformed, damaged there for carrier N/R for this cargo in port of discharging
04. No.1 Hold No.2 Hold : -31.5°C No.3 Hold : -31.2°C

CAPT. F/V GRAND EAST

C/O MV. SEI SHIN

Mates Receipt

DELIVERY RECEIPT OF PARCELS

NAME OF SHIP : MV. SEI SHIN
DATE : 2023/02/16 LT
VOYAGE NO : V29(23-01)
FISHING VESSEL : LU RONG YUAN YU 799
POSITION : 00° 25' 4" S 159° 52' 0" E

1	FROZEN BAIT	2,400 C/S	24.000 M/T	
		1,200 C/S	12.000 M/T	
	TOTAL	3,600 C/S	36.000 M/T	
2	LIST OF CONSIGNMENT			
	DRY CARGO			** SHIMIZU LOADING
	FROZEN FOOD			
	FROZEN FOOD			
	FROZEN FOOD			

* Remarks

All Items Received Correctly & Good in Condition From MV, SEI SHIN

CAPT. TAIAN ZHANJUN

Goods receipt

1.5.7.3.2 Mates Receipt

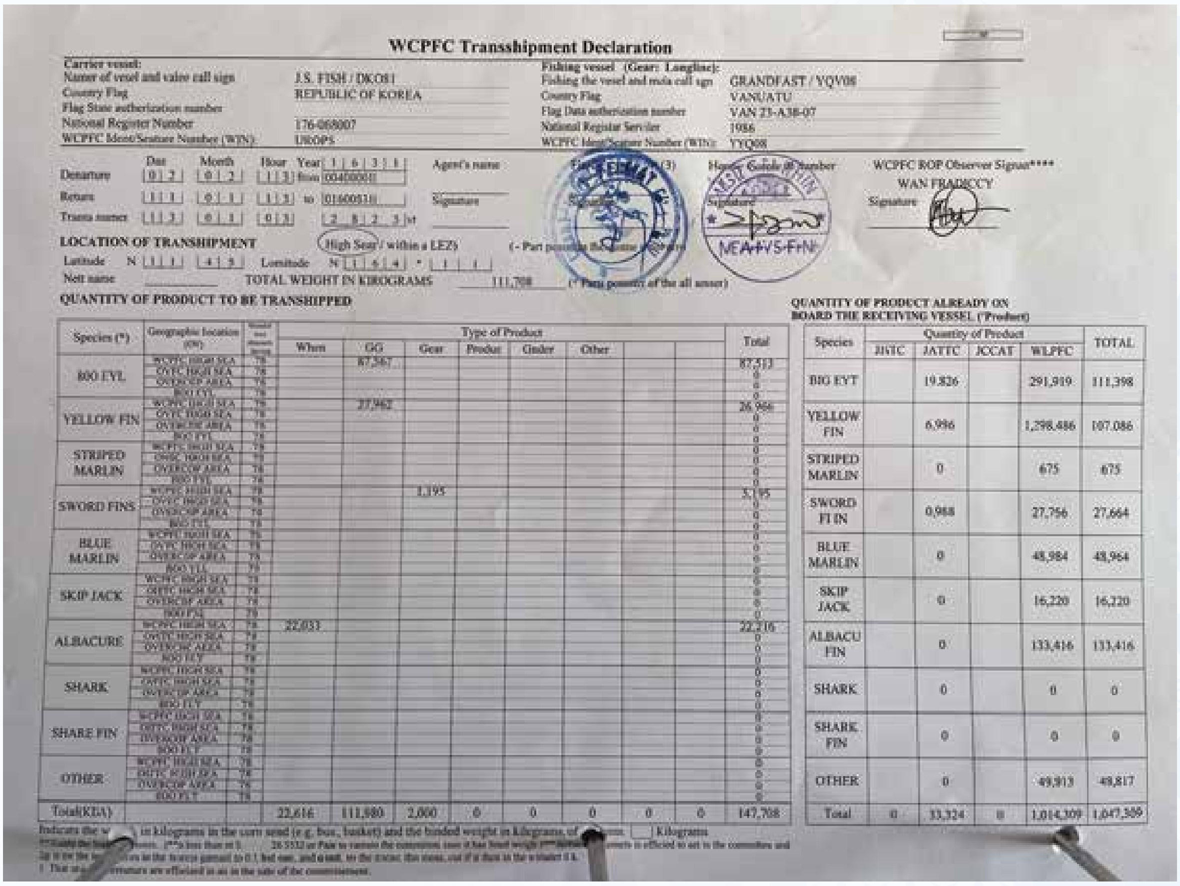
When fish is transhipped between vessels, the masters of both vessels typically sign a document called a mates' receipt, which signifies agreement as to the values, amount, and species transhipped. The mates' receipt is an important document as it can often be the basis of financial transactions. In this way, it can be compared to an official receipt, like that received in any other financial transaction.

The volumes and species of fish documented on the mates' receipts should be consistent with those on the stowage or hatch plan, transhipment declarations, and the activities recorded in the supporting documents.

Note the inclusion of "non-negotiable" at the top of the document. This indicates that the details are agreed upon by the vessel masters and cannot be negotiated later.

1.5.7.3.3 Supplies/Goods receipt

When goods or supplies are transferred between vessels, the masters of both vessels typically sign a document stating their agreement on the amount and nature of the goods transferred. This document is important when encounters are detected where no transhipment is declared. If it is claimed that an encounter between the carrier vessel and donor vessel was only to transfer goods or supplies and not to tranship fish, then a delivery receipt should verify this exchange.



WCPFC Transshipment Declaration

Carrier vessel:		Fishing vessel (Gear: Longline):	
Name of vessel and radio call sign	J.S. FISH / DKO81	Fishing the vessel and radio call sign	GRANDFAST / YQV08
Country Flag	REPUBLIC OF KOREA	Country Flag	VANUATU
Flag State authorization number		Flag Data authorization number	VAN 23-A38-07
National Register Number	176-068007	National Register Service	1986
WCPFC Ident/Seature Number (WIN)	UKOPS	WCPFC Ident/Seature Number (WIN)	YYQ08

	Day	Month	Hour	Year 1 6 3 1
Departure	0 2	0 2	1 3	from 00400001
Return	1 1	0 1	1 3	to 01600531
Transs numer	1 3	0 1	0 3	2 8 2 3

Agent's name / Signature

WCPFC ROP Observer Signat****: WAN FRADICCY / Signature

LOCATION OF TRANSHIPMENT (High Seas / within a LEZ)

Latitude N 1 1 / 4 5 Longitude N 1 6 4 °

Nett name ______ TOTAL WEIGHT IN KIROGRAMS 111,708

QUANTITY OF PRODUCT TO BE TRANSHIPPED

Species (*)	Geographic location (EW)		Whm	GG	Gear	Produc	Guder	Other			Total
800 EYL	WCPFC HIGH SEA	78		87,367							87,513
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 EYL	78									0
YELLOW FIN	WCPFC HIGH SEA	78		27,962							26,966
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 EYL	78									0
STRIPED MARLIN	WCPFC HIGH SEA	78									0
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 EYL	78									0
SWORD FINS	WCPFC HIGH SEA	78			1,195						3,195
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 EYL	78									0
BLUE MARLIN	WCPFC HIGH SEA	78									0
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 EYL	78									0
SKIP JACK	WCPFC HIGH SEA	78									0
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 FYL	78									0
ALBACURE	WCPFC HIGH SEA	78	22,033								22,216
	OWFC HIGH SEA	78									0
	OVERCOW AREA	78									0
	800 FLY	78									0
SHARK	WCPFC HIGH SEA	78									0
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 FLY	78									0
SHARE FIN	WCPFC HIGH SEA	78									0
	OWFC HIGH SEA	78									0
	OVERCOP AREA	78									0
	800 FLY	78									0
OTHER	WCPFC HIGH SEA	78									0
	OWFC HIGH AREA	78									0
	OVERCOP AREA	78									0
	800 FLY	78									0
Total(KDA)			22,616	111,980	2,000	0	0	0	0	0	147,708

QUANTITY OF PRODUCT ALREADY ON BOARD THE RECEIVING VESSEL (*Product)

Species	Quantity of Product				TOTAL
	IIATC	JATTC	JCCAT	WLPFC	
BIG EYT		19,826		291,919	111,398
YELLOW FIN		6,996		1,298,486	107,086
STRIPED MARLIN		0		675	675
SWORD FI IN		0,988		27,756	27,664
BLUE MARLIN		0		48,984	48,964
SKIP JACK		0		16,220	16,220
ALBACU FIN		0		133,416	133,416
SHARK		0		0	0
SHARK FIN		0		0	0
OTHER		0		49,913	49,817
Total	0	33,324	0	1,014,309	1,047,309

Indicate the w... in kilograms in the corn send (e.g. box, basket) and the binded weight in kilograms of ... Kilograms

1.5.7.3.4 Transhipment Declaration

Transhipment Declarations are common requirements for vessels fishing within RFMO areas and may also be required by some national transhipment control schemes. The declaration must include information as defined in related conservation and management measures (or a similar mechanism of the RFMO5), national legislation (for transhipments in EEZs), or other conditions.

The transhipment declaration must be completed by both the donor and receiving vessel for each transhipment that takes place within an RFMO's area of competence and/or each transhipment of fish that was caught within an RFMO area of competence, regardless of where this transhipment occurs.

This document must be on board, and the volumes and species found in all transhipment declarations must be consistent with those found in both the stowage plan and the mates' receipts.

1.5.7.4 Crew Labour Conditions

Living conditions on carriers are generally better than in all fishing boats as operationally, they are related more to being seafarers than fishermen.

Conditions on board are normally guided by the flag state requirements but under ILO and IMO principles. Carriers operate under time-bound routines with standardised breaks. When the donor's vessels are not aside, the crew is always involved in maintenance.


SWL D.

2 THE STRUCTURE OF PSM OPERATIONS

2.1 INTERAGENCY COLLABORATION

Effective PSM must operate under interagency solid collaboration, including clear and effective liaison and communications between the fisheries authority (FA), port authority, customs, and immigration, with standard approaches to enforcement and legal matters.

It is clear to all agencies that entry into the port and use by fishing vessels and support vessels can only occur with the fisheries authority's decision or approval.

While realities vary across FFA member states, there is one scenario that can serve as a template and guide in each country. This is the Interagency collaboration at airports, like in maritime ports, which involves multiple government agencies working together on measures like border control, customs, and biosecurity.

This mirrors efforts in maritime port state measures that focus on interagency coordination to combat issues like illegal fishing by combining resources and information.

Key aspects of interagency collaboration at airports

- **Harmonising processes:** Different government agencies (e.g., Customs, Immigration, Biosecurity) coordinate their inspection processes to avoid duplication and speed up passenger flow through airports.
- **Information sharing:** Agencies share intelligence and data to identify potential risks, such as illegal goods or security threats, more efficiently and in an integrated manner.
- **Joint operations:** Agencies can conduct joint operations or have shared facilities. For example, a single inspection bench might handle multiple inspection types, making the process smoother for passengers and more efficient for the government.
- **Streamlining passenger experience:** The goal is to create a faster and less cumbersome experience for travellers by having agencies work together seamlessly
- **Security and safety:** Collaboration is crucial for national security, biosecurity, and public health, with airports being a primary gateway.

Connection to port state measures

- **Complementary goals:** Just as port state measures at sea aim to prevent illegal fishing by coordinating checks on vessels entering a port, airport collaboration seeks to prevent illegal activities and entry of unauthorised goods through air travel.
- **Information exchange:** Both systems rely heavily on it. For maritime, this includes using systems such as the FFA ePSM and the **PSMA Global Information Exchange System (GIES)** to share vessel data. For airports, it's about sharing passenger and cargo information between agencies.

- **Interagency coordination:** Both require government agencies to work together and coordinate their procedures. The challenge is ensuring this "inter-agency process" works efficiently.
- **Denial of Entry/Services:** The collective action of multiple agencies allows a port State to deny entry or essential services (refuelling, landing catch, etc.) to vessels suspected of IUU fishing, thereby removing the economic incentive for illegal activities

2.2 TRAINING OF INSPECTORS

Boarding officers and VMS operators should be trained under FFA's *Certificate IV in Fisheries Enforcement and Compliance* qualification, which provides them with the technical and practical skills and knowledge expected of a competent MCS Officer.

The programme covers curricula that comply with standards of competency related to demonstrating knowledge of the Western and Central Pacific Ocean (WCPO) Fishery, MCS concepts and legal frameworks. This programme also helps students to apply MCS tools to effective fisheries management and contribute to effective MCS activities as well as operational planning and coordination. In addition, students can contribute to regional cooperation in MCS activities and Occupational Health and Safety (OHS) requirements.

Furthermore, beyond this guide, support programmes for regional and international donor agencies provide ongoing support for specific PSM training.

2.3 APPLICATION OF THE FFA REGIONAL RISK ASSESSMENT PROCESS

The FFA Regional PSM Framework was adopted at FFC114 in June 2020. The Regional PSM Framework supports the development of a risk assessment process and provides the minimum data and information required to support PSM risk assessments that[3];

- incorporates agreed regional minimum assessment criteria, will provide a basis on which to decide to permit port entry or deny port entry, and
- commences when the FFA Member receives a request to enter the port, and the risk assessment will continue to support targeted port inspection processes and decisions on the use of port services;
- relies on data and information to inform the assessment of risk and

If any information required to support the risk assessment needs to be included, port entry will only be permitted once the port State receives and assesses all required information.

3 Towards an FFA Regional PSM Risk Assessment Criteria (RAC) –RMPW4/WP2-RAC

The level one risk analysis criteria would apply to all vessels seeking entry to an FFA Members port.

- provide the basis for FFA Members to make decisions as they relate to port entry requests;
- pose high-level questions about a vessel and its activities (Risk Analysis Question);
- requires specific data and information to be provided and/or available for risk analysis questions to be answered (Required Data and/or Information);
- response to the risk analysis question will impact the level of risk a vessel may present in relation to undertaking IUU activities (Response and Impact) and;
- this informs an FFA Member's decision-making as it relates to port State measures.

The level two risk analysis criteria inform port use decisions and in-port responses and interventions (e.g., inspections or port monitoring).

Figure 1 below provides a simple flow diagram demonstrating how the risk assessment processes align with FFA's regionally agreed PSM decision points and risk assessment processes.

2.4 OPERATIONAL STRUCTURE

2.4.1 Using FFA ePSM Web App

The development of FFA's e-PSM system web-based portal assists FFA Members in adhering to the Regional Port State Measures Framework (RPSMF) consistently and, as such, addresses the PSM needs of all FFA's members fisheries authorities entirely.

The FFA e-PSM will facilitate a managed work flow throughout the life cycle of a fishing vessel port visit, from the point of the Advance Request for Entry into Port (AREP) through risk assessment, port entry decision, inspection, port use decision, port monitoring, and departure clearance.

The system has two roles: one for agents and one for the fisheries authorities, including a fisheries PSM focal point and boarding inspectors. These are under group-based access control rules to ensure that information is only visible and editable by appropriate users at each port state.

The FFA e-PSM system facilitates a managed work flow throughout the life cycle of a fishing vessel port visit, from the point of the Advance Request for Entry into Port (AREP) through risk assessment, port entry decision, inspection, port use decision, port monitoring, and departure clearance. The system is an e-PSM In-Port Inspection Application, an on-board electronic inspection form that Members can easily operate from a tablet or mobile phone with internet access. It also has offline capabilities that can be accessed without internet access.

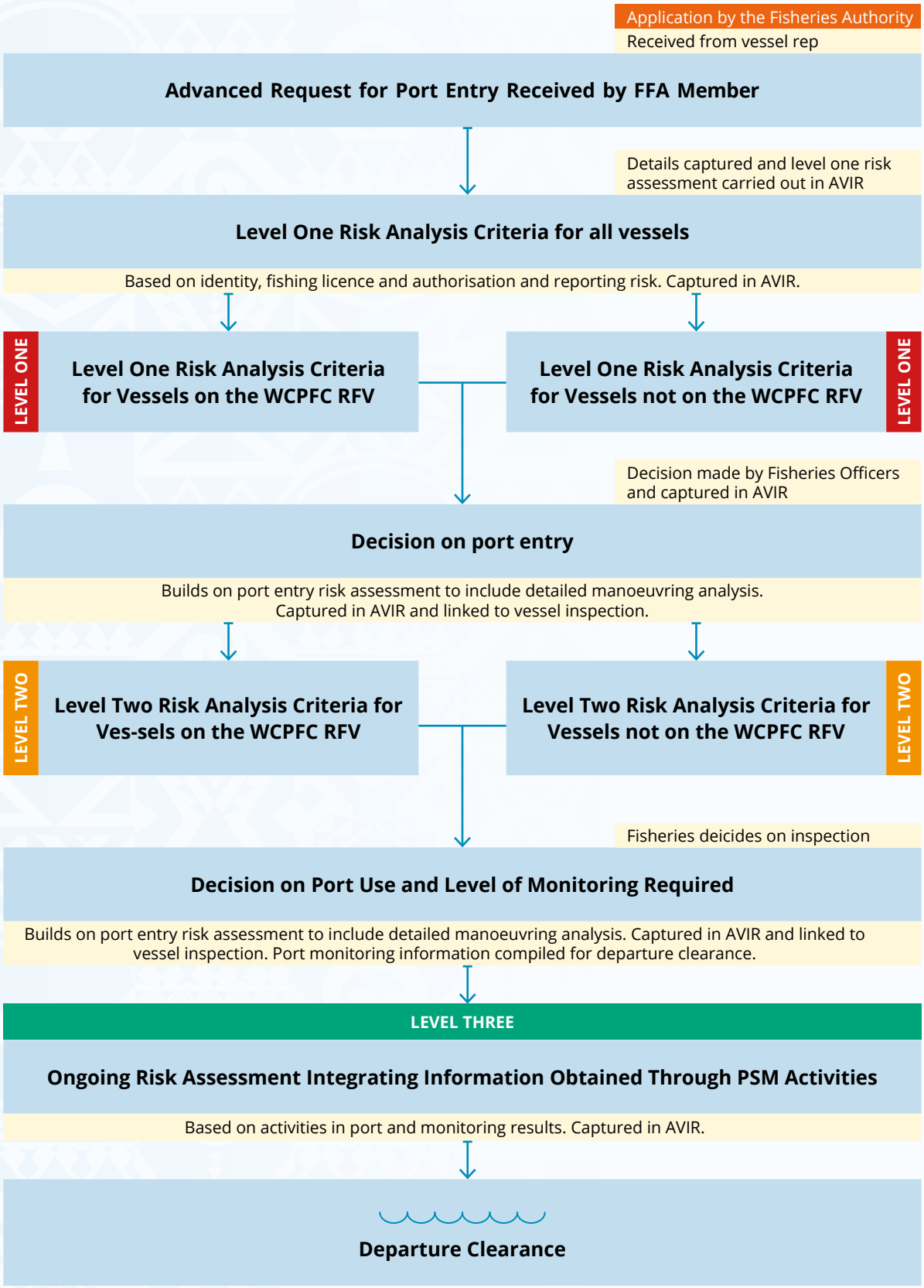
The FFA e-PSM system has two user roles: the Fishing Industry/Vessel Agents and the Fisheries Administration/Authorities. The Fisheries Administration has a Fisheries PSM Focal Point and Fisheries Officer as boarding inspectors. These are under group-based access control rules to ensure that information is only visible and editable by appropriate users at each port state.

- The Vessel Representative user will be associated with an agency and can submit Advance Requests for Entry into Port (AREP) on behalf of the vessels they are responsible for. They will also have access to interact with AREP files submitted by others within the agency and, later in the process flow, notify the Fisheries Administration of their vessel's departure.
- The Fisheries Administration covers both Fisheries Focal Point and Fisheries Officer personnel. Both roles have similar permissions, but Fisheries Focal Points have higher permissions and responsibilities around user management.
  - The Fisheries Focal Point user at the Member's fisheries Administrator will have the same permissions as Fisheries Officer users with an additional role in account management (create, update, block) for all users (fisheries and vessel representatives) associated with their country, communicate with FFA e-PSM team on issues and any changes required.

Boarding incoming Fishing Vessels as part of PSM procedures. Photo: Francisco Blaha

FFA Regional Risk Assessment Process

Figure 1: Fisheries Authority risk assessment processes alignment with FFA's agreed PSM Framework.



– The Fisheries Officer users can view and work on all vessel-port files where the vessel has requested entry into a port within the port State jurisdiction using risk assessment to either allow or deny port entry and conduct a physical inspection to allow or deny port use and give departure clearance.

The system has an e-PSM In-Port Inspection Application, an on-board electronic inspection form that Members can easily operate from a tablet or mobile phone with internet access. It also has offline capabilities that can be accessed without internet access.

2.4.1.1 Back up procedure

The FFA e-PSM is the basis of the PSM process's initial steps since it embeds the initial steps described below. In case the FFA e-PSM system fails, the PSM pro-cess takes the following structure.

2.4.2 Vessel Arrival Notification

In the FFA Membership, the fishing vessel's arrival notification can follow two separate information flows into the Fisheries authority.

- Arriving vessels communicate with the fisheries authority using minimal and non-standardised information, leasing with the vessel agent in port to deal with all other incoming requirements.
- Or exclusively through agents

In case 1, vessel agents support vessel entry into port to other line agencies that work in parallel but complement the Fisheries Authority's role in PSM, particularly around notification of vessel arrival. This double flow of information and operation needs to be formalised as it can lead to inefficiencies in the PSM process.

This need has led many countries in the region and the FFA to formalise the role and requirements of agents in the PSM framework by requiring them to:

- Register with the Fisheries Authority;
- Comply with the minimum information to be provided;
- Established requirements for communication with the Fisheries Authority.

For this to be effective, the agents should only request the port entry via a regional web portal/IMS such as the FFA ePSM that links to the port, coastal and flag State and uses regional standardised data fields or one to be developed locally.

In these cases, the vessel's agent would be required to input the data and upload the required information on behalf of the vessel so that the Fisheries Authority can act on the provided information. It is highly recommended that the role of agents be formalised.

2.4.2.1 Time frames

While the FFA PSM framework does not impose a specific time frame, It is up to the country to decide on the required time frames, taking into consideration the 72 hrs required by PSMA, A suggested schedule follows:

- The minimum time frame for requesting arrival notification for vessels not in the WCPFC register is 72 hours.
- The minimum time for vessels on the FFA Vessels of Good Standing List and the WCPFC Record of Fishing Vessel is 48 hours. Port entry is granted, and the fisheries authority assessment focuses on port use.
- For licensed vessels fishing in national waters, the minimum is 24 hrs, yet 48 hrs are preferable.

2.4.3 Port Entry

Once information on incoming vessels is received, the Fisheries Authority are encouraged to grant port entry to vessels on the FFA Vessels of Good Standing List, the WCPFC Record of Fishing Vessel, and the AITTC Vessels Register.

Vessels not in the above registers are assessed on a case-by-case basis, and port entry is not guaranteed. The port entry analysis is based on equivalent measures to the vessels whose entry is granted. However, the Fisheries Authority still requires notification of port entry for these vessels, which allows them to work on the risk analysis before the vessel's port entry, which the boarding officer will use for inspection. As such, the Fisheries Authority should be focused on port use rather than access to a port.

RFMO-related IUU listing can be assessed on this link: ***iuu-vessels.org/Home/Search***

When a vessel is denied port entry, the Fisheries Authority will immediately notify the vessel of such a decision and communicate the decision to the vessel's flag State, relevant coastal States, the WCPFC or any other RFMO as required, relevant international organisations, and other relevant States that may have been influential in the decision.

While the FFA PSM framework does not impose a specific time frame, it is recommended that the incoming vessels submit a prior notification of port entry 48 hours in advance.

> Force Majeure and humanitarian reasons are the only exemptions to these time frames. Suppose it is agreed to allow port entry. In that case, the vessel must proceed to a designated area, and the Fisheries Authority will board or require evidence from the agent or master to verify the force majeure or distress. The vessel must be prohibited from using the port for any reason other than that claimed for force majeure.

Once the vessel is authorised for port entry, a big part of port operations and PSM is knowing what, when, where, and who is doing what.

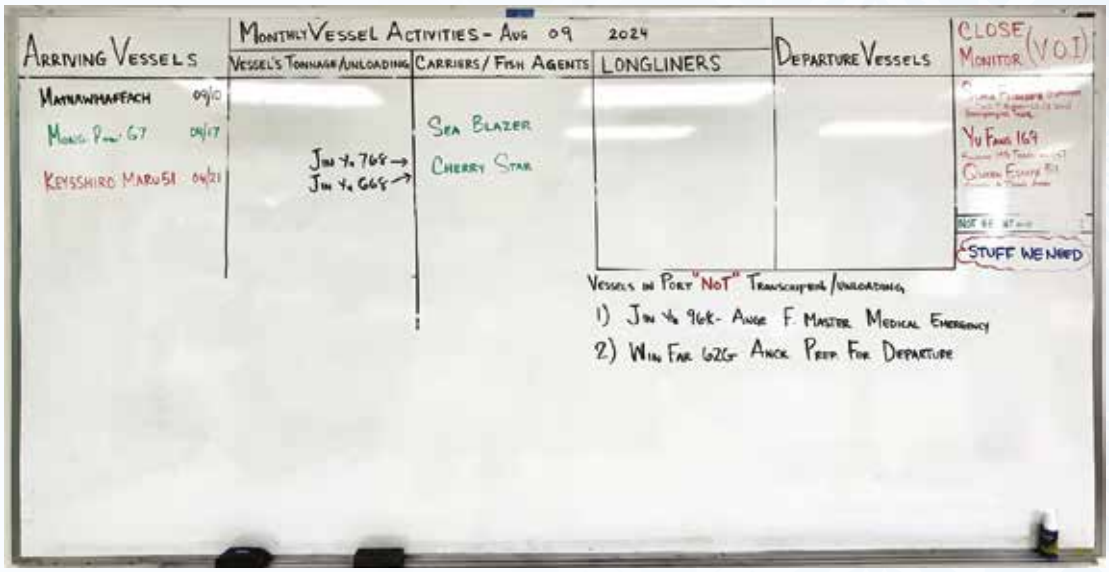
While port entry is granted when the vessel is on the WCPFC or FFA registries, port use remains subject to clearance following on-board inspections if necessary.

2.4.3.1 Port Operations Whiteboard

The arrivals, vessels in port, and departing vessels need to be accounted for and managed. To deal with these planning and logistics issues, it is recommended that the Fisheries Authority should set up a port operations whiteboard (see image below) where arriving vessels are scheduled, boarding planned boarding and logistics set up.

The maintenance of the board is the combined responsibility of the VMS and PSM boarding officers. The whiteboard is a low-cost but helpful tool that provides a snapshot of what is happening in the port to everyone in the operations office.

Whiteboard as used at the Marshall Islands Marine Resources Authority in Majuro, 2024



2.4.4 Port Use Assessment

Every incoming fishing vessel listed in the arriving section of the whiteboard should undergo a risk assessment that creates the Arriving Vessel Intelligence Report (AVIR).

The intelligence analysis and risk determination allow for the identification of risks in three different categories, including:

- *Identity* – whether the vessel is who it says it is,
- *Manoeuvring* – the vessel's activity and operations and whether these were adequately reported and
- *Licensing* – whether the vessel is allowed to be in the location it was.

2.4.4.1 Identity Analysis

The analysis begins with a clear picture of the vessel's identity, including the captain's name and nationality. The boarding officers/VMS officers perform this risk analysis and then obtain the date and last port of departure.

It includes whether the vessel can be found on various registered vessel lists mentioned above, including the relevant RFMOs list (WCPFC in most cases), the FFA Good Standing list, and/or the PNA list of Registered Vessels with corresponding IMO numbers.

The information in the arrival notification is verified against these lists. In addition, if available, the officers verify the FFA Vessel Compliance Index, which allows them to prioritise vessels with lower rankings when more than one vessel is coming to port simultaneously.

2.4.4.2 Manoeuvring Analysis

The second step of the analysis concerns manoeuvring analysis of the vessel's fishing patterns. The Fisheries Authority should use VMS data as the FFA shares near real-time VMS data among its members on all foreign-flagged vessels licenced to fish within its members' collective waters and the WCPFC VMS in the Pacific Ocean.

FFA Members also have access to a novel AIS/VMS data platform (Starboard.nz) that offers highly advanced algorithms specifically designed for fishing vessel analysis and use. The granularity of the data is generally better than that of VMS data.

Furthermore, the Fisheries Authority can fine-tune its analysis by superimposing weather (wind and wave height) and oceanographic data on the Starboard.nz platform.

Thanks to the combination of VMS/AIS data analysis, the fisheries authority can analyse a vessel's voyage to identify where the vessel was fishing and corresponding vessel movement patterns depending on the fishery (activity consistent with fishing patterns and occurring at a certain time of day depending on the targeted species are described in Chapter 2 of this publication).

The Fisheries Authority officers analyse the vessel's pattern for carrier vessels to identify any events indicating an undeclared transhipment. Once on board, the officers can verify whether the vessel declared rendezvous with other vessels during these patterns.

2.4.4.3 Licensing Analysis

Following the manoeuvring analysis, the Fisheries Authority should verify whether the vessel coming to port has the licences, fishing authorisations, transhipment authorisations, and other permits corresponding to its reported operations and the pattern detected on the VMS track analysis. That information is verified on the available registers, such as the FFA RSP, the PNA FIMS e-Reporting system (if applicable), and the Fisheries Authority local database.

2.4.5 Port Use Determination

For many ports in the region, vessel arrivals are mainly divided between:

The fishing vessels arrive to tranship their catch on carrier vessels in port, and carrier vessels arrive to load catch from fishing vessels.

Fishing Vessels are arriving to land fish, either for processing or containerisation.

It is important to note that FFA delegates were key in incorporating the definition of "landing" and "transhipment" in the FAO Voluntary Guidelines for Transhipment adopted in 2022.

Which defines:

"Landing" means all transfers of any quantity of fish on-board from a vessel, other than transhipment, including transfers of fish to a port facility, transfers of fish from one vessel to another through a port facility or other means of transportation, and transfers of fish from a vessel to a container, truck, train, aircraft, or another means of transportation.

"Transhipment" means the direct transfer of any quantity of fish on-board from one vessel to another vessel, regardless of the location of the event, without the fish being recorded as landed;

FFA members are also bound to the WCPFC definition of transhipment, "the unloading of all or any of the fish on board a fishing vessel to another fishing vessel either at sea or in port," which the context of the WCPFC includes carrier vessels and aligns with the FAO one.

As such, and in the principles of PSM, the risk analysis performed on arriving vessels by the fisheries authorities is focused on assessing the legality of the catch and operations and not allowing "port use" if the vessel's operators cannot prove the legality of the action before requesting port entry.

FFA members' advantage in risk analysis is their access to FFA tools, including FFA VMS, RSP, and the Good Standing List detailed above, as well as PNA

FIMS, where applicable. Thanks to these, they rely on something other than requesting information from flag States or RFMOs, as they often dispose of more information than the flag States themselves.

This risk analysis leads to a complete Arrival Vessel Intelligence Report (AVIR) or equivalent document that is communicated to the boarding officers. The report includes recommended boarding investigations, identified risks, and targeted recommended verifications (including log sheets, logbooks, and temperature records, as relevant).

This overall risk analysis focuses on the vessel's activity since the last time it left port. If the intelligence analysis shows no associated risks, boarding offices may still go on board to check the logbook at a minimum and verify situations on board; if nothing is found, confirm that they are authorised for transhipment or landing operations by signing and stamping the logbook.

2.4.6 Vessels Inspection at Port

FFA members maintain very different inspection coverage on incoming vessels, varying from zero to 100% inspection based on their policies and/or capacities.

Some members maintain 100% inspection coverage of all incoming vessels, including fishing and carrier vessels, and a lower figure for foreign longliners operating under charter to local fishing companies if they have not operated in other coastal states. In contrast, others authorise unloading without inspection risk analysis.

Boarding and inspection operations are prioritised based on compliance risks identified in the AVIR; trained fisheries officers should board to look for specific issues identified by the intelligence analysis. The officers should board, having with them the details of any investigation they want to pursue on the vessels and know where to gather any evidence.

The officers authorise port use on whether the identified risks or issues are cleared. The rule to be applied is that fish can only leave the vessel once officers clear it to do so.

There is a strong economic incentive for vessels to cooperate with the officer's risk analysis and inspection. Port use could be delayed if information regarding a vessel's activities is not forthcoming or when no clear explanation is given to the officers' questioning, resulting in higher costs for the vessel operators.

Well-trained and knowledgeable boarding officers are fundamental to the fisheries authority's obligations as a responsible Port State. Authorisation to Tranship or land.

2.4.7 Authorisation to use port.

Authorisation to tranship land, crew changes, fuelling, and re-provision are only given if the vessels fully comply with the issues identified by the pre-arrival intelligence analysis of problems found on board during the inspection.

Once satisfied with overall compliance and the results of their investigations, the inspection forms authorise transhipment and/or landing. The forms are then signed and stamped in the logbook on the vessel's bridge.

2.4.8 Handling of Violations and Offences Detected on Vessels in Port

a. In the event of any detected violation, the Officers should take time to establish any potential offences and ensure that all evidence on-board the vessel is seized and secured.

b. After discovering the alleged offending, the Officer should contact the head of compliance and the legal advisor as soon as possible. They should also contact other relevant port authorities to ensure a coordinated and support-ed response.

c. If a more detailed vessel search is required to secure all evidence of a potential offence, the Fisheries Officer should instruct the vessel master that no catch, documentation, records, equipment or other items be transferred onto or off the vessel unless authorised by the fisheries authority. This directive should also be reinforced in writing where possible. The Officer can note the directive in the vessel deck logbook to support this.

d. Where the Fisheries Officer has probable cause to believe that an offence has been committed, they can seize anything on-board the carrier vessel they believe might be needed as evidence in any proceeding under fisheries legislation. This includes fish, documents and equipment on-board the vessel.

e. All items seized from the vessel should be documented and photographed. The documentation should include the item's description, where it was found, when and who seized it.

f. A written receipt should be generated for all items seized from the carrier vessel, which should include the grounds (reason) for the seizure.

2.5 PSM DECISION POINTS AND COMPLETION OF THE ARRIVING VESSEL INTELLIGENCE REPORT (AVIR)

The details of all information and processes required to support PSM decisions made by Fisheries Officers are captured in the inspection forms.

Yet, it is important to ensure that the PSM processes are continuous and that all previous analyses and verifications are available to support subsequent PSM activities and decisions.

Hence, the following form associated with the AVIR is recommended. It is separated into seven sections that support the three different stages of the PSM process, and these are described in the table below.

Table 2: PSM Decision Points

PSM Decision Points	AVIR Sections
Whether to permit port entry by individual fishing vessels and carriers seeking entry to port; Whether to permit port use by individual fishing vessels and carriers granted entry to port; and Clearance for departure from port.	Part 1: Arrival Notification Part 2: Intelligence Analysis and Risk Determination Part 3: Manoeuvring Analysis Part 4: Recommended Boarding Investigation Part 5: Other Boarding verifications Part 6: Boarding party and authorisation Part 7: Departure Clearance

Each part of the AVIR form is presented at the top of the subsection with examples of the information required and then explained in detail.

The text on the left side of the page includes a detailed explanation of each process step to support the completion of the AVIR in support of fisheries authority risk assessment processes.

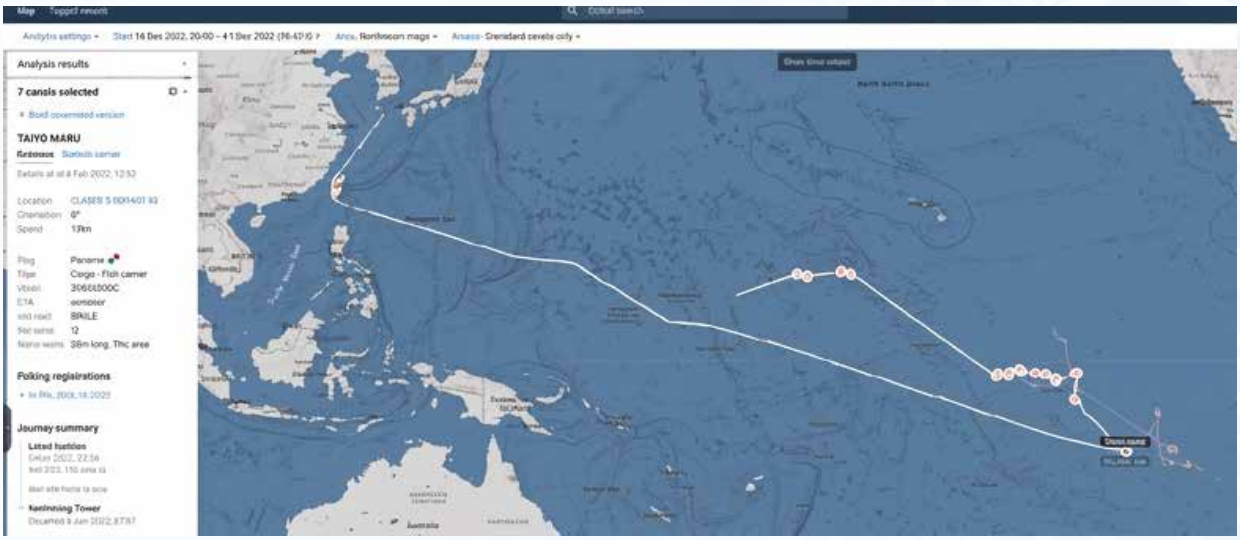
The section in orange running down the right edge of the page is intended to be a quick reference for officers to reinforce key risk assessment considerations.

2.5.1 Part 1: Arrival Notification

Example of an AVIR

Arriving Vessel Intelligence Analysis Report

PART 1: Arrival Notification					
FV Name: TAIHO MARU	**Flag:** Panama		**IRCS:** 3FSL8		**Type:** Carrier
Flag state Registration # 51220-20		**FFA Vessel Reg #** 36061	**WCPFC /IATTC VID#** 4469		**IMO#** 9459591
WCPFC Flag State Authorisation # 04-105-4444-223-1249			**FV Name:** TAIHO MARU		
Other RFMO Flag State Authorisation # IATTC #: 14341			**FV Name:** TAIHO MARU		
Master's name Hsiao Umetani	**Nationality** Japan		**Port and Date of last Departure** 30/12/2022 Busan		
Activity: ☐ Tranship ☐ Unload ☐ Receive fish (carrier) ☑ Operational Port Call					
Has the vessel entered xx|xxx|xxxx port before? ☑ Yes ☐ No If yes, note last dates: *26 Nov 2022*					
ETA of Vessel 6 Feb			**Responsible Agent** Romeo Bravo		



Explanation

AVIR Part One: Arrival Notification – This section contains information about the vessel, the arrival details and requested port activities, and the authorisations held by the vessel. All fields in this section are automatically completed based on the AREP information submitted by the vessel agent, with the exception of the following four fields:

a. **WCPFC Flag State Authorisation # and Expiry Date** – This information is obtained from the *WCPFC Record of Fishing vessels* (RFV) or *ICCAT Record of Vessels* for the vessel. Prescence in the Registers triggers port entry (in following section)

b. **Other RFMO Flag State Authorisation # and Expiry Date** – Based on the areas that the vessel has operated, checks should be made of the RFV for that RFMO to ensure the vessel was authorised by the flag State to operate in that area. For carrier vessels this will most commonly be the Inter-American Tropical Tuna Commission (IATTC). Note that the IATTC requires members to notify a time period for authorisation of transhipping but does not currently display this on its RFV records.

c. **Has the vessel entered Tarawa or Kiritimati port before?** – The previous port visits by carrier vessels can be found in the departure record information on the Fisheries Information System. If the vessel has been into port \ before then the previous port record (including analysis and inspection results) should be viewed to ensure risks previously identified are understood and considered.

Regional and sub-regional vessel records and vessel monitoring data maintained by WCPFC, FFA and PNA will be central to this verification. It is important to verify details such as port and date of last departure as this is when the last inspection should have been completed. Any inconsistencies in details sub-mitted should be noted in the form for verification prior to approving port entry or during the vessel inspection.

Additional information should be requested, as required, from vessels not on the WCPFC RFV to ensure the AVIR can be completed in full.

Arrival Notification	
Flag State Authorisation: Flag States need to authorise their vessels to operate in areas beyond national waters and within in RFMO waters. This authorisation is captured in the RFMO record of fishing vessels and needs to be checked to confirm the vessel is authorised.	**Previous Port Entry** If the vessel has entered port in before then the last AVIR completed for this port entry is an important record to inform risk assessment.

2.5.2. Part 2: Intelligence Analysis and Risk Determination

PART 2: Intelligence Analysis and Risk Determination		
Is the vessel on any IUU list? ☐ Yes ☑ No	**FFA Vessel Compliance Index** -3	**Comment:** Historical compliance index record from when the vessel was transiting in an EEZ in which it was not licenced.
VMS / AIS data available for the entire current trip?		☑ **Yes** ☐ **No** If no, then note reporting gaps during current trip
VMS Track		
		
Areas active during the current trip based on VMS data		**High Seas IATTC High Seas WCPFC**

Licensing and reporting for Vessel (from FIMS or provided by vessel)

Country of Licence	**Licence #**	**Valid From**	**Valid To**
FSMA Arrangement	N/A		

Has the vessel only conducted fishing related activities in the WCPFC?	☐ Yes ☑ No	Are activities consistent with licences held and flag State authorisation?	☐ Yes ☐ No
Is the reported catch on-board consistent with reported vessel activities?	☑ Yes ☐ No	Explain any discrepancies:	
Identity Risk Fishing Licence and Authorisation Risk Reporting Risk	**Low:** Vessel identity confirmed FFA, WCPFC and IMO. **Low:** Flag State authorisation confirmed **Low:** Vessel has provided stowage plan that identifies vessels, dates and quantities transhipped. To confirm transhipment declarations on-board		
Port Entry Recommendation (only for non WCPFC/ IATTC) vessels			☐ Yes ☐ No

Explanation

AVIR Part Two: Intelligence Analysis and Risk Determination – This section conducts a preliminary risk assessment of the vessel and ensures that it was authorised to carry out the activities it is undertaken during the current trip. All fields in this section are completed by the Fisheries Officer as explained below.

Is the vessel on any IUU list? – Checks should be made to ensure that the vessel is not on any IUU list. This check is undertaken during licensing and registration processes for all vessels that hold a licence to fish in RMI waters and for all vessels in Good Standing on the FFA Regional Vessel Register. Therefore, independent checks need only be completed for vessels that are not licenced to fish in national waters nor on the FFA Regional Vessel Register.

a. **FFA Vessel Compliance Index** – The vessel compliance index rating for each vessel is noted in the FFA Regional Surveillance Picture (RSP). This includes a comment on the reason for the rating assigned to the vessel and this should be captured in the AVIR also. If the vessel does not have compliance index rating, then the officer should enter -5 with a comment that the vessel does not appear in the RSP.

b. **VMS data available for the entire current trip?** – VMS data is available in the Trackwell System for vessels that are on the FFA RFV. If the vessel is not on the RFV, then sources for AIS data (such as Starboard) should be used to examine the available vessel positional data for the entire current trip. Note in the AVIR any gaps in the positional reporting by the vessel for further examination.

c. **VMS Track** (screenshot) – Insert a screenshot of the available VMS or AIS data for the vessel for the current trip.

d. **Areas active during current trip based on VMS data** – Based on the VMS or AIS data for the vessel for the current trip list the areas (States and high seas areas by RFMO) in which the vessel has conducted fishing related activities.

e. **Licensing and reporting for Vessel (from FIMS or provided by vessel)** – Not all vessel licences for other FFA Member States are currently available electronically. If the vessel has been conducting fishing in the EEZs or transhipments in the ports of other FFA members prior to requesting port entry, then copies of the licences (or transhipment authorisations) for these FFA Members should be requested from the vessel prior to endorsing port entry.

f. **Has the vessel only conducted fishing related activities in the WCPFC or IATTC?** – Vessels that have conducted activities outside of the WCPFC present an increased risk due to their being less available information and knowledge on these activities. The actual risk presented will depend on the area of operation and the activities conducted.

g. **Are activities consistent with licences held and flag State authorisation?** – Compare the areas where VMS/AIS data indicate that activities (transhipment or bunker activity) were carried out and confirm that licences or authorisations were held for these activities. If there are doubts then this should be confirmed on-board the vessel during the inspection, or in more serious cases port entry decisions can be deferred until this is confirmed.

h. **Is the reported catch on-board consistent with reported vessel activities?** – Catch on-board, as reported in the hatch plan (or other documents provided by the vessel) should be compared with what was reported in the AREP supporting documents. The Fisheries Officer should assess if this matches the activities that have been identified in the VMS/AIS data, especially where there are slow speed or drift events. This is just an initial examination to

inform the port entry recommendation, and a more detailed analysis is undertaken as part of the manoeuvring analysis undertaken to inform the inspection and subsequent port use decisions. Note any discrepancies that you notice. If port entry is endorsed, then any discrepancies should be examined in more detail as part of the manoeuvring analysis and followed up during the vessel inspection.

i. **Identity Risk** – Based on a comparison of the information provided by the vessel agent and information in national, sub-regional and regional registers, assess the risk that the vessel has falsified any component of its identity. The identity risk should be assessed as low, medium or high risk based on analysis of the available information. Briefly explain the reasons for your assessment. If the vessel is not authorised to operate in the WCPFC, then identity risk should be recorded no lower than medium risk and more stringent identity checks should be completed during the inspection.

j. **Fishing Licence and Authorisation Risk** – Has the vessel demonstrated that it has authorisations for all the activities (potential or actual transhipments or bunker activities) that it has carried out during the current trip? Do all the donor and support vessels that the carrier vessel has had encounters with during the current trip have authorisations for the fishing and other activities they have carried out? The Fishing Licence and Authorisation Risk should be assessed as low, medium or high risk based on analysis of the available licence and authorisation information and a comparison with the areas the vessel has operated in the current trip. Briefly explain the reasons for your assessment.

k. **Reporting Risk** – Conduct an initial assessment of whether the vessel may have conducted any unreported transhipment activities. This is based on analysis of the reported catch on-board and vessels that it has interacted with during the current trip. If catch records are available for the donor vessels, then confirm the reported catch aligns with the record of species quantity transhipped. The Reporting Risk should be assessed as low, medium or high risk based on analysis of the information reported by the vessel, compared with the AIS/VMS picture obtained.

l. **Port Entry Recommendation** – If the vessel is not on the WCPFC register, then based on the assessed Identity, Fishing Licence and Authorisation and Reporting risks, make a recommendation on port entry. If the vessel is seeking port entry in situations of force majeure (vessel or crew safety) then port entry must be endorsed. This recommendation can be either 'Endorse Port Entry' or 'Do Not Endorse Port Entry'. In the case that port entry is endorsed, no further action is required. In all cases where there is sufficient resourcing to manage the risk associated with the vessel, the fisheries authority will seek to allow port entry to facilitate in port inspections and effective action in relation to suspected cases of IUU.

    - If the port entry recommendation is 'Do Not Endorse Port Entry', then the Fisheries Officer communicates this as soon as possible to Ports Authority and vessel agent. The Fisheries also notify the flag State, the FFA Regional Fisheries Surveillance Centre (RFSC), other neighbouring port States and any coastal States within which the vessel has operated during the trip. The following steps in the AVIR process will not be required to be completed.

    - If the port entry recommendation is to 'Endorse Port Entry' then the Fisheries Officer will continue with the following AVIR steps. No further action is required, and the Ports Authority will continue with arranging port entry for the vessel.

As Much as Possible Examine:

- Is the Carrier on any IUU list?
- What is the compliance Index rating of the vessel?
- VMS and/or AIS data should be available for the entire current trip.
- Screenshot vessel movements during the trip as shown in VMS/AIS data.
- Identify the areas the vessel has been active during the current trip (national and RFMO).
- Check the authorisation and licences held permit the vessel operations as indicated in VMS and/or AIS data in the areas of operation.
- Check the catch on-board consistent with reported activities.

For carriers:

- Check the vessels hold licences and authorisations during the trip prior to transhipment.
- Check there are not any gaps in
- donor-vessel reporting where potential non-compliant fishing or related activities could have occurred.

2.5.3. Part 3: Manoeuvring Analysis

PART 3: Manoeuvring Analysis	
Does an assessment of areas of operation, slow speeds, drifting events, speed and distance between events, and proximity analysis identify any vessel activities, unreported port calls and manoeuvring that is not compliant with vessel authorisations, licences or permits?	☐ Yes ☐ No
Encounters	2 February (High Seas IATTC). 3 February, 4 February, 5 February, 6 February, 8 February (High Seas IATTC/WCPFC Overlap). 9 February, 10 February, 11 February, 13 February, 14 February, 15 February, 16 February, 17 February, 21 February, 22 February, 23 February, 24 February (High Seas IATTC). 1 March 2023, 2 March 2023, 3 March 2023, 4 March 2023, 5 Mar 2023 (WCPFC High Seas).
Unexplained Slow Speeds	1 February and 6/7 February (High Seas IATTC/WCPFC Overlap). Check vessel logbook and engineers logbook.
	Screenshots of Operations of Interest During Current Trip (Concentrate on those that do not align with reported activities or that indicate possible non-compliance)
Compliance Risk	☐ Low ☑ Medium ☐ High
Based on	Unexplained Slow Speeds

Explanation

AVIR Part Three: Manoeuvring Analysis – Following a recommendation to endorse port entry, a more detailed analysis of the vessel movements and activities during the current trip should be undertaken.

a. **The Manoeuvring Analysis** is a detailed analysis to ensure that the activities undertaken in the current trip were compliant with the requirements of coastal States (for any activities in any EEZ) and the vessel's flag State (including RFMO requirements for any activities on the high Seas).

b. **The Manoeuvring Analysis** should examine the areas of operation during the current trip to identify any potential unreported port calls or operations in closed or other areas where the vessel may not be authorised to operate.

c. **For Fishing Vessels** depending on the gear, is relatively easy to identify fisheries manoeuvring based on track and speeds.

d. **For Carriers:** Depending on their size and sea conditions, carrier vessels generally transit at speeds between 8kn and 12kn. They will generally transit to an area to conduct transhipments and fishing vessels will generally move to the carrier vessel (almost always in port) once the carrier vessel is in the area. However, for at sea transhipments, the carrier may also move closer to fishing vessels with transhipments generally occurring in groups. This movement between individual vessels or groups of vessels will generally be at normal transit speed. So, the manoeuvring analysis should look for and examine periods of slow speed (less than 2kn) or periods of drift (movement consistent with existing currents and wind), as these are speeds at which transhipments and other interactions can occur.

e. **The manoeuvring analysis** should also assess if there are any concerns with regards the accuracy of the positional data reported by the vessel during the current trip. Look for anomalies in the reported positional data, do all reported positions across different data sources (AIS/VMS) align and make sense?

f. **Proximity analysis** should be undertaken at the time of the identified slow speed events to identify any vessels in the vicinity that the vessel may have interacted with. Fishing and other vessels identified through the proximity analysis should be cross checked with the hatch plan or other documentation submitted by the carrier vessel to identify any potential unreported transhipments or other interactions.

Any identified periods of slow speed or drifting that do not align with vessel inter-actions reported by the carrier vessel should be noted for further investigation during the inspection.

Where possible, the activities of the fishing vessels that have interacted with the carrier vessel (both reported and identified through manoeuvring analysis) should be examined to ensure the legality of the catch transhipped. A similar analysis should be undertaken to look for periods of slow speeds or drifting at which possible encounters may occur as well as analyse speed at which fishing activities can occur.

During the manoeuvring analysis the Fisheries Officers should also examine the carrier vessel transit speeds to identify any transits that would require speeds in excess of its normal transit speeds. These may indicate some manipulation of vessel positional reporting.

If the fishing vessels are PNA authorised, then Fisheries Officers may be able to examine the vessels e-Logs on the PNA FIMS database. Where this information is available then Officers should compare the logsheets of the donor vessels with the reported transhipped catch to ensure consistency and accuracy of reporting.

Manoeuvring Analysis

As Much as Possible Examine:

Examine Areas of Operation
- Possible Port Calls
- Pattern of Behaviour
- Slow Speed
- Drifting (if e-reporting)
- Proximity Analysis
- Unreported Encounters
- Donor Vessels
- Examine Areas of Operation

Fishing Events
- Slow Speed
- Drifting
- Other Encounters
- Electronic Log-sheets (if e-reporting)
- Observer reports
- Does the Manoeuvring Analysis highlight any potential unreported or unauthorised activities by the vessel or any vessels it has interacted with?

2.5.4. Part 4: Recommended Boarding Investigations

Recommended Boarding Investigation

PART 1: Arrival Notification		
Risk	**Recommended Checks**	**Investigation Results**
Identity	Confirm Vessel Markings (Consistent with Identity)	
Identity	Confirm Captain name and nationality	
Fishing Licence and Authorisation:	Verify licences on-board and/or flag State Authorisation (high seas permit including conditions)	
Fishing Licence and Authorisation:	Potential interaction with LUNG SOON No 212 16 Feb 2023 not reported. Potential interaction with LUNG SOON No 116 16 Feb 2023 not reported. Both less than 3 hours. Check deck logbook and establish the purpose of the interactions.	
Manoeuvring Analysis Compliance Risk	Unexplained slow speeds on 1 February and 6/7 February 2023. Check deck logbook for noted vessel activities. Check engineer's logbook for any temperature deviation in the holds that could indicate catch coming on-board.	

Explanation

AVIR Part Four: Recommended Boarding Investigation – Based on the assessed Identity, Fishing Licence and Authorisation, Reporting and Manoeuvring Analysis Compliance Risks identified in earlier sections, transfer any issues identified and recommend specific checks that should be completed on-board the vessel during the carrier vessel inspection.

a. In the case of risks associated with vessel identity, checks should be undertaken of vessel records, most of which will be found on the bridge of the vessel. On many vessels the captain will have an office attached to or near their quarters, which may also contain other documents that can help confirm identity and activities. Checks should also be made of the vessel markings to ensure these comply with requirements and Fisheries Officers should look for any sign that the identifiers may have been altered. The IRCS is required to be displayed on the vessel's hull or superstructure, on both port and starboard and is required to be no less than 1.0 metre high on all vessels over 25 metre length. The name of a vessel must also be marked and be clearly visible on the exterior of both bows and on the stern of the vessel.

b. For risks associated with the fishing licence and/or authorisation, physical copies of the licences and authorisations produced with the AREP should be verified while on-board the vessel. Ensure the details match the vessel details submitted with the AREP and found on national, sub-regional and regional registers and confirm any conditions attached to the licences and authorisations. If available on-board, Fisheries Officers should also verify licences or authorisation details of any donor vessels. These will generally be kept with the transhipment declarations for the interactions with each vessel.

c. With any reporting risks, check and ensure that the carrier vessel has transhipment declarations for all reported transhipments and any potential transhipments identified through pre-boarding analysis. These can be compared with other records maintained on-board, such as mate's receipts that will record the agreed quantities. These will generally be kept on the bridge. For suspected unreported transhipments, the bridge logbook and the chief engineer's logbook are two key sources of information that should be checked. The bridge logbook provides a useful summary of activities at sea and records routine navigational information and meteorological information. There may also be other logbooks and records maintained on the deck of the vessel and in the captain's quarters. The chief engineer's logbook records hold temperature records at set intervals so can be a useful indication of when the olds are open. This logbook is generally kept in the main control space of the engine room on the vessel.

d. For risks identified in the Manoeuvring Analysis, periods of interest (based on events like unexplained slow speed or drift events) should be examined in records kept on-board the vessel. Transhipment records should be examined and the level of verification of these records undertaken should be dictated by the level of risk identified in the pre-boarding analysis. Again, key records to examine on-board include the bridge logbook and the chief engineer's logbook, but also look for other records that may be kept on-board the vessel.

e. Activities recorded in the bridge logbook during periods of interest should be examined and compared with the activities identified in the Manoeuvring Analysis. Similarly, the chief engineer's logbook can be examined for any identified periods of interest with particular attention paid to increases in temperature during these periods that could indicate the receipt of fish that has not been declared or reported.

Recommended Boarding Investigation

This takes the results of the analysis undertaken in response to the AREP and considers the checks required, and evidence available, on-board the carrier vessel.

Key records on-board the vessel include:

- Physical copies of licences, authorisations confirming vessel identity details are correct.
- Physical markings on the vessel and identity details on documents on-board vessels.
- Records of transhipment declarations on-board.
- Hatch plans and mate's receipts for transhipments.
- Deck logbook that notes activities at sea and records routine navigational information for the vessel
- Chief Engineers logbook and other hold/well temperature records that can indicate catch being moved into, or out of the holds/wells.
- The GPS chart plotter, VMS Mobile Transmitter Unit (MTU) and other positional data records available on-board the carrier vessel.

These records can be checked and compared

2.5.5. Part 5: Other Boarding Verifications

PART 5: Other Boarding verifications				
Element	**Requirement**	Yes	No	Comments
Vessel Exterior Markings	Markings visible			
	Markings consistent with details provided			
Catch Log Sheet	Approved format and version used			
Captain	Captains name correspond to the vessel crew list			
Hatch/Stowage plan	Stowage plan is in line with log sheet or for carrier vessels is consistent with other documentation on-board.			
Carrier Specific	Estimated quantity links to provider FV's logsheets.			
Any other issues identified on Board?				

Explanation

AVIR Part Five: Other Boarding Verifications – This section records any specific issues that the Fisheries Officer identifies on-board. The catch log sheet section is specific to fishing vessels so is not completed for carrier vessel inspections.

a. **Vessel Exterior Markings** – Specific checks are carried out on the vessel exterior markings to ensure they are clearly visible. For carrier vessels this examination is best started in the boarding boat before you board the carrier, where you can examine and photograph vessel bow and stern markings to ensure they are clearly visible and comply with requirements. The results of this visual inspection are recorded in this section of the AVIR.

b. **Hatch/Stowage plan** – The hatch/stowage plan should be compared with other records on-board, such as transhipment declarations, mates' receipts and other logbooks and reports on-board to ensure that the quantities and records of catch on-board are consistent. This can also be compared with logbooks and other records, such as the bridge logbook, which notes vessel activities and manoeuvring. The results of this comparison are recorded in this section of the AVIR.

c. **Estimated quantity links to provider FV's logsheet**s – Where e-Logs are available for donor vessels then this information should be recorded or accessed during the inspection and used to verify records on-board the carrier vessel. The accuracy of the reported quantities should be recorded in this section of the AVIR. Note any suspected issues with reporting for verification by port monitors.

d. **Any other issues identified on Board?** While on-board the vessel, the Fisheries Officer should be aware of any potential offending and associated evidence that can supports proving this. Make note of any potential issues and photograph or obtain copies of as many records as they can on-board for further analysis post-inspection. Any other issues (real or potential) can be recorded in this section of the AVIR.

Other Boarding Verifications

- When checking vessel exterior markings, so may be easiest to examine from the boarding boat before embarking.
- **The hatch plan** and other documents submitted with the AREP can be com-pared with vessel records on-board, such as transhipment declarations, mate's receipts and other activity records main-tained on-board.
- If any donor vessels are **electronically reporting in PNA FIMS** then this catch and effort data can be used to verify quantities in the hatch plan.
- One of the most important information sources that can help inform inspections is the assessments of the inspectors during previous inspections. Try to note where there may be areas of high risk of non-compliance on board the vessel to inform any subsequent vessel inspections.

2.5.6. Part 6: Boarding Party and Unloading Authorisation

Part 6: Boarding Party and Unloading Authorisation

PART 6: Boarding party and unloading authorisation			
Officer/s		**Captain**	
Date / Time			
Port Use authorised			
Yes ☐	Transhipping to	1st	2nd
Notes			

AVIR Part Six: Boarding party and authorisation – Following the completion of the inspection, if the Fisheries Officer is reasonably satisfied that there is no evidence of any IUU fish on-board the vessel or that any IUU activities have been carried out by the carrier vessel, then they should authorise port use. The Officer and vessel captain will sign the Boarding party and authorisation section of the form. The form is dated, and then port use can commence.

If transhipment or landing monitors are part of the fisheries authorities work, then these activities should only be authorised once the monitoring activities have been arranged.

a. **Port Use is only authorised after inspection** – Any transhipments or landing can only commence once port monitors have been planned and deployed, and each donor vessel cleared.

b. **The Fisheries Officer will also sign the deck logbook on-board the unloading vessel if port use is authorised.**

c. Suppose the Fisheries Officer believes there is evidence of IUU fish on-board the vessel or that IUU activities have been carried out by the vessel. In that case, they will not authorise port use. The officer should secure as much evidence as possible (photographs and physical evidence) and instruct the carrier vessel master that no catch will be unloaded. No records will be removed from the vessel pending further instruction from Fisheries Authority. TheOfficer should liaise with the Legal Counsel on the next steps. The Fisheries Officer should note all actions and statements made on-board.

Other Boarding Verifications

Where Fisheries Officer believes that there is evidence of IUU fish on-board the vessel, or that IUU activities have been carried out by the vessel:

- The Fisheries Officer should issue a verbal directive that no records, documents or catch shall be removed from the vessel without the authorisation of Fisheries Authority.
- Make sure any evidence is documented (where it was found, when it was found, what it is) and photographs are taken of evidence where it was discovered
- Secure all evidence of potential or al-leged offending. This could include catch on-board, vessel reports, documents and other records, and crew and observer statements.

Notify Legal Counsel as soon as possible.

2.5.7. Part 7: Departure Clearance

Part 7: Departure Clearance

Departure advised with 24h Notice?	☐ YES	☐ NO	Note	
Date of departure dd/mm/yy			Time of departure	
Observer on board	**Name**		Trip Details	
	Safety briefing		No alcohol policy	
	Briefing of master		Accommodation up to standards	
Estimated Quantities of species to be retained on board (or negative report if no catches)				
Species	**Estimated total weight (kg)**		**Presentation of fish/frozen/ discard**	
Captain / Master Name	Nationality / ID		Signature	
Cleared to depart	☐ YES	☐ NO	Reasons	
Name of officer			Date and Stamp	
Notes				

Part Seven: Departure Clearance – Once the carrier has completed its approved activities in port and has notified departure, a departure clearance (inspection) must be completed.

a. The vessel is required to provide 24 hours' notice of departure to allow for the inspection to occur. This notification should be accompanied by copies of the cargo manifest, full hatch plan or equivalent documents. If the vessel has not given 24 hours' notice, or not provided the required information then the Fisheries Officer can issue a directive that the vessel remain in port until all information is provided and the departure clearance has been completed.

b. Details of any Observer embarked on-board the vessel should be noted, along with the briefings provided. The Fisheries Officer should also check and ensure that the Observer accommodation is up to standard (officer level accommodation) and ensure adequate food and medical facilities are on-board.

c. Records of the estimated quantities of species on-board the carrier vessel should be recorded and compared with the port monitoring records, transhipment declarations and mates' receipts to confirm accuracy.

d. If all checks during the departure clearance are okay, then the Fisheries Officer authorises vessel departure. This is noted on the AVIR and by signing in the carrier vessel deck logbook.

e. If there are any concerns related to the checks carried out during the departure clearance in relation to:

- Catch retained on-board;
- Any activities carried out in port, or
- The safety of the observer already, or being, embarked on the carrier vessel;

The officer will not authorise port departure until such time as they are satisfied that the issues have been resolved, or appropriate action has been taken by Fisheries Authority. A directive should be issued by the Fisheries officer that the vessel shall not leave port until the departure clearance has been received. The officer should notify the Legal Counsel and Ports Authority of the decision.

Departure Clearance

If there are any concerns with any of the checks undertaken, then the vessel should not be allowed to depart port until these have been resolved to the satisfaction of the Fisheries officers:

- The purpose of the departure clearance is to confirm the quantities and legality of any catch on-board the carrier vessel before it leaves port.
- It also supports observer safety by ensuring key checks are made, and briefings given before the vessel leaves port.
- **For Carriers:** A copy of the cargo manifest, full hatch plan or equivalent document should be checked against documentation on-board the vessel.

2.6 STANDARD OPERATING PROCEDURES

2.6.1 SOP1: Vessel's arrival notification and port entry

Log in and follow the instructions in the Web App

2.6.1.1 Manual Procedure

Responsibilities: Intelligence Analysis VMS team Assuming an agent is used

Step	Action	Vessel	FA
1	Agent/Vessels advice the fisheries authority with at least 48 hours prior to the port arrival of the vessel	X	
2	The Fisheries Authority acknowledges reception and starts the process.	X	X
3	The Fisheries Authority checks on WCPFC or IATTC portals, as well as VMS / FIMS portal and assesses the legality of the vessel via the described analysis and a report is made under the template 1 – Arriving Vessel Intelligence Report		X
4	If the Fisheries Authority finds reasons to deny port entry (i.e. vessel in IUU list or other cases). It communicates this as soon as possible to Flag state, Line Agencies and Agent		X
5	The Fisheries Authority authorises port entry, and advise the Agent. Port Use is only authorised after inspection and against the presence of monitors.		X

2.6.2 SOP 2: Boarding, Inspection and Port Use Authorisation

2.6.2.1 Using the FFA ePSM tool

Log in and follow the instructions in the Web App

2.6.2.2 Manual Procedure

Responsibilities: Boarding team

Step	Action	Agent	FA
1	Based on the intelligence provided by SOP 1 the boarding and inspection would be targeted under the results	**X**	**X**
2	Boarding Officer gets the Intelligence Analysis Report, the Inspection Checklist (standard) or a future App		**X**
3	Agent advices of ETA for boarding party and either officer join them or go on their own boat (preferred)	**X**	**X**
4	Officers board the vessels and conducts vessel arrival inspection using the Intelligence Analysis Report, the inspection form		**X**
5	Based on findings the FA either: a) Authorises unloading (landing/ transhipment) or b) deny it.		**X**
5.a	If a) Authorises, then maintains a copy of the i. filled form ii. the logsheet iii. the hatch plan iv. Other documentation v. returns to office and files documentation vi. advice monitors to be deployed to control transhipment volumes		**X**
5.b	If b) it denies it, it communicates immediately the legal section, starts report and communicates to maritime Police		**X**
6	If landing/transhipment is authorised, monitors are deployed to control transhipment volumes		**X**

2.6.3 SOP 3: Monitoring in Port

2.6.3.1 Transhipments

Step	Action	Vessel	FA
1	Vessel provides copies of: a. Mates receipt b. Hatch Plans of carrier prior and after the transhipment	X	
2	The Monitors function are: a. Record estimates of catch volume and composition b. Record the presence of species of interest c. Record potential MARPOL contraventions d. Provide the data to the compliance unit		X
2	The Fisheries Authority Compliance a. Crosscheck for general consistency with log-sheet volumes and monitors data b. Receives and stamps original documentation for approval and files documentation c. If needed, sends copy to Flag State		X

2.6.3.2 Landing for containerisation

Step	Action	Vessel	FA
1	Vessel/Agent provides copies of: a. Summary of volumes landed per species per day b. Summary of volumes and species per container including container ID c. Empty and full weight per container from port scale and weight limits by the shipping line. If no port scales not working then winch scales is to be used for best estimates	X	
2	Monitors function are: a. Confirm catch volume and composition from scales b. Record the presence of species of interest c. Record potential MARPOL contraventions d. Provide the data to the compliance unit		X

2	The Fisheries Authority Compliance a. Crosscheck for general consistency with log-sheet volumes and monitors data b. Receives and stamps original documentation for approval and files documentation c. If needed, sends copy to Flag State d. Prior to authorising loading in container vessel request copy or Bill of lading and confirms weights per container		**X**

2.6.3.3 Landing for processing

Step	Action	Vessel	FA
1	Company provides copies of: a. "Weight in" records per species per day b. If containers are used for temporary storage, then empty and full weight per container c. Summary of received volumes per specie per vessel	**X**	
2	Monitoring function are: a. Confirm catch volume and composition from scales b. Record the presence of species of interest c. Gets copy of processor stowage plan d. Provide the data to the compliance unit		**X**
3	The Fisheries Authority Compliance a. Crosscheck for general consistency with log-sheet volumes b. Crosscheck for general consistency with monitors data c. Receives and stamps original documentation for approval. d. Returns to office and files documentation e. If needed, sends copy to Flag State		**X**

2.6.4 SOP 4: Vessels Departure Clearance

2.6.4.1 Using the FFA ePSM tool

Log in and follow the instructions in the Web App

2.6.4.2 Manual Procedure

2.6.2.2.1 Fishing Vessels Departure Clearance Process

Step	Action	Vessel/ Agent	FA
1	Vessel/Agent advice to the Fisheries Authority with at least 24 hours prior to port departure of the fishing vessel	X	
2	The Fisheries Authority a. Boards the fishing vessel with the AVIR and inspects wells and dry lockers for catch retained and records species and estimated volumes based on masters appraisal b. Gets captain signature on the form c. Returns to office and files documentation d. If needed, sends copy to Flag State		X

3.2.4.2.2 Carriers Departure Clearance Process

Step	Action	Vessel/ Agent	FA
1	Vessel/Agent advice the Fisheries Authority with at least 24 hours prior to port departure of the carrier. Provides copies of cargo manifest, full hatch plan or equivalent document	X	
2	The Fisheries Authority a. Finds the mates receipts for each of the Fishing Vessels that had transhipped to that carrier and the post transhipment carrier's hatch plan collected under part 2 of this SOP b. Crosscheck randomly the information in those documents with the carriers cargo manifest, full hatch plan c. In case of differences officer investigates the reasons and if those are not fully explained, it communicates with Port authority and stops the departure of the carrier until the differences are cleared d. Returns to office and files documentation e. If needed, sends copy to Flag State		X

2.6.5 Intelligence Analysis Report Template

Part 1: Arriving Vessel Intelligence Analysis Report

PART 1: Arrival Notification			
FV Name	**Flag**	**IRCS**	**Type**
Flag state Registration #	**FFA Vessel Reg #**	**WCPFC #**	**IMO#**
Master's name	**Nationality**	**Port and Date of last Departure**	
Activity	☐ Transhipment ☐ Unload ☐ Receive fish (carrier) ☐ Operational Port		
Timeframe required: ☐ **48 hrs** ☐ **72 hrs**	Notes	Application complete ☐ Yes ☐ No	Need to re-submit? ☐ Yes ☐ No
ETA of Vessel	6 Feb	Responsible Agent	
ETA of Fisheries Boarding Party		Time	

Part 2: Intelligence Analysis and Risk Determination

PART 2: Intelligence Analysis and Risk Determination			
FFA Vessel of Interest ☐ Yes ☐ No	**FFA Good Standing** ☐ Yes ☐ No	**FFA Vessel Compliance Index**	
Identity Risk	**LOW: Vessel identity confirmed FFA, WCPFC and IMO**		
MTU is functioning	☐ Yes	☐ No Manual Record should be available and updated	
VMS Track (screenshot)			

FIMS licensing and reporting

FIMS licensing and reporting			
Country of Licence	**Licence #**	**Valid from**	**Valid to**
FSMA arrangement **Fishing Licence and Authorisation Risk** **Reporting Risk**	☐ Low ☐ Low	☐ Medium ☐ Medium	☐ High ☐ High
Manoeuvring Analysis (sets determinations, Drifting, Speeds, courses, distances travelled in between set, etc)			
Screenshots of identified Operations			
Operations Compliance Risk	Low	Medium	High

Part 3: Recommended Boarding Investigation

PART 3: Recommended Boarding Investigation		
Risk	**Recommended Checks**	**Investigation Results**
Identity		
Fishing Licence and Authorisation		
Operations compliance		
Reporting		

Part 4: Other Boarding verifications

PART 4: Other Boarding verifications				
Element	**Requirement**	**YES**	**NO**	**Comments**
Vessel Exterior Markings	Markings visible	☐	☐	
	Markings consistent with details provided	☐	☐	
Catch Log Sheet (if not using e-log)	Approved format and version used	☐	☐	
Captain	Captains name correspond to the vessel crew list	☐	☐	
Hatch/Stowage plan	Stowage plan is in line with log sheet or for carrier vessels is consistent with other documentation on-board	☐	☐	
Carrier Specific	Estimated quantity links to provider FV's logsheets	☐	☐	
Any other issues identified on Board?				

Part 5: Boarding party and authorisations

PART 5: Boarding party and authorisations			
Officer/s		**Captain**	
Date/Time			
Port Use authorised			
Port Use authorised	**Transhipping to**	1ST	2ND
Port Use authorised	**Landing to**	1ST	2ND
NO	**Summary Reasons**		

Part 6: Departure Clearance

PART 6: Departure Clearance				
Departure advised with 24h Notice?	YES ☐	NO ☐	Note	
Date of departure dd/mm/yyyy			Time of Departure 00:00	
Observer on board	Name		Trip Details	
	Safety briefing		No alcohol policy	
	Briefing of master		Accommodation up to standards	
Estimated Quantities of species to be retained on board (or negative report if no catches)				
Species	**Estimated total weight (kg)**		**Presentation of fish/frozen/ discard**	
Captain / Master Name	Nationality / ID		Signature	
For official use only				
Cleared to depart	YES ☐	NO ☐	Reasons	
Name of officer			Date and Stamp	
Notes				

Glossary of Abbreviations

AREP	Advance Request for Entry into Port
AVIR	Arriving Vessel Intelligence Report
CMM	Conservation and Management Measures
e-PSM	Electronic Port State Measures
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization
FFA	Forum Fisheries Agency
FIMS	Fisheries Information Management System
IATTC	Inter-American Tropical Tuna Commission
ILO	International Labour Organization
IMO	International Maritime Organization
IUU	Illegal, Unreported, and Unregulated (fishing)
MCS	Monitoring, Control, and Surveillance
PSMA	Port State Measures Agreement
PSM	Port State Measures
RFMO	Regional Fisheries Management Organization
RMCSS	Regional Monitoring, Control, and Surveillance Strategy
VMS/AIS	Vessel Monitoring System / Automatic Identification System
WCPFC	Western and Central Pacific Fisheries Commission

Notes

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