Longline
Observer Guide

2007 Forms Edition
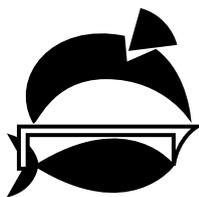
Longline Observer Guide

Deirdre Brogan, Siosifa Fukofuka and Peter Sharples

Oceanic Fisheries Programme

Original text: English

First published 2004
Second edition 2009

Contents

This Longline Observer Guide should only be used by longline observers who are filling in the Revised Dec. 2007 SPC / FFA Regional Longline Observer Forms.

Using the information provided in this Guide to fill in other editions of the longline observer forms may result in data errors. Revised editions of this Longline Observer Guide will be circulated when the observer forms are further revised.

Introduction

Observers collect valuable fisheries information which cannot be collected elsewhere. They provide much of the information needed to both understand and manage the fishery and help enforce legislation. The data is expensive to gather in terms of both funding and work hours. It is therefore important that observer forms are filled in accurately to ensure that the collected data is of high quality and can be used for the intended purposes.

> *Follow the simple instructions in this section to ensure good,*
>
> *clear data is collected every time.*

Form filling

≫ Take enough forms

Observers are responsible for ensuring they take enough forms to sea. They also need to make sure that they take the **most current edition** of the observer forms to sea (see **Form edition** below). **Observers should check the forms before departure** to make sure that they have been given the correct ones. Observer coordinators and SPC staff should ensure that there are enough of the correct observer forms available for all departing observers.

≫ Observer workbook

Each *Longline Fisheries Observer Workbook* covers **15 days** at sea. Observers must take enough workbooks to cover the expected duration of the trip plus at least one spare workbook. Return unused workbooks to the observer programme when the trip is finished.

? *I only did a short trip of 10 days.*
Now I am going out to do another trip.
● *Can I use the same workbook?*

No. Always start new trips in new workbooks. *Only use the same workbook more than once if there is an emergency.* If more than one trip is recorded in the same workbook, things can get mixed up. For instance, the GEN-3 form may be forgotten during the second trip because one was already filled in during the first trip.

However, if observers find they need more forms while out at sea, they can use a workbook that they have already used. First remove all the completed forms from the workbook before starting to record another trip. All the forms for the first trip should be packed together safely.

Starting a second trip in a workbook to save paper is a noble idea, but observer data is too valuable to risk the problems this may cause.

» *Form edition*

The form edition is marked on the upper-left-hand corner of all observer forms and indicates the date the form was last reviewed.

SPC/FFA REGIONAL LONGLINE OBSERVER		FORM LL-1
GENERAL INFORMATION		
REVISED DEC. 2007		

Observer forms are usually revised every two years, often in December, by the Data Collection Committee (DCC). This committee is made up of staff from SPC and FFA and invited members. The DCC report outlines the recent changes that have been made to observer forms and other tuna data collection forms. It is available on SPC's website http://www.spc.int/OceanFish/Docs/Statistics/collection.htm.

The most current editions of observer forms are marked **Revised Dec 2007.**

? *Which form edition do I use?*

It is important to use the most current forms. Keep using the current form edition until the new form edition is introduced. Do not go back to using any of the older editions from that point on. Take time before departing to check that no older form editions have been picked up by mistake. If there are older editions in the office talk to the observer coordinator about it. All older editions should be dumped.

? *I can't find any current editions of the forms. Can I use some of the old ones?*

No. Old forms should be thrown out and observers should not have access to them. If no current forms are available at the observer office, photocopy the most current forms. Remember to get a copy of the instructions for each type of form. The most current observer forms are available from SPC's website, or inside the printed copy of the DCC report, or on the CD copy of the DCC report. This CD is generally sent to all coordinators once the DCC report is complete.

? *Help! I'm at sea and I've got the old forms.*

If you do find that you have some of the old observer forms with you, don't panic. Fill in the forms exactly as they appear. Follow the format and codes outlined on the form. Don't try to reformat old forms so they look like new forms, and don't use new codes on old forms. For example, the basket tally was added to the bottom of the LL-4 form for the 2000 form edition. If you find that you have the 1998 LL-4 form edition, then there is no need to record a basket tally on your form. Just fill in the form as it is. Use the instructions on the back of the form to guide you.

? *I'm at sea and I have run out of forms. What do I do now?*

First, try to avoid this problem. Observers should make sure they have enough forms with them for the duration of the trip plus at least one extra workbook. However, if observers do run out of forms, they can use ordinary paper to 'make up' forms and use these to fill the information in. But the data from the made-up forms must still be submitted on the standard observer forms. The observer will

have to spend time back on shore transferring the data from the made-up forms to the standard forms. Observer coordinators are requested to only accept observer data on standard forms.

Caution! In case of any potential compliance issues, any made-up forms used to record data should be given to the observer coordinator for safe-keeping.
Caution! Normally observers are cautioned against re-writing data (see 'Do not re-write data', page 9).

≫ *Mixed form editions*

Observers should avoid mixing forms from different editions (or revision dates) during one trip. Be careful not to carry waterproof LL-4 forms that are marked with a different form edition from the workbook forms. Data collected using mixed forms is difficult to analyse. Some data collected using mixed editions of forms may not be utilised by data users, and the observer's efforts will be wasted. However, if the worst happens and an observer is at sea with mixed editions of forms they should fill in the forms as they find them, using the format and codes marked on the form. Do not attempt to re-format the forms and do not use new codes on old forms. Some data fields may not make sense when mixed editions of forms are used. In this case, just put a dash in the data field if there is no information for it. Make a comment on the form or in the trip report mentioning why the information was not filled in.

≫ *Instructions for filling in forms*

On the back of every observer form, there are detailed instructions about what information should be recorded for each data field. Read these instructions carefully to find out exactly what data to collect. Always read the instructions thoroughly when new forms are issued because there may be changes to the instructions that change the type of data to be collected or the way it needs to be collected.

> *Each small box on a form is called a* **data field**. *The information collected in each data field is defined by the data field header, which is written inside the data field itself or at the start of the row or column.*

≫ *Fill in forms only when onboard the observer's host vessel*

Observers should start filling in their diary and forms as soon as they get onboard their host (or catcher) vessel. The first data fields to be filled in will be the departure port, date and time on the LL-1 form. Form filling will then continue until the trip ends and the observer leaves the host vessel. The last data fields to be filled in will be the return port, date and time.

Observers are not required to fill in forms when onboard a transit vessel. The only exception to this is the '*Trip Reconciliation*' form, which is at the back of the observer workbook. (This guide does not explain how to fill in the '*Trip Reconciliation*' form, but the workbook itself includes a simple explanation.)

≫ *Fill in all forms*

All the forms required during the trip are supplied in the longline forms booklet, or as a waterproof pad. At least one of each type of form must be filled in during every trip. If there is no relevant information to fill in for a particular form, make a comment on the first page of that form stating the reason. For instance, if no pollution is observed, make a comment such as *"No pollution observed this trip"* on the first GEN-6 form in the first workbook. Then the debriefer knows that no forms were forgotten.

The total number of each form type that the observer needs to fill in is explained in the sections describing each form.

≫ Fill in <u>all</u> required data fields

Every data field must be filled in or a dash must be put in the field. Leaving data fields blank does not tell us if the information was not available or if the observer was unable to get it. *A dash in the data field means the observer tried to get the information but could not.* The information might not have been available, the language barrier may have made it difficult to get, or the observer may need extra guidance on how to collect the data. Whatever the reason, if a dash is inserted in a data field, always make a note in the comments section of the form or in the trip report to explain why the information was not filled in. If the debriefer can see why the data field was dashed, they can confirm that the observer has completed the work or, if necessary, give them further help on filling in the form.

Dashes are only required on lines / rows that have other information on them. Totally blank lines / rows do not require dashes.

≫ Choose the best or most informative code

Each data field should have only one answer (except for comment data fields). Sometimes the observer might think that there are two possible answers. **Choose the best or most informative code when choosing between codes.**

For instance, if a shark-damaged yellowfin was retained onboard and then eaten by the crew, which fate code will be recorded, RSD – (retained shark damage), or RCC – (retained crew consumption)? In this example, it might be better to record the RSD fate code, and note the RCC fate code in the comments section, as the yellowfin was probably only eaten by the crew because it was shark damaged. Therefore, the RSD code is the most informative code.

≫ Only record <u>directly observed</u> information

All information recorded on data forms should be information that has been directly observed by the observer. Do not copy information from the vessel's records on to the observer forms unless this is clearly requested on the observer form. If observers do want to record information that they did not personally witness (they missed a set position, for instance) they **must** make a comment on the form, stating where the information came from.

Caution! Experience shows that vessels can give observers incorrect data. Such faulty data can harm all of the observer's data. It may look like falsified data, leading to the loss of further contracts for the observer. Avoid this by **always** commenting if the information recorded was not directly observed. However, observers are paid to observe vessel activity and so generally they should not be recording information that they have not directly observed.

≫ Record repeating values fully

Do not use the ditto symbol (″) on forms when recording the same repeating values. There should be enough time to fill in every data field properly, which will help improve the clarity and readability of the form. Observers on longline vessels may be tempted to use the ditto symbol on the LL-4 form when the same species is landed, one after the other. At times, things might get busy with a run of fish, but there will be enough quiet times to make sure every data field is properly filled in.

≫ *Use 2B pencils to fill in your forms*

We recommend using 2B pencils to fill in all the forms. 2B pencils are darker than normal HB pencils, especially on waterproof paper. This makes the work clearer and helps when the forms are photocopied or scanned. However, 2B pencils may be difficult to find in the local store. Observers should know where they can get supplies. Usually, they will be supplied by the observer programme. Take good care of the 2B pencils as they are expensive and not easily replaced.

Never use a pen to fill in observer forms, especially the waterproof forms. Pen can be used to fill in the diary and the trip report at the back of the workbook. However, it is still better to use 2B pencils for the trip report in case something needs to be erased.

≫ *Write clearly*

Observers need good, clear handwriting. Aim to write clearly and to print everything that is written. Keep pencils sharpened and use a clean eraser to rub out errors.

≫ *Fixing errors*

If a mistake is made, simply erase it and write in the correct information. However, if a mistake is noticed after the day it was made, then draw a neat circle around the mistake and note in the comments: *Mistake – correct entry is '.........'.* referring to the page number of the daily diary where an explanation of the mistake can be found. Make a note in the daily diary about the mistake and how it was discovered.

> ## Diary : Daily record
> *New: New observers are currently being trained to call what was previously referred to as the 'diary' the 'daily record'. The 2007 observer forms still use the term 'diary' so we will continue to use that word here. However, if you were trained more recently you may be more familiar with the term 'daily record'.*

≫ *Missing page*

If a form is missed or skipped by accident, don't go back and fill it in later. Put a line through it and mark '*Missed this page*'.

≫ *Do not re-write data*

Fill in the observer forms when the event occurs, directly on to the form. The format of the observer forms makes this possible at all times. There is no need to write the data into a notebook and then copy it onto the observer forms later. The LL-4 forms are printed on waterproof paper so there is no need to re-write this data either. *Re-writing data has been found to be a source of errors and can weaken the validity of data that is used for compliance purposes.* Don't worry if the LL-4 forms get a bit dirty. We expect this, but observers can spend some time cleaning them up as much as possible before handing them in.

≫ *Lightly clean waterproof forms*

Waterproof forms are specially designed to be used on deck. It is not a clean environment so nobody expects observers to bring back clean waterproof forms. However, observers should make an effort to keep these forms as readable as possible. Watch out for fish scales sticking to waterproof forms. If data is written on top of the scales,

the pencil marks (and the data) will be lost when the scales fall off. Blood stains can be washed off waterproof forms under a light flow of running water. Avoid strong blasts of water from the deck hose as the forms might be lost overboard. Light cleaning will remove blood stains without removing pencil marks. Don't try to remove tougher stains like oil, grease, etc. as this may remove the pencil marks as well. Leave the forms in a safe area to dry out. Don't leave forms on deck to dry out. They may blow away. Work towards cleaning and drying the waterproof forms before the end of the haul. Catch up on this work during rest days.

≫ Fill in the header details on every form

It is important that the header details are filled in on every used form. The header details are the first block of data fields at the top of each form. Forms can easily become separated during photocopying, scanning or filing, or while the observer is travelling to and from their boat. Without the header details there is a risk that some of these separated forms will not be identifiable and the work the observer has done to collect the data will be wasted.

Caution! Do not fill in the header details on forms before they are used. Some observers have been known to 'prepare' their forms by filling in the header details for several days ahead. Problems then arise if the vessel returns to port a few days later. Debriefers may ask for the information for all forms with the header details filled in.

≫ Carry a notebook

Carry a small notebook and pencil at all times. Use the notebook to write down any extra information that is picked up during the day. The notebook can also be used if the observer is under pressure to record information quickly and the relevant data form is not handy. For instance, if a marine mammal is sighted from the deck, the notebook can be used to record as much information about the sighting as possible before getting the GEN-2 form and filling in all the required data fields. Use the notes to help complete the form. *Under no circumstances should the notebook be used to collect standard data to fill in forms later on a continual basis.* Notebooks should be handed in to the observer programme at the end of the trip.

?

Can I show my data to the Captain or crew?

It is best to keep data and forms to yourself, and to always store them in a safe secure place. The type of information observers collect is not a secret as all observer forms are available on the internet (www.spc.int), but do not leave your data forms lying around. Forms should be stored away in a secure area when they are not being used. If the captain or a crew member asks to see the data sheets, they should be told politely but firmly that this is not allowed. If you feel you are under constant pressure to hand over your data sheets, be careful to make a report of these incidents in your diary. Make a full report of which officer or crew member asked to see your data sheets and the date and time when this happened. This should also be done if the captain or another crew member changes anything on the data form, or requests that changes are made. Record these incidents in detail. Fill in your GEN-3 form and make a full report of the incident in your diary or written report. For increased security, reports on serious incidents can first be made in your diary in your own language, although the final written report should always be in English so it can be read by different coordinators, managers, compliance or legal personnel, if necessary.

≫ Comments

Observers are encouraged to write comments on their forms. These should be written in the comments area of the forms only. Comments by new observers can help to clarify any misunderstandings or mistakes they may have made with their data, while comments by experienced observers can draw attention to new fishing practices or highlight areas where changes in the form may be helpful, etc.

≫ *Continue comments in the diary*

When there are a lot of comments to make and there is no more space on the data forms, continue the comments in the daily diary. In the comments section, note the diary page number where the rest of the comments can be found (for example, '*see (a) page 12 of 50 in daily diary*').

Refer to the previous note on the term 'diary'. Page 9.

≫ *Fill in the diary*

Refer to the previous note on the term 'diary'. Page 9.

All observers are expected to keep a diary and to make an entry in it at least once **every day**. A diary entry is required even if very little happens during the day, or if the observer is tired at the end of the day. The entry should give a general idea of what happened on the vessel during the day. The diary can be used to note down any pieces of information that are picked up. This will help observers fill in their trip report later.

As explained elsewhere in this guide the diary must be used to:
1.   Clarify any mistakes that were made on the form and changed after the day they were recorded.
2.   Continue comments from the comments section of the form.
3.   Record any infringement on the day that it happened.

All diary entries should be made on the day they happen and not on a later date. If more information is discovered later on, fill it in under the date that it was first discovered.

It is very important that any critical incidents or infringements made by the vessel during the day are reported in detail in the diary, even if these incidents are thought to be minor – like failing to record bycatch on the logsheet. For increased security, reports on serious incidents can be made in the observer's own language, but the final trip report must be in English so it can be read by different coordinators, managers, compliance or legal personnel, if necessary.

Start all reports on infringements with the letter and heading on the GEN-3 form that refer to the type of infringement being reported. For instance, if the observer was denied access to the GPS at any stage during the trip, the most appropriate infringement header for the diary from GEN-3 would be *p) Hinder the observer in the carrying out of their duties.*

In cases where exactly the same issue occurs every day, one full description in the diary is sufficient at the start. Future daily reports can refer to this description but should include the time and position of the latest occurrence. New information on the issue, or further developments, can be recorded on the day they are discovered. One idea is to draw up a table on a spare page of the daily diary (or spare page appended to the trip report) to record daily times, positions, etc., in one place.

(See the example diary on pages 22 to 25 and the example GEN-3 Form on page 109.)

Observers can also keep a list of photos taken during the trip in their diary. Record the number of the film or photo frame and a description of the photograph.

≫ *At the end of the day*

Get into the habit of checking forms at the end of the day. Check through them again when there is more spare time, for instance, on a rest day.

Take time to make sure:
1. The header details are filled in and the page numbers are up-to-date.
2. All data fields on any forms that have been used are completely filled in or dashes have been inserted.
3. The set start times, which refer to the same fishing operations, are the same on all forms, i.e. (LL-2/3, LL-4, LL-5, GEN-2).

≫ *At the end of the trip*
Take time to check:
1. The **page numbering** is complete and the **total number of pages** used for each form type is filled in.
2. **Return port and date**—fill in the date, time and port of return. Observers who pack their forms into their bags before they have this information often forget to fill in these details.

≫ *Fill in the observer's written trip report*
Try to fill in every section of the trip report. If a section is not relevant to the trip (for instance, no species of special interest were seen during the trip), complete these sections by writing something like 'not relevant to this trip' in the space provided.

Experience will help observers write better trip reports as different trips or fishing strategies can be compared to the most recent trip.

≫ *Timely reporting*
Complete the trip report, check through the data forms and submit all the information that has been collected during the trip as quickly as possible. The longer it takes to fill in the written report, the more likely it is that information will be forgotten. **The written report should always be completed within seven days of returning to the home port.**

≫ *Debriefing*
Most observers will benefit from a full debriefing at the end of their trip. Debriefing gives observers a chance to learn about any mistakes they have made and to improve their observer skills. If observers have any problems collecting information during the trip, they should make a comment, and a further note in the trip report if necessary so the debriefer can update the observers' skills in that area.

≫ *Falsified data*

> ### *NO DATA IS BETTER THAN FALSE DATA.*
>
> ### **Observers found falsifying data will not be given further contracts.**

Basic data collection

Header details

Observer's name

Observers must write their name in full, as it appears in their passport, on every single form. Put the first name first and the last name or family name last. Do not abbreviate the name on any of the forms.

Observer trip ID number

Fill in the complete *observer trip identification number* as issued by the observer programme that has authorised the placement, or as determined by the number of trips done by the observer during the year.

Observer trip identification numbers are individual trip codes so each observer trip can be uniquely identified. A personal 3-letter field staff ID code (or observer ID code) is assigned to all observers when they graduate from basic training. This code identifies the observer in all observer databases and is used to generate the observer trip ID number. For instance, the 3-letter ID code for Benaia Bauro is 'BEB'. (Note: some observers who were trained in earlier years may have a 2-letter ID code.)

Observer trip identification numbers are generated in different ways but retain the same basic structure.

National Observer Programme trip identification numbers

(1) Most national observer programmes use the **personal observer trip ID numbering system.**

Observer ID code, space, two digits indicating **the year of the trip**, dash, **trip number** (i.e. the current trip number based on the number of trips (1, 2, 3, 4, etc.) completed by *the observer* during the calendar year).

The advantage of using this system is that the observer can always create their own observer trip number, even if they have not received any advice from their coordinator.

> Observer generated ID number
> Example: **BEB 06-03**
> This is the third trip made by the observer 'Benaia Bauro' during 2006.

? *My last trip was with a sub-regional observer programme and my next trip is for my national observer programme. I am not sure how to create my observer trip ID number.*

The personal observer trip ID numbering system (as outlined above) will always indicate the total number of trips the observer has taken during the calendar year. In the example below, Benaia Bauro did two trips early on in the year on longline vessels (LL), and was then asked to board a purse-seine vessel (PS) for his national observer programme. After these trips were completed he was selected for a trip with the USMLT (United States Multilateral Treaty) sub-regional observer programme. On his return he did a short LL trip before the end of the year for his national observer programme. Since his national observer programme was using the personal observer trip ID numbering system, his trip numbers for the year would look like this:

Observer Trip ID numbers

BEB 06-01	(National Programme trip, first trip during the year 2006, done on a LL)
BEB 06-02	(National Programme trip, second trip during the year 2006, done on a LL)
BEB 06-03	(National Programme trip, third trip during the year 2006, done on a PS)
18 LP / 33	(USMLT observer programme trip, thirty-third trip during the 18th treaty period, done on a PS)
BEB 06-05	(National Programme trip, fifth trip during the year 2006, done on a LL)

(2)   Some national observer programmes use the national observer trip ID numbering system.

Observer ID code, space**,** two digits indicating **the year of the trip**, dash**, trip number** (i.e. the current trip number based on the number of trips (1, 2, 3, 4, etc.) completed *by the national observer programme* during the calendar year.

These observer trip ID numbers will be assigned to the observer by the observer coordinator before their departure. The advantage of this system is that it helps observer coordinators manage their target coverage (or the total number of boardings they want to make) for the calendar year.

> Programme generated number
> Example: **JSN 03-47**
> This is the forty-seventh observer trip made by the FSM National Observer Programme in 2003.
> The observer, Joster Nena, carried out the trip.

Caution! With both of these national observer programme trip numbering systems be careful not to put the trip number before the year the trip was undertaken. If the observer incorrectly writes down BEB 03-06, instead of BEB 06-03, it would mean his sixth trip for 2003, when in fact it is his third trip for 2006.

Sub-regional observer programmes – 'Observer trip ID numbers'.

The USMLT observer trip ID codes consist of: **licensing period number, LP, forward slash, trip number** (i.e. the current trip number from the sequential order of the number of trips done by the USMLT observer programme during the licensing period). The licensing period runs from June to June.
Example: 21LP/15

The FSM Arrangement observer programme trip ID codes are slightly different. **They consist of: FSMA, licensing period, forward slash, trip number** (i.e. based on the number of completed trips (1, 2, 3, 4, etc.) carried out by the FSMA observer programme during the licensing period which currently runs from Sept to October.
Example: FSMA14/31

Caution! If you find after returning from your trip that you have used an incorrect observer trip ID code (perhaps you were given the wrong code by your observer programme), correct your observer trip ID number **on every single form before handing in the data.**

Vessel name
It is best to agree on the vessel's correct name during the placement meeting. The name of the vessel is the name written on the 'country registration certificate', which is issued by the country registering the vessel. If necessary,

observers can ask the captain for access to the vessel's country registration certificate. If that is not available, check the vessel's fishing licence for the vessel's name.

Page numbering

Forms of the same form type should be numbered together. For instance, number all the LL-2/3 forms as a group and all the LL-4 forms together as another group. Number each form as it is used. At the end of the trip, go back and fill in the total number of each form type used.

Caution! Do not fill in *'Page 1 of __'* more than once, for any form type. 'Page 1' should only be used on the first form of the first set. It should not be written again if monitoring a new set.

For example, for a trip with 27 sets, the observer needed to use 76 LL-4 forms to record the catch details for all the catch that was monitored. The LL-4 page numbers are therefore recorded on the forms as follows:

Set number and number of LL-4 forms that were used in that set during the haul	Record the following set and page number information on each LL-4 form	Notes
Set No. 1 – **two** LL-4 forms needed	SET No. **2** — PAGE **5** OF **76** SET No. **2** — PAGE **5** OF **76**	The LL-4s in the first set have as their page numbers page No. 1 and page No. 2
Set No. 2 – **three** LL-4 forms needed	SET No. **2** — PAGE **5** OF **76** SET No. **2** — PAGE **5** OF **76** SET No. **2** — PAGE **5** OF **76**	The LL-4s for the second set continue on the page numbering from the two LL-4s used in the first set.
(Set 3-26 – **69** LL-4s used)	*3 to 26* — *6 to 74*	….and so on
Set No. 27 – **two** LL-4 forms needed	SET No. **27** — PAGE **76** OF **76** SET No. **27** — PAGE **76** OF **76**	… the last two LL-4 forms are used in the last (27th) set.

Time and date records

≫ Ship's time

What time is it? That question is not easy to answer on a fishing boat. The independent nature of fishing vessels allows them to set their own watches and choose which time-zone to follow. Some vessels choose to use the time zone of their home port; this makes communications easier for them, especially if they are in continuous contact with their home port. Other vessels may choose to follow the local time-zone of the last port they visited, while others will choose to follow the time-zone of the area they are actually fishing in.

Observers should record the ship's time on all forms except the GEN-1 form. Ship's time is the time that is normally used onboard the vessel. Observers should change their own watches to ship's time as soon as they board the vessel. They can check one of the ship's clocks in the galley or wheelhouse, or ask the captain or crew for the current ship's time.

≫ UTC time and date

Since vessels use a variety of times, observers are asked to collect a second time, or standard time, so people reviewing several observer trips can compare the time of day when activities took place. The standard time that observers are asked to collect is UTC time (Universal Time Coordinate). It is an internationally agreed time standard and may also be referred to as GMT time (Greenwich Mean Time). This is done once a day on the LL-2/3 forms. **For all other forms observers should record the ship's time.**

1. The UTC time is available on the GPS; however, it may not be displayed on the first screen, so observers may have to ask the captain or a crew member to help them locate the UTC time on the GPS. Observers should not use the vessel's electronic systems without permission (during the placement meeting, the captain will be asked to show the observer how to obtain the UTC time). Keep in mind that the GPS may have two or three different times on it, so look for the time and date marked *UTC time and date.*

2. If you cannot locate the UTC time on the GPS (due to communication problems, for instance) then calculate the UTC time from the ship's time.

> ### Make sure you adjust the date, if necessary.

- ≫ If the ship's time is the local time of Taiwan, then subtract 8 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of Japan or Palau, then subtract 9 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of Chuuk, Yap, Guam or PNG, then subtract 10 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of Pohnpei, Solomon Islands, Vanuatu or New Caledonia, then subtract 11 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of Kiribati (Gilberts), Marshall Islands, Nauru, Fiji or Tuvalu, then subtract 12 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of Kiribati (Phoenix Islands) or Tonga, then subtract 13 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of Kiribati (Line Islands), then subtract 14 hours from the ship's time to get the UTC time.
- ≫ If the ship's time is the local time of American Samoa, Samoa or Niue, then add 11 hours to the ship's time to get the UTC time.

≫ If the ship's time is the local time of the Cook Islands or French Polynesia, then add 10 hours to the ship's time to get the UTC time.

Hint: Purchasing a dual-time watch with dual-time capabilities can give you personal access to the UTC time. Many watches of this type are cheap and readily available around the Pacific. If you set the second time to UTC time, you will always have UTC time on your watch.

Measuring lengths

> *Length measurements are always **rounded down** to the nearest whole centimetre.*

≫ If the length of the fish is 71.1 cm, record 71 cm on the data sheet.

≫ If the length of the fish is 71.5 cm, record 71 cm on the data sheet.

≫ If the length of the fish is 71.8 cm, record 71 cm on the data sheet**.**
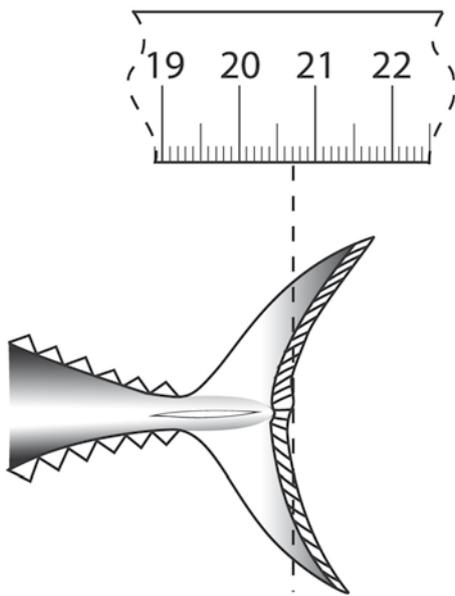
The length of this fish will be recorded as 20 cm.

≫ Always use calipers

Always aim to measure fish using callipers. Calipers give the most accurate and reliable results.

If a deck tape is used, make sure it is placed under the fish and that the start of the deck tape is placed up against a raised hard object. This will ensure that the nose of the fish is aligned with the zero mark on the deck tape. If this is not done, the fish can easily slip down the deck tape when it is being measured, giving an incorrect measurement.

Understand how to use calipers correctly. Calipers are designed so that the groove, on the fixed leg of the calipers, is normally placed on the snout/upper jaw of the fish and not on the fork of the tail.
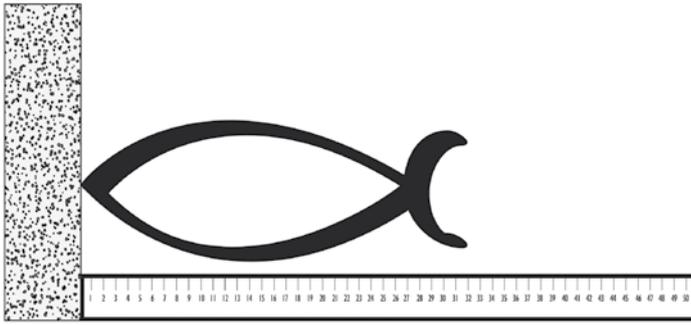
Always place the deck tape up against a straight (90 degrees) vertical object.

Pay attention to collecting the true measurement when using a deck tape. The observer's eye must be directly above the tail of the fish to ensure the correct measurement is recorded. If the measurement is taken when the eye is not directly above the tail of the fish, the measurement will be read at an angle, possibly giving an incorrect result.
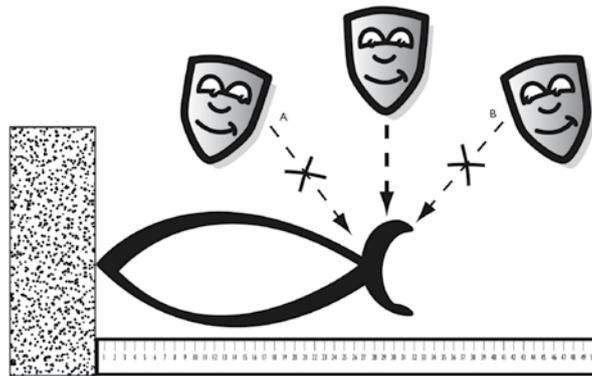
≫ *Do not measure damaged fish*

Do not measure damaged fish. The fish can be recorded with the 'NM' – not measured length code.
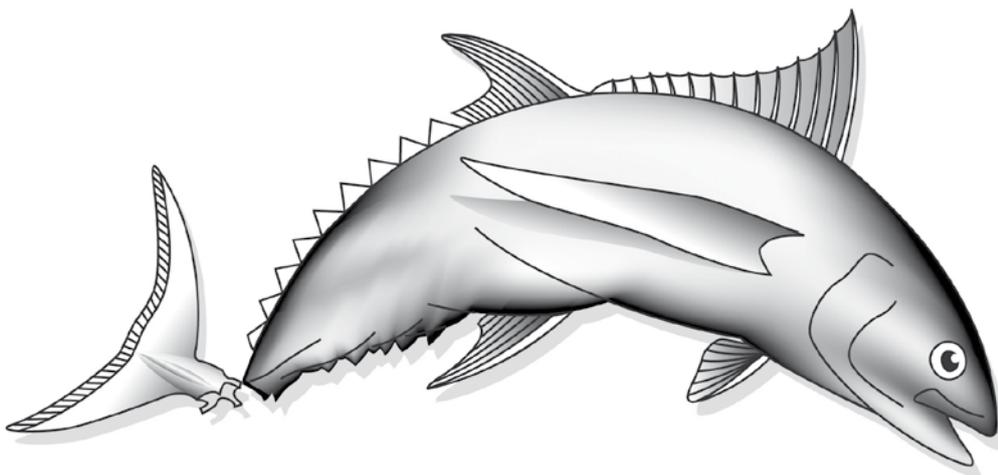
≫ *Large species*

When a fish is larger than the callipers, measure it by taking two or more measurements. One method is to first measure as much of the fish as possible, make a light mark on the fish at the point where the measurement stops, and then take a second measurement from that point. Adding the two measurements together gives the length of the fish. Another method is to take the first measurement at 100 cm, lightly mark the fish at this point, and then take a second measurement from the point. It is then easy to add the two measurements together to get the full length.

≫ *Calibrate the calipers*

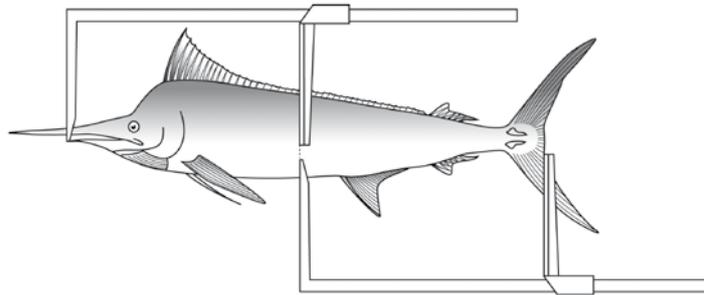Calipers must be calibrated regularly to ensure they measure accurately. To calibrate calipers, measure a section of a deck tape or ruler with the calipers. Measure 25 cm on the deck tape, then check that the calipers read 25 cm exactly. If a deck tape or a ruler is not available, use the ruler on the calipers to mark out a set length (e.g. 80 cm) on the deck. Then calibrate the calipers against the set length.
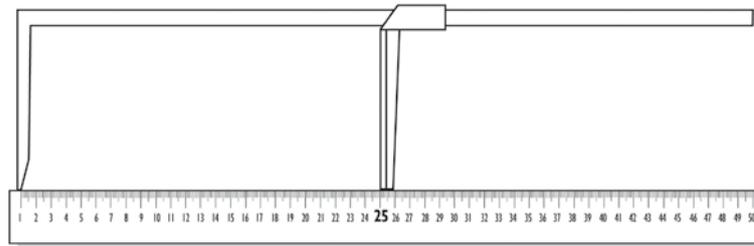
≫ *Do not use a tape measure to measure any species*
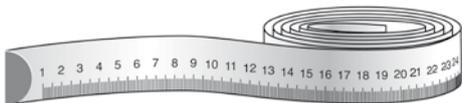
Measurements taken with tape measures are known to give incorrect results. Samplers often place the tape measure above the fish, resulting in a curved tape measure, which may add extra centimetres to the true length. Also, tape measures made of fabric may stretch in the wet environment. This can also add extra centimetres to the true length.

Observers who do not have calipers are reminded that calipers are necessary to record the straight carapace length of turtles. **Never use a deck tape or tape measure to measure turtles**. If no calipers are available, just mark the turtle down as NM – not measured.

? *I have forgotten my calipers/deck tape.*
I can't measure any fish.
● *What can I do?*

A fisheries observer is not an observer without a measuring instrument. It is the observer's responsibility to ensure they have the proper work tools with them and that the tools are in good working order. However, sometimes things go wrong, even when people take the best of care. Explain why the problem happened in the trip report. It is not a good idea to 'make-up' a measuring instrument from a piece of wood or string, etc. as it is likely that incorrect length measurements will be recorded. Continue to collect all other information.

> *Under NO CIRCUMSTANCES should length measurements be made up.*
> *If for some reason the observer is unable to get length measurements or any other data, they should simply dash the data field and make a comment stating why the information was not recorded.*
> *NO DATA IS BETTER THAN FALSE DATA.*
> **Observers found falsifying their data will not be offered further contracts.**

Recording weights

Weights are recorded to the nearest kilogram.

For instance
If the weight of the species is 34.23 kg round the kilogram value down to 34 kg.
If the weight of the species is 34.68 kg round the kilogram value up to 35 kg.
There is a special case for values finishing with a five. For instance, if the weight of the species ends in exactly half of a whole kilogram it should be rounded up; for example, if the weight of the species is 35.5 kg it will be rounded to 36 kg.

Rounding off to the nearest value

Most data fields are formatted to accept whole values only. Occasionally, some data fields will accept values written to one decimal place. Check the relevant section in this document for further guidance on the accepted final format for values in data fields. Length measurements should always be rounded down to the nearest centimetre, but other values should be rounded to the nearest whole number or to the nearest one decimal place figure as required.

Examples of numbers rounded to the nearest whole number and the nearest one decimal place.

1) the nearest whole number		2) the nearest one decimal place	
Rounding 23.1	23	Rounding 38.12	38.1
Rounding 04.7	5	Rounding 05.87	5.9
Rounding 10.5	11*	Rounding 13.55	13.6*
		Rounding 13.8273	13.8
		Rounding 27.9729	28.0
		Rounding 05.45982	5.5*
		Rounding 13.8273	13.8
		Rounding 27.9729	28.0
		Rounding 05.65982	5.7*

*If the last figure you need to round ends in a 5, then round the value up to the nearest *larger* value.

Data verification during placement

National and regional observer programmes are working towards providing formal placement meetings when the observer first boards the vessel. Placement meetings can help observers verify some of the information they need to collect before they depart. A fisheries officer, the observer and the captain should be at the meeting.

Placement meetings should be used to:
≫ Verify the vessel's name.
≫ Check the vessel's licence, its validity and any associated permit or licence numbers.
≫ Ensure that the observer will have access to the wheelhouse at all times.
≫ Locate the GPS.
≫ Locate the latitude and longitude to 3 decimal places on the GPS display.
≫ Locate the UTC date and time on the GPS display.

At the placement meeting, the observer should also be informed about the safety equipment and safety drills, the location of a lifejacket for the observer, and any unsafe areas of the deck or other parts of the vessel.

Not all observer programmes will be able to provide placement meetings. There may not be enough staff to carry out this procedure. However, every observer programme will be working toward providing a placement meeting. If you did not benefit from a placement meeting and you had some difficulties getting some of the information outlined above, talk with your debriefer and highlight the benefits of providing future placement meetings for the vessel / fleet that you boarded.

Daily record

Observers are required to maintain a detailed daily record of activities, events and information during their time at sea. This should include personal observations and information relevant to the daily operation of the vessel as well as more sensitive information in relation to possible vessel operational non-compliance. Observers are also expected to refer to relevant daily record information when completing their written reports at the end of the trip. In maintaining his or her daily record, an observer should:
1. Number each page
2. Undertake regular daily entries
3. Record the date and time of each entry
4. Record relevant information

Below is a simple example of a daily log for the first three days of an observer trip on a tuna longline vessel.

15 November 2008

My vessel departed port of Majuro at 0630 hrs. Sea was calm, 3 knots with south easterly wind. We headed north after passing the passage. Captain revealed that it will take a day to reach the fishing ground.

I went to bed late in the evening at 2130 hrs and we were still transiting to the fishing ground. I have my own bunk, but there is only a thin straw mat. Observers should bring their own pillow. Two crew members were on watch, but the rest including the Captain were all asleep. Sea conditions remain the same.

16 November 2008

We arrived at the fishing ground at 0700 hrs. We drifted in the area for the rest of the day before our first set started at 1900 hrs — first radio buoy dropped in the water. I started filling LL-1 with a number of data fields left vacant to be filled in later in the trip.

LL-1 comment continued
Life rafts: I tried to the get information about the life rafts but couldn't because the writing on the stickers has worn away. There are other stickers below, so it looks like they have been serviced before. I tried to ask the Captain about the no. of people and the inspection date, but he was no help. I might try to ask him later.

LL-2/3 was filled as soon as the first radio buoy was dropped in the water. There is no line shooter onboard; I did not record the line setting speed and some of the specifications details because there is no line shooter onboard. Setting completed at 2335 hrs. I went straight to bed after completing the LL-2/3.

No GEN-3 incidents
No incidents observed today. No other general forms are required during first setting.
Set finished at 2335 hrs. Using basket type gear. Monofilament line tied together in pieces. Hope to learn more about this tomorrow. 135 baskets of gear. A radio buoy at the start and the end of the line. Crew very helpful when I was trying to count the buoys. Otherwise they have 360 mm red fishing buoy at the end of the floatlines.

17 November 2008

Our first hauling started at 0530 hrs. Sea condition was very calm, not an ideal condition for longlining — too calm, perhaps. First fish was on hook number 5 — huge BET, 167 cm, good sign after no fish caught for the first hour of hauling. I filled up four LL-4 forms — lots of YFT and BET (target species) retained. They were all gilled, gutted, retained and preserved under ice. (Also I noted down (for my trip report) that large YFT and BET were stored under slurry/chilled sea water as part of proper fish handing and fish quality. The number of baskets set (during setting) and number of total baskets observed (I observed all baskets) were the same — 156 baskets altogether. I also took five photos (DSCN 0001 to DSCN 0005) of a shark (FAL??) for further identification when I get back to shore. Hauling completed at 1540 hrs. Baits were taken out after hauling for the next set. Line was set again at 1915 hrs. We finished the set at 2245 hrs. The same number of hooks were set today and we are in the same area.

GEN-3 incident
E) Not record bycatch and discards
When I checked the logsheet after the set the Captain had not filled in a lot of the bycatch species. He only recorded the fish he kept onboard, like mahi mahi, but not the pelagic rays or other fish that were discarded. Still, the number of target catch that he recorded looked correct.
K) Breach MARPOL Regulations
The plastic wrapping from the bait boxes was thrown straight overboard.

18 November 2008

Woken up by the Captain. When I came on deck the first radio buoy was being pulled in, so was able to record the start of haul position. There are reflectors on the floats at the end of the floatlines, so we can see them in the dark. I did a drawing of these. The cook brought me some coffee and rice soup to start the day. A lot of rain showers today so hard to keep the workbook dry. There was nothing for ages and then we got three very nice bigeye. Finally see a smile on these guys' faces. One crew member keeps cutting the tail off the rays before discarding them. The line got all balled up around 0945 hrs and they had to cut a lot of it off. They threw the tangled branchlines straight into the sea. I think there must have been about 10 branchlines that went back into the water. It was probably due to the turtle that came onboard at 1005 hrs. It was an olive ridley turtle. I checked the pre-frontal scales (two) and the costal scutes. The turtle was fairly tired when he landed, but he seemed to be okay by the end of the haul when they put him back in the sea. Photos DSCN 006 to DSCN 0013 are all of the turtle. We ended the haul at 1148 hrs and set the line again at 16.15 hrs. The same number of hooks were set again today.

shiny

shiny

Light from vessel
(can be seen from afar)

shiny
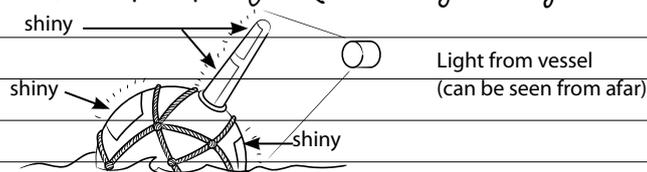
Sometimes light buoys
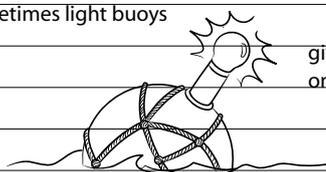
give light of about 5 secs depending
on the battery.

LL-4 comments continued
0815 hrs BET: I recorded this bigeye as being discarded due to shark damage. Still there may have been some squid damage also. It is hard to tell. There are some of those small holes damaging the flesh. Maybe the shark got there first and then it was the squid. Took photos (DSCN 0014 and 0015) for this BET.

GEN-3 incident
E) Not record bycatch and discards
As per the first set when I checked the logsheet after the haul they had not recorded any of the fish that they did not keep.
K) Breach MARPOL Regulations
Same as every day: the plastic wrapping from bait boxes goes straight into the water. Today they also dumped a big ball of tangled branchlines during the haul. The time is noted on the LL-4 form.
J) Catch species of special Interest.
One turtle caught at 1005 hrs. All of the details were recorded on the LL-4 and GEN-2 forms.

19 November 2008

Same pattern to the day. Hauling started early in the morning and finished in the mid-afternoon. The catch was similar to yesterday's. A shark was landed at 0903 hrs which was all tangled in rope. He was still alive though. The crew kept the fins and threw the rest of the shark back. It was an oceanic white-tip shark.

cut by rope
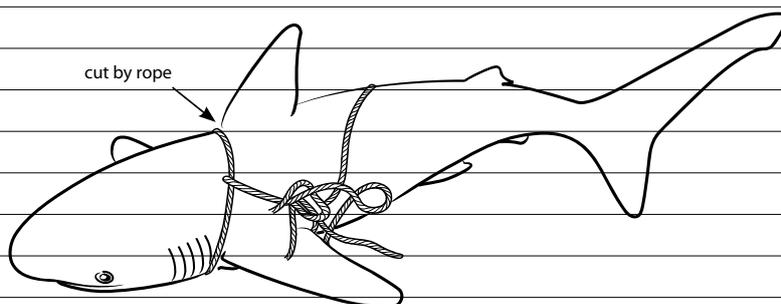
Data mistake

I found an error on the LL-4 form I filled in yesterday. For 0923 an ESC was recorded with an LF measurement. It was supposed to be CF; I just made a mistake because there was a blue marlin with an LF measurement on the line above. Anyway I changed it today and the correct entry is CF.

GEN-3 incident

E) Not record bycatch and discards

Same as every day. No discards are recorded. Did not record the two shark damaged tuna that were observed during the haul.

K) Breach MARPOL Regulations

The plastic from bait boxes again; and the cook threw over a few tins (around three) before dinner time.

20 November 2008

I took a rest day. It is going to be a long trip, so I hope to observe three fishing operations and then take a rest day.

I worked on my LL-1 form in the afternoon. It is complete now. There are no new fishing gear or methods for this boat. They have a lot of equipment onboard that is old, which they don't use anymore. Still, they have all the new stuff as well — GPS, track plotter etc. But I didn't see anything that I haven't seen before. I watched the Captain closely during setting and he seems to use the track plotter and be on the radio a lot. I think he is just following what his mates say. He doesn't have any fishing information services or any other high technology to help him out. His English is not very good, but I asked him about the life rafts. Finally he understood and showed me some certificates. I could see the date 11/09/2009 on them, but it is all in Taiwanese so I really don't know what that date is. Maybe it is the expiration date. Took photos of the gear and the electronics today —photo numbers DSCN0016 to DSCN0022.

I heard the vessel slowing down and then really speeding up during haul around 0605 hrs. I went up on deck to check what was going on. There seemed to be a line beak and the vessel was searching for the rest of the mainline. The captain switched on the RDF and after about 5 mins. we came to one of the buoys that are attached to the end of the floatline. It had a flashing light so we were able to spot it easily. They put one of these buoys in every 10 floats. I made a drawing of the buoy.

GEN-3 incident
No incidents observed today.

Connecting the diary to the GEN-3 form

Any infringements that happen during the day should be recorded into the diary first. At the end of the trip you will need to sum up all the daily infringements on the GEN-3 form. See the example on page 109 where the incidents that were captured in this diary example are recorded on the GEN-3 form.

Revisions made to the 2004 Longline Forms to create the 2007 forms

The following section (amended from the insert to observer workbooks) highlights the changes that were made to the 2004 forms. Further details on how to fill in the specific data fields can be found in the relevant chapters of this LL Observer Guide.

NEW data fields

LL-1

≫ **Weather facsimile or satellite weather monitoring**: Observers are now required to indicate whether there is a weather facsimile or a satellite weather monitoring unit (or both) onboard, to reflect the fact that more vessels are now using alternative means to monitor weather patterns than the traditional weather facsimile machine.

≫ **Hooks**: Type and size. Fields have been added that will allow observers to record if any of the three common hook types or any other types of hook are being used. Additionally, data fields have been inserted for recording the size(s) of the hooks used. If one hook type but two different hook sizes are used then record the second, less commonly used size in the 'other' section. If a totally new type of hook is used put an abbreviation in the 'OTHER — type' field and the complete name in the comments section below.

GEN-2

≫ **For multi-animal interactions**: A single GEN-2 can now more effectively be used to record a single incident where several animals of the same species are involved. Extra fields are now available to record the total number of animals involved and the condition of those animals at the start and end of the interaction. Typically, but not necessarily, it is anticipated that such interactions will involve several animals which have the same condition at the start of the interaction. The animals then could all be affected similarly during the interaction or may finish up in two or even three groups, each with different conditions at the end of the interaction. The total number of animals in the different groups at the end of the interaction should equate to the number at the start. When dealing with only one animal put dashes in other fields as is usually done.

≫ **A new code for Bryde's whale** = 'BRW'.

≫ **A new general code** for baleen whales = 'MYS'.

GEN-3

≫ **A new category '(t):** Not display or present a valid (and current) license document onboard' has been added. The new instructions (on the reverse of form) explain what is meant by this. Report on whatever is in place of a valid ORIGINAL license document and what reasons have been given for no original being available. Note that observers must record an 'X' in 'NO' if the original cannot be seen; even if assured that what is in its place is valid. Others can judge the validity.

Data fields that have been removed

LL-1

≫ **Navigation radar and bird radar**: Observers no longer have to collect information on the navigation radar onboard. However, on purse seiners and pole-and-line vessels they are still required to check whether there are dedicated 'bird radar' units onboard and to collect make, model and usage information for them.

≫ **Call-up and non-call-up buoys**: Observers are no longer asked to collect information on these pieces of equipment.

Changes to the how the data is recorded

LL-1

≫ **Satellite communications systems**: This field has been changed to 'Communication systems' so that it can now be sensibly shown if the vessel uses mobile and/or satellite phones.

≫ **Vessel monitoring systems (VMS)**: Observers must now collect information on each VMS onboard. If there is more than one system, collect the information on the FFA approved system type first. Be sure to understand the difference between VMS (the organisation monitoring system) and the make and model of the automatic locator communicator (ALC) — the unit transmitting the information. Sometimes the ALC make and model is too difficult to obtain due to the mounting arrangements but observers should always obtain the VMS system type.

≫ **Emergency position-indicating radio beacons (EPIRBs)**: Under new GMDSS (Global Maritime Distress and Safety System) rules 121.5/243, EPIRBs should no longer be carried onboard. Observers are now asked to record the number of 406 EPIRBs that are onboard and to check to see if any of these have expired battery dates. There is also space to record if any new type of emergency positioning system comes into use. Note that if 121.5/243 EPIRBs are still being carried onboard observers should mention this in the comments section of LL-1 and in their trip report.

≫ **Life rafts**: Slight changes to the instructions now ask observers to record 'ND' for 'not displayed' in the data fields along with the inspection dates if the labels that normally have this information cannot be found on the life rafts or cannot be read. Note: only record 'ND' if the observer has carefully inspected the available life rafts and cannot find the information. If the information isn't gathered for other reasons then record the normal dash with comments. If the information cannot be found because there is no life raft then dashes should be recorded and the fact that no life rafts are available must be strongly stated in LL-1 form comments and in the observer's trip report.

≫ **Due date or last date for inspection**: Sometimes the dates that observers find are for the last inspection date rather than the more commonly occurring 'due date' for inspection. Observers are now asked to add a prefix to the inspection date to indicate if it is the due date for inspection (D) or last date of inspection (L). For example, if the due date for inspection is January 2009 then the observer should record 'D-01/09'.

≫ **Usage codes**: Small changes have been made to the definition of the usage codes 'ALL', 'OIF' and 'SIF' to try to reduce some confusion about when to use them. All three codes are used in relation to fishing activities, so the definition for 'ALL' now reads 'used all the time in fishing'. If a line hauler on a longliner is used every time a set is hauled then the correct usage code for the line hauler will be 'ALL'. It doesn't matter that the line hauler is not used during the setting phase of the set; because it is used at some time in every set the code 'ALL' is the correct code to apply. However, if a line hauler is normally used for hauling long sets but the

occasional short set is always carried out by hand then the correct code to record against the line hauler will be 'OIF' for 'used often in fishing'. However, if a purse seiner uses its sonar to help track fish in some setting situations but doesn't worry about using it in other situations then the usage code 'SIF' for 'used sometimes in fishing' will be used. The usage codes are only indicators, and how equipment is used and especially why it might be used in some situations and not used in other situations should always be explained in the Observer Trip Report.

≫ **Line materials**: In an effort to get more consistent descriptions of line materials the instructions on the back of the LL-1 form have had some adjustments made to them. Observers should use the descriptions of line materials that are offered in the SPC horizontal longline fishing manual for fishermen as guidance.

LL-2/3

≫ **Target species**: Observers now must place crosses ('X') instead of ticks ('✓') in target boxes. Dashes in the boxes alongside species that were not targeted were previously sometimes confused with ticks — they cannot be confused with crosses.

≫ **Bait**: Now fields are available to record up to five types of bait instead of the previous four.

≫ **Ship's time with comments**: A column has been included to encourage clear labelling of events that are commented on with the time that the event was taking place.

≫ **Line speed (m/sec)**: Note the reminder in instructions to convert knots to m/sec before using line speed with beep interval to calculate the length between branchlines (divide the number of knots by two to get m/sec).

LL-4

≫ **Hook numbers**: Observers must record hook numbers as they see them both in recording bait patterns and in recording catch, whether in setting or in hauling and regardless of whether direction of haul is from the first hook set or from the last hook set. Computers will establish direction of haul from the position and time information available and make adjustments to hook numbers accordingly. Observers will just confuse the issue if they try to make those adjustments manually.

GEN-1

≫ **Ship's time**: Observers must now use ship's time and not UTC time, as has been required up until now.

GEN-2

≫ **Species codes**: Note the correction to one of the codes for species of special interest. The code for olive ridley turtles is now 'LKV' NOT 'LEO'.

GEN-3

≫ **'X'**: Observers must place an 'X' for either YES or NO (never both) for every single category. Don't use dashes, ticks, the words yes or no, or the letters 'y' or 'n'.

Form LL-1: General information

Data submitted

Observers must fill in one LL-1 form per trip. Every workbook will have two LL-1 forms inside. Fill in the first form. The second form is only a back-up. If second or third workbooks are filled in, there is no need to fill in another LL-1 form.

Observers can start filling in the LL-1 form shortly after boarding the vessel. This is a good way to start building a relationship with a new captain and crew before the fishing starts. If observers cannot get the information for some of the data fields at the beginning, they may find that they can get the answers later on.
Fill in all data fields. Fill in all data fields on the LL-1 form or insert a dash if necessary. If a dash is inserted in a data field that should normally be filled in, give the reason in the comments area or in the trip report (e.g. the information was not available, communication problems).

Trip details

TRIP DETAILS							
OBSERVER NAME Leban Benson	DEPARTURE (SHIP DATE AND TIME)						DEPARTURE PORT
	D D	M M	Y Y	h h	m m		
	23	06	08	17	42		Pohnpei
OBSERVER TRIP ID NUMBER LAB 08-03	RETURN (SHIP DATE AND TIME)						RETURN PORT
	D D	M M	Y Y	h h	m m		
	05	07	08	05	15		Pohnpei

A complete fishing trip is defined as follows: *from one full or partial unloading to the next full or partial unloading.* If the catcher vessel comes into port but does not unload fish, the observer should, in normal circumstances, remain with the vessel until the trip is complete and the vessel makes the next port call to unload its fish. If an observer trip does not cover a complete fishing trip, give the reasons in the 'General Vessel Information' section of the trip report.

Observer name

Observers must write their full name as it appears in their passport. The full name should be written on all forms.

Observer trip ID number

Write in the complete *observer trip identification number* as issued by the placement observer programme, or as determined by the number of trips made by the observer during the calendar year.

Departure (ship's date and time)

Use the ship's time to record the date and time that the trip begins. If the catcher* vessel is boarded in port, record the date and time the vessel first threw off its ropes or started its engines to return to the fishing ground. If the catcher* vessel is reached by means of another transit vessel, then the departure date and time is the time that the observer first boards (joins) the catcher* vessel.

Departure port

Write in the name of the departure port in full. If the catcher vessel is boarded, not in port but by means of another transit vessel, then the departure port will be 'At Sea'.

The catcher vessel is the observer's assigned vessel on which they will monitor fish catching. If the observer travels to and from the catcher vessel onboard another vessel, this vessel is called the transit vessel. The transit vessel may or may not be involved in fishing while the observer is onboard.

Return (ship's date and time)

Use the ship's time to record the time and date the trip ends. If the observer returns to port onboard the catcher* vessel, then record the return date and time as the time the catcher* vessel comes alongside the wharf or drops its anchor. If the observer returns to port onboard a transit vessel, then the return date and time will be the time that the observer leaves the catcher* vessel.

Return port

Write in the name of the return port in full. If the observer disembarks from the catcher vessel at sea and returns to port onboard another transit vessel, then the return port will be 'At Sea'.

Caution: Remember to fill in the return date and time at the end of the trip. Many observers pack their forms away before filling in this data field.

Vessel

VESSEL			
VESSEL NAME *Kap Fresh #5*	COUNTRY REGISTRATION No. *WS 0457*		
VESSEL OWNER *FLA Fish Company*	FLAG *TW*	INTERNATIONAL RADIO CALLSIGN *5WCX*	
VESSEL CAPTAIN _____	FISHING MASTER *SEHIRO TAKETOMI*		
FISHING PERMIT OR LICENCE NUMBER(S) *LC – 23481*			

Much of the vessel information can be found by looking at the country registration certificate or the vessel's licence, both of which may be displayed in the wheelhouse, or observers can ask the captain for this information.

Vessel name

Fill in the full name of the vessel as written on the country registration certificate or on the vessel licence. Do not abbreviate the name. Include all numbers associated with the name.

Country registration number

Fill in the *country registration number* as written on the country registration certificate or the vessel's licence. The country registration number is issued by the country where the vessel is registered.

Vessel owner

Fill in the name of the owner of the vessel as written on the country registration certificate or vessel licence.

Flag

Fill in the nationality of the vessel as recorded on the country registration certificate or vessel license. The flag (country) of the vessel is always the same as the country issuing the country registration certificate. Do not be confused by the nationality of the captain or crew onboard the vessel. Their nationality may not be the same as the flag of the vessel.

IRCS

The *international radio call sign* (IRCS) is a unique radio frequency for amateur and sometimes military use. Call signs are issued by the national telecommunication agency. The radio call sign should be displayed on the vessel's licence and clearly on the sides of the vessel (port and starboard). The IRCS must be in either black letters on a white background or white letters on a black background.

Vessel captain

On larger longline vessels, there may be a vessel captain and a fishing master. The vessel captain will have a formal qualification and is responsible for the navigation and safety of the vessel when there is no fishing activity. On smaller longline vessels, the vessel captain is also the fishing master. If this is the case, observers can insert a dash in the vessel captain data field and just fill in the name of the fishing master.

Fishing master

As noted above, there may be a vessel captain and a fishing master on larger longline vessels. The fishing master may not have a formal qualification but will usually be in control of the vessel during fishing operations. On smaller longline vessels, the vessel captain is also the fishing master. Again, in this case, observers can insert a dash in the vessel captain data field and fill in the name of the fishing master.

Fishing permit or licence number(s)

The fishing permit/licence number that the vessel is operating under during the time the observer is onboard should *always* be recorded. It may be displayed in the wheelhouse or you may have to ask the captain to provide these documents/licence number(s) for you. However, all other current fishing permits/licences issued to the vessel should also be recorded by the observer. The vessel will have more than one fishing permit or licence number if it has paid to fish in more than one exclusive economic zone (EEZ) or in more than one fishery.

Crew nationality

CREW NATIONALITY	
CAPTAIN _____	FISHING MASTER **TW**
OTHER CREW: *Taiwan*	: How many ? *1*
OTHER CREW: *Indonesia*	: How many ? *4*
OTHER CREW: _____	: How many ? _____

Note down the name of the country that the crew or captain comes from. If there is any confusion about their nationality, write down the country marked on their passports. The country codes on the back of the GEN-6 form can be used in these data fields.

Captain

Fill in the nationality of the captain (vessel captain). On smaller vessels, there will be no designated captain onboard. Simply put a dash in this data field (see the paragraph on the vessel captain above).

Fishing master

Fill in the nationality of the fishing master. On smaller longline vessels, the captain is also the fishing master (see the paragraph on the fishing master above).

Other crew: How many?

Fill in all the nationalities represented by the crew. Then, mark down the number of crew members of each nationality.

Caution: The LL-1 form is not set up to record any crew members that join or leave the vessel during the trip as this is very unusual. If it does happen, record the crew information that will best represent the number of crew that were onboard during the trip. For instance, if extra crew members only stay with the vessel for a few days, you may decide not to record them under these data fields. Or a crew member may leave the vessel after having been counted earlier. Explain any temporary differences in the crew numbers that were recorded on the form in the 'Crew nationality' section of the written report.

Electronics

Please circle 'Y' or 'N' for every item.
Indicate if each piece of electronic equipment listed is onboard by first circling either 'Y' (yes) or 'N' (no). Remember 'N' must also be circled if no new piece of electronic equipment is seen onboard (see the '* New' paragraph below).

Usage codes
ALL — used all the time in fishing
TRA — used only in transit
OIF — used often in fishing
SIF — used sometimes, but only in fishing
RAR — rarely used
BRO — broken now, but used normally
NOL — never used

Usage codes have been introduced to better show how vessels use their equipment. Knowing what equipment is onboard is useful, but it is also important to know if the equipment is being used and at what times it is being used. Use the codes outlined above to describe how each piece of electronic equipment is used during the trip. For instance, there may be some pieces of equipment (e.g. certain radars) that are only used during transiting and are deliberately switched off during fishing. These can be recorded with the TRA code (used only in transit). Watch carefully during the trip to get a good idea of how each piece of equipment is used, especially when fishing. For the 2007 forms it is important to recognise that the codes 'ALL', 'OIF' and 'SIF' are only referring to the usage of the equipment when the boat is fishing. Further explanation is found on page 28.

Caution! You do not have to record a usage code for VMS systems. For VMS systems the usage data fields have already been filled with "ALC" Automatic Locator Communicator

See extras note on the term ALC on page 38.

When choosing between two codes**, choose the best or most informative code**. Sometimes two usage codes may seem possible for one piece of electronic equipment. If this happens, record the usage code that best describes how that equipment was used during the trip and record the other code in the comments section whenever possible. Otherwise, make a note about it in the written report.

Unlike other information that is collected on the LL-1 form, it may be best if the observer waits before filling in the usage codes. Spend some time finding out how each piece of equipment is used. Observers are advised to spend some time checking how the electronics are used during any rest days they take.

If there is insufficient information on how each piece of equipment is used, put a dash in the data field and state the reason the information was not available in the written report.

Most of the vessel's electronic equipment will be found in the wheelhouse or in a room off the wheelhouse. The following section will help observers identify the electronic equipment requested on the LL-1 form and outlines how it is used.

1. <u>Electronic equipment for which make and model numbers are NOT required</u>

ELECTRONICS		USAGE				USAGE	
GPS	Ⓨ N	ALL		DEPTH SOUNDER	Ⓨ N	SIF	
TRACK PLOTTER	Ⓨ N	ALL		SST GAUGE	Y /Ⓝ	NOL	

Radar

Mainly used by fishing vessels for safe navigation, especially at night. Radars detect and display other objects in the same area as the vessel including ships, reefs and land masses. They may also be used to help find broken mainlines by detecting radio buoys that have radar reflectors attached.

Depth sounder

The depth sounder searches for and displays objects below the vessel. It may show the presence of fish and can be used to help navigate, especially when travelling in shallow waters or entering the harbour area.

GPS

The Global Positioning System (GPS) displays the vessel's exact position in latitude and longitude. The UTC time is also available on the GPS. The GPS will help observers to record positions and UTC times. The use of the GPS should be discussed during the placement meeting.

Track plotter

The track plotter shows a continuous track of the vessel's movements. Important positions (fishing positions, harbours) can be logged into the track plotter, allowing the vessel to return to these exact positions. It is usually linked to the GPS and can be used with the auto-pilot to guide the vessel to a specific position. The track plotter may be connected to other pieces of electronic equipment and may display values such as the sea-surface temperature, etc. on its screen.

Weather facsimile

Weather reports and fishing maps are received by fax using the Inmarsat C telecommunication service. Reports may be received daily or on demand.

SST gauge

The SST (sea surface temperature) gauge displays the temperature on the surface of the water/ocean. Sometimes, observers will not be able to see the SST gauge itself, but the sea surface temperature will be displayed on the track plotter or on another piece of electronic equipment. In these cases the 'Y' (yes) for SST gauge should still be circled.

2. Electronic equipment for which make and model numbers are required

			USAGE	MAKE	MODEL	COMMENTS
*	NEW	− · − · − · − ·	Y Ⓝ	− · − · − · −	− · − · − · − · − · − · − · − · − ·	− · − · − · − · − · − · − · − · − · −
	NEW	− · − · − · − ·	Y Ⓝ	− · − · − · −	− · − · − · − · − · − · − · − · − ·	− · − · − · − · − · − · − · − · − · −
	SONAR		Y / Ⓝ	− · − · − · −	− · − · − · − · − · − · − · − · − ·	− · − · − · − · − · − · − · − · − · −
	RADIO BEACON DIRECTION FINDER		Ⓨ N	OIF	Koden	KS − 541	Six call-up radio buoys
	GPS BUOYS		Ⓨ N	ALL	Rykoseihei	KD − 475	How many ? 4
	DOPPLER CURRENT METER		Y Ⓝ	OIF	Furuno	GP−746	Always checked during setting
	XBT (BATHYTHERMOGRAPH)		Y Ⓝ	− − − − − − − −	− − − − − − − − − −	− − − − − − − − − −
VMS − 1	System:	FFA	Ⓨ / N	ALC	Trimble	13574X	Seals intac Y / N
VMS − 2	System:	Argos	Ⓨ / N	ALC	Trans Trans	4985IX	Seals intac Y / N / ⓃⒶ
COMMUNICATION SERVICES	PHONES	SATELLITE:	Y Ⓝ	Phone # − · − · − · − · −	MOBILE: Ⓨ N	Phone # (691) 582521
	OTHER	FACSIMILE:	Y Ⓝ	Fax # − · − · − · − · −	EMAIL: Y Ⓝ	Email: kap5@server.fm
INFORMATION SERVICES	WEATHER	WEATHER FAX	Y / Ⓝ	SATELLITE MONITOR Ⓨ N		
	OTHER	Y Ⓝ	Phytoplankton Y / N	SST Y / N	Sea Height Y / N	

It is possible that changes in the design of some types of equipment could lead to bigger catches. Scientists may be better able to identify changes that have significant impacts on fishing if they can look at observer records to see when fleets started moving from one particular make and model to another one.

Make / model

If 'Y' (yes) is circled to indicate the electronic equipment is onboard, the make and model number should always be provided. Usually the make and model number are clearly marked on the front of the equipment. Occasionally they are on the back, or marked in Chinese characters.

Make

The make is often a single word stating the name of the manufacturer (e.g. Koden, Furuno, Sailor, etc.) or a series of letters that are an abbreviation of a name (e.g. JRC – Japan Radio Company).

Model

The model is often a series of numbers and letters. Record all of these numbers and letters.

Comments

Record brief comments, or any extra information that has been discovered about the electronics that might be useful. This may include notes on any malfunctions during the trip, comments from the captain about the item (it is good, unsatisfactory, due for replacement, etc.). Comments can continue on to other lines, but it should be clear which piece of equipment the comments refer to. Use brackets and arrows if necessary. Comments should always be used to explain why any of the make and model information was not filled in, and to direct the reader to the diary page where any comments are continued.

* NEW

Observers should use these blank lines to fill in any new pieces of electronic equipment that they have not seen before or do not recognise. *Do not* use these vacant lines to fill in other standard pieces of electronic equipment that are normally found onboard, such as radios, etc. If you do want to record a new piece of electronic equipment circle 'Y' (yes) and fill in the make and model information, otherwise circle the 'N' (no) and put dashes in the make and model data fields.

Sonar

The sonar displays solid objects in the water column below or to the side of the vessel. Sonars are more commonly seen on purse-seine vessels but may also be seen on larger longliners.

Radio beacon direction finder

The radio beacon direction finder (RDF) is used to locate radio buoys (beacons) that are attached to the mainline. They help the vessel to locate its mainline.

Depending on the model, the RDF may work in different ways. It may search for a particular radio frequency, either punched in (using a key pad) or dialled in (using a knob) by the captain. Alternatively, it may just scan for the strongest radio signal. When it finds a strong signal, it lets the operator know what frequency the signal is operating at. The operator can then decide whether to use the RDF to find the source of the signal. It may be a signal sent from the vessel's own object (usually a radio buoy), or it may be a signal sent from some other vessel's radio buoy. The radio beacon direction finder indicates to the user the direction the vessel should travel towards to locate the source of the signal (radio buoy). The radio buoy is often referred to as a radio beacon.

GPS buoy

The GPS beacon works in the same way as a radio buoy except that, with the help of satellites, the GPS beacon transmits the exact position (latitude and longitude) of the buoy to the vessel. Some may also transmit the surrounding sea-surface temperatures. Checking for the console in the wheelhouse that shows the GPS buoy latitude and longitude reading will help you identify GPS buoys.
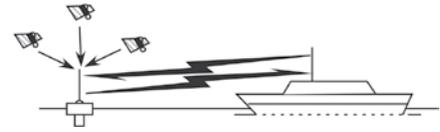
Doppler current meter

The Doppler current meter displays the direction and strength of the current at various depths. The current's strength is displayed in knots and the current direction is displayed in degrees.

XBT (bathythermograph)

Expendable bathythermographs collect information on the temperature of the water column. Continuous temperature readings are taken by the descending falling probe, thus showing the temperature structure of the ocean. The information is used to find thermoclines, ocean fronts or current eddies that will indicate the presence of fish/tuna.
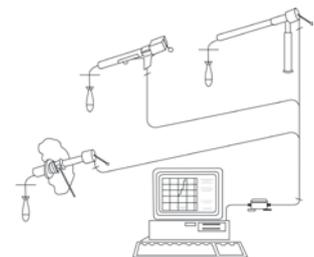
Expendable XBT

Vessels may have automated or manually operated XBTs. If an XBT is used by the vessel, a probe will be deployed regularly.

VMS-1 and VMS-2
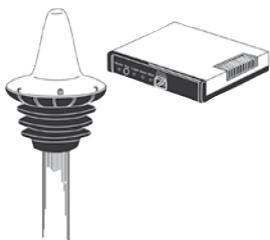
The VMS (vessel monitoring system) is the system that tracks the vessel's position using satellite technology. The system relays the position to a monitoring station on-shore. Observers should be able to identify the ALC (automatic locator communicator) box or 'black box' in the wheelhouse. This transmits the signal to the satellite. The box may make a beeping sound at constant intervals, but this can be turned off. A silver seal marked with seal numbers seals the sides of the ALC. There may be two or three seals stuck on the side of the ALC. Observers are requested to check whether the seal is intact and has not been tampered with. Some vessels may have more than one VMS onboard because of different licensing conditions. Observers should record the information about each VMS.

System type

The system is the name of the organisation that is running the VMS service. The most common system required by FFA member countries is the FFA system, however the 'Argos' system is also used in the Pacific region. Record all of the VMS types installed on the vessel, i.e. FFA approved, Argos etc.

ALC make

Record the make of the ALC, i.e. record the name of the ALC manufacturer — Trimble, Furuno, etc.

ALC model

Record the ALC model number. If it is hard to get the model number (because it was not visible, etc.) remember to put dashes in the data fields and make a comment as to why you could not get this information.

Notes on the use of the term ALC. The 2007 edition of the observer forms uses the term ALC. We do recognise that new terms for this piece of equipment are slowly being introduced and it is possible that observers may start to hear the term MTU (mobile transmitting unit — a unit that meets the basic functional requirements for VMS) or the term E-MTU (enhanced mobile transmitting unit, a unit that meets the enhanced functional requirements for the transmission of data (e.g. can transmit catch data to FFA).

Seal intact

FFA systems have seals placed on their ALC boxes. Decide whether the seal has been tampered with or not. An intact seal will be bright silver in colour, while a seal that has been tampered with will probably have black crinkly lines through it.

Communication services

The vessel may have access to a variety of communication services, such as telephone, telex and email, via satellite technology. Three types of services are available: Immarsat A and B provide telephone, telex, fax and data transmission. Immarsat B is a digital system with cheaper telecommunications rates. Immarsat C provides telex (fax), data transmission and internet.

Ask the captain for the contact details for the vessel and record them in the data fields.

Phones

If the vessel has a phone onboard, fill in the full phone number on the form. Remember to include the full access numbers.

≫ *Satellite / Phone #*

Fill in the number of any satellite phones the vessel may have.

≫ *Mobile / Phone #*

Fill in the number of any mobile phone that the captain or vessel may have. If they have a number of different mobile phone numbers (for different locations / ports for instance) record additional numbers in the written report.

Other

If the vessel has other ways of communicating record the details here. Remember to include the full access numbers if required.

≫ *Facsimile/ Fax#*

Fax #: If the vessel can receive faxes, fill in the fax number(s) used to receive faxes. Remember the access numbers.

>> *Email / Email*

Email: If the vessel can receive emails, fill in the email addresses. This will help your observer programme contact the vessel in the future.

For phone and fax, remember to record all access numbers, i.e. the numbers that go before the vessel's actual number. The access numbers show which ocean the vessel is in.

Information services

Weather

Circle Y or N to show if the vessel has the following two pieces of equipment to receive up-to-date weather information.

>> *Weather fax*

Weather reports and fishing maps are received by fax using the Inmarsat C telecommunication service. Reports may be received daily or on demand.

>> *Satellite monitor*

Vessels receive the latest weather reports and maps with this fax machine using Inmarsat C telecommunication. Reports may be received daily or on demand. The satellite monitor may look like a computer screen.

Note: there is a blank data field beside the satellite monitor data field; it can be left blank or filled in with a dash.

Other

Fishery information services provide vessels with up-to-date data on various oceanographic features via the internet. A vessel will need to have an onboard computer and internet connection to access these services. However, sometimes the vessel's headquarters may download the information and fax it to the vessel.

>> *Phytoplankton:*

Circle 'Y' (yes) and state the website address (e.g. www.catsat.com) if the vessel is receiving any maps of phytoplankton/algae concentrations.

>> *SST:*

Circle 'Y' (yes) and state the website address if the vessel is receiving any maps of sea-surface temperatures.

>> *Sea height:*

Circle 'Y' (yes) and state the website address if the vessel is receiving any maps on differences in sea heights in the ocean.

Caution: Remember to circle 'N' (no) for all the data fields on this line if there are no fishery information services available.

Fishing gear

| FISHING GEAR		USAGE
MAINLINE HAULER	(Y) / N	*OIF*
BRANCHLINE HAULER	(Y) / N	*OIF*
LINE SHOOTER	(Y) / N	*OIF*
AUTOMATIC BAIT THROWER	Y / (N)	—
AUTOMATIC BRANCHLINE ATTACHER	Y / (N)	—
WEIGHING SCALES	Y / (N)	—
* NEW*	N	—

> *Most fishing gear will be found on the deck of the vessel. The following section helps observers identify each piece of fishing gear requested on the LL-1 form and outlines how the gear is used.*
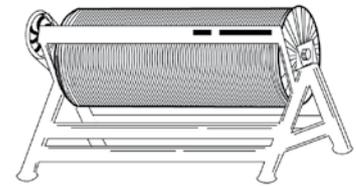
Mainline hauler

The mainline is threaded through the mainline hauler, which then pulls the mainline back from the water after the soak period. It is usually located on the starboard side of the vessel. There are different types of mainline haulers.

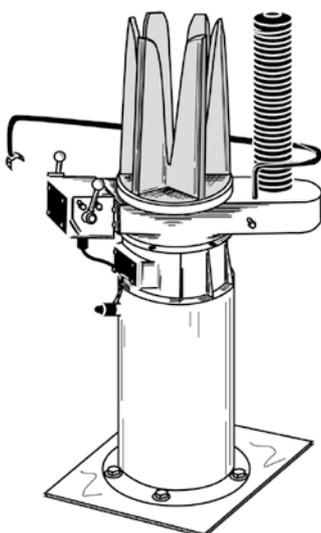
Traditional rope gear hauler
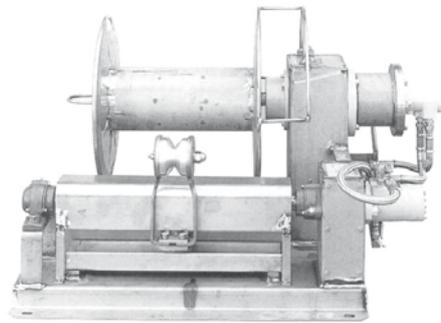

Japanese magu reel system


Monofilament reel system

Branchline hauler

Branchline haulers coil the branchlines quickly. They are usually located on the front starboard side, near the gate where the fish are landed. Not all longline vessels have branchline haulers. They are more commonly seen on larger Japanese vessels. Branchlines are more commonly coiled and retrieved by hand.

Line shooter
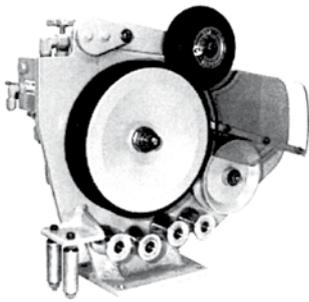
Monofilament gear

The line shooter is a piece of fishing equipment that sends out (shoots out or deploys) the mainline from the stern of the vessel. Smaller vessels may not have line shooters. The line shooter deploys the mainline at a speed set by the captain or fishing master. By adjusting this speed, the captain can control the depth the mainline will fish in.
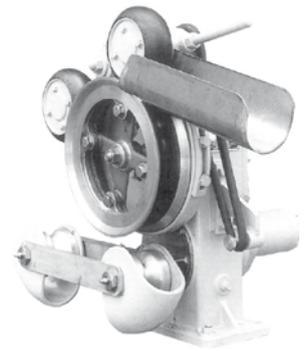

Rope gear

Automatic bait thrower
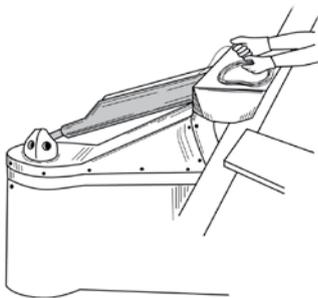
Some large, modern longline vessels use automatic bait throwers. They are generally only seen on larger Japanese vessels. Bait throwers are usually located at the stern of the vessel. They ensure that the bait is thrown well clear of the vessel's wash so it sinks more quickly and without tangling. This is especially important if there is a problem with sea birds.
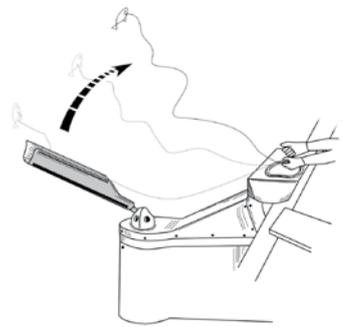
Automatic branchline attacher

The automatic branchline attacher machine attaches the snap of the branchline to the mainline during setting. This helps to reduce the number of crew required for setting. These machines are often located at the stern of the vessel but are not commonly seen in the region, except on some large Japanese vessels.

Weighing scales
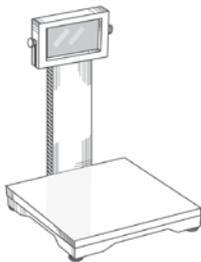
A balance weighing scale may be seen on some of the larger longline vessels. Circle 'Y' (yes) if there is one onboard. A hand scale may also be in use. Note the type of weighing scales used in section 10.0 (Vessel's own data collection) of the written report.

Supplementary hauling gear
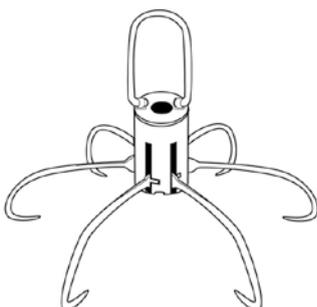
The following items are not requested on the LL-1 form, but may be seen on some vessels. If seen they can be reported on in the trip report in the 'Hauling fish onboard' section. Tuna missiles help haul up large tunas without marking them. A small hydraulic winch may also be used to land larger fish. Electrocution rings may be used, especially in a shark fishery. An electric charge is sent down the line to stun the fish before landing it.
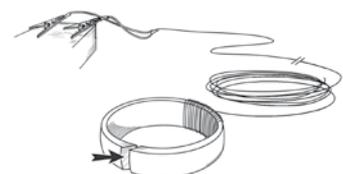
*NEW

Use these blank lines to record any new pieces of fishing gear that are not normally seen on a longline vessel. Do not record standard pieces of fishing gear that are seen onboard most vessels. For new observers this job will be more difficult as every piece of equipment will be new to them. However, if observers have not been shown the piece of equipment during training, or it is not outlined in this guide, then they should assume that it is a new piece of equipment.

Fishing lines

MAINLINE:	MATERIAL	LENGTH	DIAMETER
	Monofilament	45 nM	**4** mm

BRANCHLINE MATERIALS:	1) *Monofilament*	WIRE TRACE:
	2) _._._._._._._.	
	3) _._._._._._._	(Y) N

Mainline: material
Record the type of material the mainline is made out of. Refer to the horizontal longline fishing manual for fishermen for further information. The standard materials used in mainlines currently are:

Monofilament:	single strand, colourless, see-through, synthetic material.
Braided monofilament:	several monofilament lines of smaller diameter braided together.
Tarred polyester line:	often highly coloured, synthetic material, not see-through.
Kuralon:	rope-like, natural material covered with a tar solution.

Mainline: length (nm)
Ask the Captain what is the *maximum length* of the mainline. He can judge the length of his mainline by using his track plotter. The length of the mainline should be recorded in nautical miles (nm).

The value should always be recorded as a whole number (see 'Rounding off to the nearest value', page 21).

Mainline: diameter
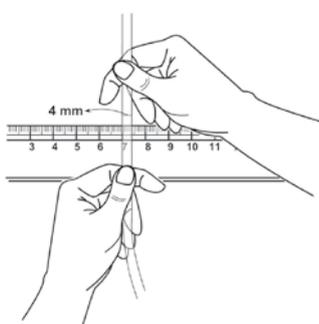
The observer should measure the diameter of the mainline. Place the mainline against the callipers or a ruler to read off the width of the mainline.

The value can be recorded up to one decimal place.

Branchline materials

Note down what line or string materials are used to make the branchline. It is not necessary to record any of the other pieces of material that make up the branchline (like crimps, snaps, etc.). Just record the key line materials.

Most branchline materials will be made from either:

≫ Monofilament line: see-through, colourless, synthetic material
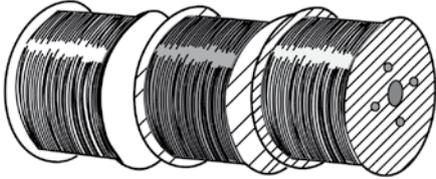
≫ Tarred rope: rope-like, natural material
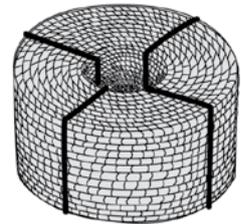
≫ Tarred red polyester line: highly coloured, synthetic material
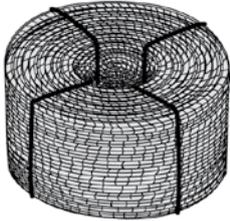
≫ Sekiyama wire   central wire, bound with cotton or synthetic fibre, usually tarred.
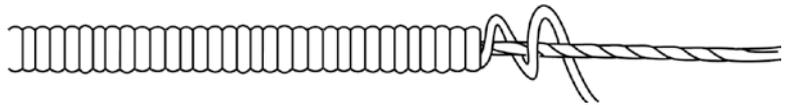
It is helpful if a drawing of the branchline is made in the trip report.

Wire trace

Wire traces are short pieces of wire, often added to the end of the branchline to strengthen the line and prevent marine species biting through it. Indicate if any of the branchlines have wire traces added by circling either 'Y' (yes) or 'N' (no). If wire traces are added to some, but not all, of the branchline lines give an outline of the pattern in the 'Branchlines' section of the written report.

Hooks

HOOKS	JAPAN		CIRCLE		"J"		OTHER		
	size	%	size	%	size	%	type	size	%
	3,4	80	14/0	20					

Fishers have different preferences when it comes to hooks. They base their selection on the target species, method of capture, time fish needs to stay on the hook, bait and baiting procedure, and what the individual fisher thinks is best. Generally, commercial longline tuna fishers use three types of hooks.

Three standard types of hooks are used.

Japan
(1)   The standard Japanese tuna hook.

"J"
(2)   The J-hook, which has the same general design as the Japanese tuna hook, but is generally a lot larger. The J-hook has advantages when fishing for swordfish as it grabs a larger portion of the fish's flesh. (The lower jaw of the swordfish is fragile and likely to fall away if the standard Japanese tuna hook is used.) However, J-hooks are frowned on by environmentalists as they also grab a larger portion of a turtle's flesh, reducing its chances of survival.

Circle
(3)   The circle hook. These are less likely to be ingested by turtles and are therefore preferred by environmentalists. In fact, some vessels are required to always use circle hooks (i.e. in Hawaii).

Japan hook   *J-hook*   *Circle hook*

Other

Size
Note down the size of the hook used (under each of the relevant hook type categories). If there is more than one size used for any one type of hook record the main size on the form and record the other sizes initially in the comments section, but also in your diary (if you need more space) and finally in your trip report. Use the standard fishing terminology for recording the size of the fishing hook. This can be found on the side of the boxes that contain the spare hooks.

% (Percentage)
*Calculate the total percentage of each type of hook when compared to the total number of hooks that were used during the trip.*

Safety equipment

SAFETY EQUIPMENT							
LIFE JACKET	PROVIDED FOR OBSERVER:		(Y) N / O			No. of	
	SUITABLE SIZE:		(Y) / N			**LIFE BUOYS / LIFE RINGS**	
AVAILABILITY (circle one)	(Easy)		Moderate		Hard	4	
EPIRBs (No)	Total	Exp.	**LIFE RAFTS**	1	2	3	4
406	2	0	No. of people and Inspection due date (D) or	8	10	– . –	– . – . .
other	– . – . –		last date of inspection (L)(D-mm/yy or L-mm/yy)	L10/07	L09/07	– . –	– . – . .

Observers should check on the safety equipment as soon as they board the boat. It is important for the observer's own security to know where all the safety equipment is located. A first priority is to ask where the observer's lifejacket is located. Keep an eye out for all safety equipment throughout the voyage, but especially during the first day. More safety equipment may be seen later on when observers get to know their way around the vessel and develop better relationships with the officers and crew. Collect as much of the safety equipment information as possible without intruding. For example, do not search for lifejackets in personal storage areas – ask first!

Lifejacket
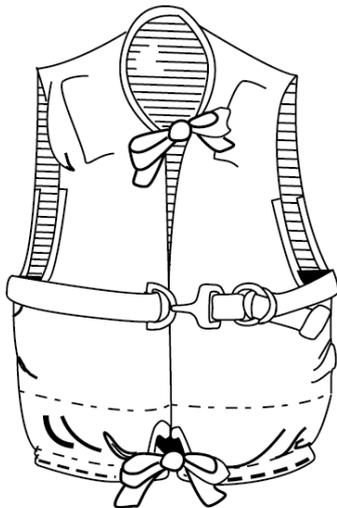
Observers should:
Circle 'Y' (yes) if they are provided with a lifejacket by the vessel.
Circle 'N' (no) if they are not provided with a lifejacket by the vessel.
Circle 'O' (for own) if they have their own lifejacket or were supplied with one by their fisheries department.

Suitable size
Circle 'Y' (yes) if the lifejacket provided to the observer (by the vessel/fisheries) is a suitable size.
Circle 'N' (no) if the lifejacket provided to the observer (by the vessel/fisheries) is not a suitable size.

If the lifejacket is damaged, mention this in the trip report.

Availability
Select one of the following choices, *Easy / Moderate / Hard*, to indicate how accessible the lifejacket is. To answer this question, observers might like to think about how they would get the lifejacket if they were in their bunk or working on the deck when there was an emergency.

Life buoys / Life rings
Walk around the deck and outside passageways and count the total number of life buoys/life rings. If some of the life buoys are damaged, count them but note the type of damage in the written report.
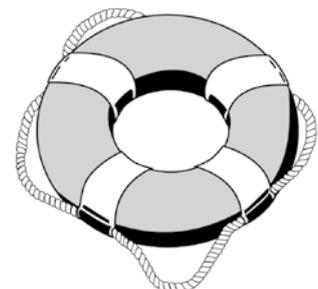
EPIRBs

EPIRBS are emergency position-indicating radio beacons. They work by sending signals to satellites, over flying airplanes or emergency radio stations, depending on the type of EPIRB used. Current models of EPIRBs emit the exact GPS location so rescue teams can fly straight to the EPIRB. EPIRBs are often found inside the wheelhouse door. Smaller hand-held or personal EPIRBS may also be kept in the living quarters.

The 406 MHz frequency signal has been designated internationally for distress use only. Any 406 MHz signal emitted from a triggered EPIRB will be picked up by satellites. The signal can help to locate the EPIRB within a 2–5 km range (versus 25 km for the older 121.5 model) and also identities the vessel/user. The older 12.5/243 MHz signal, which was generally only picked up airplanes, is being phased out. Observers should note in their written report if any of these models are still being used on the vessel.

≫ *Number*

Record the total number of EPIRBs found on the vessel. Remember to ask about any hand-held or personal EPIRBs that the captain or other officers may have.

≫ *Exp (Expiry)*

Record the number of EPRIBs that have a battery renewal or inspection date that has already passed.

Caution: EPIRBs may also be located inside life rafts. Do not open up life rafts to check for EPIRBs and do not count EPIRBs if they cannot be seen. Make a note in section 4.7 (Safety Equipment) of the written report if the captain confirms that there is an EPIRB inside the life raft.

Life rafts
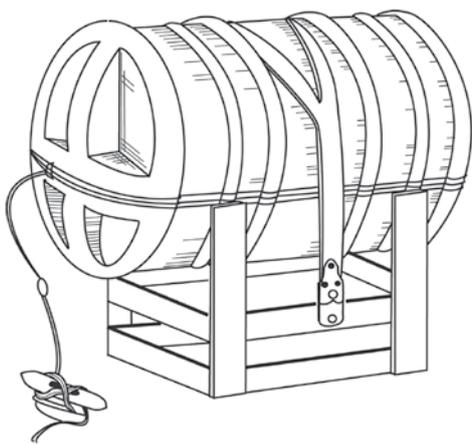
Life rafts will be kept outdoors where they can be easily thrown into the sea in case of an emergency. Information about the carrying capacity and service expiration dates will be printed on an attached label or sticker. Check this information and record it on the forms.
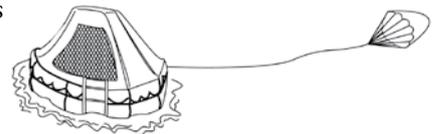
In the top data field record the number of people the life raft can carry. In the bottom data field record the inspection due date or the last date of inspection. To indicate the inspection due date, mark the letter 'D' before the date. To indicate the last date of inspection mark the letter 'L' before the date.

If the carrying capacity or service dates are not displayed mark 'ND' for not displayed in the data fields. 'ND' should only be recorded if the observer has had the opportunity to fully inspect the life rafts and has not been able to find the information — due to weather damage, etc. If the observer was not able to check the life raft — because it was stored too high up, etc. — then they should place a dash in the field and write a comment in the comments section and / or their diary and written report as to why they could not get this information.

Refrigeration method

| REFRIGERATION METHOD				
BLAST FREEZE	Y / (N)	REFRIGERATED SEA WATER / BRINE	Y / (N)	OTHER STORAGE (describe in trip report)
ICE	(Y) / N	CHILLED SEA WATER	(Y) / N	Y / (N)

Indicate the type of refrigeration method used by the vessel to store the catch. Do not use the 'Refrigeration method' data fields to record how bait or other perishable items are stored. If more than one refrigeration method is used to store the catch, indicate this by circling 'Y' (yes) for every refrigeration method used.

Blast freezer

Larger longline vessels that go to sea for long periods often use a blast freezer. A separate freezer hold is used to store the fish at between -18°C and -65°C mainly for the Japanese sashimi market.

Ice
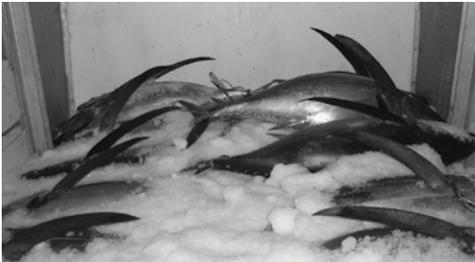
Vessels doing shorter trips often use flake ice for storage. Ice is often taken onboard the vessel before it leaves port. Some boats are equipped with ice-making machines. The fish hold is sectioned off with boards. Fish are first held in one area until their core temperature is brought down. They are then stacked in ice in another section of the hold.

Refrigerated sea water

Some vessels store fish in a tank of refrigerated sea water (RSW). The water temperature is maintained at around -1°C. The water is pumped through the refrigeration unit and the temperature is checked frequently. The fish are dropped into the tank slowly to avoid damage and normally come to rest at the bottom of the tank. The water in the tank is a mix of around 80–90% fresh water and 10–20% sea water.

Chilled sea water

Target species are often first preserved under chilled sea water (CSW), often called slurry, for several hours before they are finally removed and preserved under flake ice. This helps to lower the core temperature of the fish quickly. CSW is a mixture of ice and sea water in a 2:1 ratio. Ice is continuously added to the slurry as the ice tends to melt when more fish are added.

Other storage methods

If the vessel uses any other storage methods, circle 'Y' (yes) and write about the storage method in section 4.8 (Refrigeration method) of the written report.

Observations/Comments: Other gear / Unusual use of gear

Observers will find that this comment area is easier to fill in as they become more experienced. In this area, observers are asked to note anything special about the vessel, the equipment or crew. Pay special attention to any new electronic equipment or new fishing gear, as well as any new or unusual techniques for using fishing gear or electronics. New technology or fishing practices may result in higher catches for a vessel, or a fleet of vessels, so it is important we learn about them straightaway. Write a brief note on the form about these observations and indicate the page number in your diary where more information can be found. Use the daily diary to fully document any observations you had regarding new gear or fishing practices during the day. Summarise these notes clearly in the relevant section of the trip report. Expand on these comments in section 4.7 of the written report.

How many fishing operations do I have to observe?

The amount of time observers need to spend on deck on longline vessels will depend on the total number of hooks set by the vessel. Some vessels will set a comparatively small number of hooks and observers should have no problems monitoring every single part of the fishing operation. However, some of the larger longliners will set large numbers of hooks and have two teams working in rotation, making it difficult for one observer to monitor every fishing operation.

Observers are required to fully monitor all periods of the fishing operation. A fishing operation includes the set and the haul periods. However, **observers can choose the number of fishing operations that they will fully monitor**. This choice should be based on the average number of hooks being set by the vessel. A rough guideline for how many fishing operations should be monitored by observers on longline vessels is given below. All observers are encouraged to aim for 100% coverage of all fishing operations. Many observers achieve this, and national coordinators are requested to recognise observers who make the extra effort to monitor as many fishing operations as is comfortably possible.

If observers are not able to achieve 100% coverage, they should follow these rough guides for choosing how many fishing operations to monitor:

>> For vessels setting less than 1000 hooks, the observer is expected to monitor every fishing operation.
>> For vessels setting between 1000 and 2000 hooks, the observer is expected to monitor two out of every three fishing operations.
>> For vessels setting more than 2000 hooks, the observer is also expected to monitor two out of every three fishing operations. However, on especially long trips (over one month), observers are advised to keep their own personal well-being in mind and are permitted to take additional rest days if necessary.

?
Can I never take time off during the setting period?

Observers are required to be on deck and to fully observe the set for the first three fishing operations that they choose to monitor. After three sets, observers are only required to be on standby – to monitor the start and end of sets and carry out periodic checks during the rest of the setting periods (see 'Monitoring the set, page 52).

?
Can I never take time off during the hauling period?

It is important that observers make a determined effort to monitor all of the hauling period, although of course they may need to leave the deck occasionally to go to the bathroom or eat a meal, etc. However, they should get back out on deck *as soon as possible*. Observers must fill in a line on the LL-4 form when they leave and return to the deck. They are also required to note the number of baskets they have monitored during the hauling operation to allow scientists to calculate the amount of the haul that has been observed (see 'Monitoring the haul, page 69).

?

•   *What sort of things should I do on my rest days?*

Caution: Even on rest days the LL-2/3 form must be filled in.

Rest days are days with fishing operations that the observer has chosen not to monitor. Observers must directly observe the start and end of the set, and the start and end of the haul and record these times and positions <u>for every fishing operation made by the vessel</u>. This includes fishing operations that observers have chosen not to monitor.

Example of a properly completed LL-2/3 form for fishing operations not monitored by the observer.
When not monitoring, observers can use the rest days to:

1. Get some rest.
2. Continue to fill in the relevant GEN forms. Watch out for any sightings of other vessels or aircraft, sightings of or interactions with species of special interest and pollution infringements. Record these events on the relevant GEN forms. (Note: There is no need to record **landed** species of special interest during rest days. These should only be recorded on the LL-4 form <u>and</u> the GEN-2 form when the observer is monitoring the haul.) Review the GEN-3 form at the end of the day and make sure that any infringements or attempts to infringe have been properly documented in the observer's diary.
3. Take photos (for example, of the vessel, the gear and marine species).
4. Work on biological sample requests if necessary, and if possible. Many biological requests will require observers to fill in the LL-2/3 and LL-4 forms, so biological sampling may not always be possible on rest days.
5. Ensure that any previously collected samples are properly labelled and packaged and the forms are correctly filled in. Check to see that samples are correctly stored, have not been moved, and are not in a position that may cause problems for others.
6. Collect conversion factor information on form GEN-5, if trained and if requested to do so.
7. Check how the vessel is using its electronics and fishing equipment. In particular, note how the electronics are being used during fishing. Make notes on this so the usage codes on LL-1 can be properly filled in before the end of the trip.
8. Gather extra information about the vessel and its fishing strategy.
9. Fill in the diary.
10. Check the completed data forms; make sure every data field is filled in or a dash is inserted.

11. Work on the trip report. Look at the type of questions that are asked and make notes on these topics in the diary. This will make it easier to complete the trip report later.

? *What about days when the vessel does not set the mainline?*

If the vessel does not set the mainline on any day, due to a long transit period, etc., it is not necessary for observers to fill in an LL-2/3 form as there is no fishing operation to record. However, it is a good idea to make a short comment on the next LL-2/3 form that is filled in, explaining why there is no LL-2/3 form(s) for the previous day(s).

During days when the vessel does not set the line, the observer can also carry out many of the items listed above, except for points 4 and 6.

Form LL-2/3 Set and haul information

Data submitted

At least one LL-2/3 form must be filled in for every single fishing operation made by the vessel. An LL-2/3 form is required even if the observer chooses not to monitor the fishing operation. A second LL–2/3 form may be necessary for a fishing operation if the observer has made numerous haul time and position records.

Header details

REVISED DEC. 2007					
OBSERVER NAME	VESSEL NAME	OBSERVER TRIP ID NUMBER	SET No.	PAGE	OF
Leban Benson	Kap Fresh # 5	LAB 08-03	2	2	15

The header details *must be fully filled in on every completed form* (for information on observer name, vessel name, observer trip ID number and page number, see 'Header details', page 13).

Set no.

Set numbers are recorded in the order that they happen while the observer is onboard the vessel. As observers fill in an LL-2/3 form for all fishing operations (even those they do not monitor) the observer's set number will normally be the same as the vessel's set number. There may be exceptions to this if the vessel starts a new set in the middle of the setting period (see 'Starting a new set in the middle of the setting period', page 53).

Monitoring the set

The time and position for the start and end of every set must always be observed directly and recorded by observers, even on their rest days (the time and position for the start and end of haul positions should also be recorded for every haul made by the vessel). Observers must make an effort to always record this information and should ask the captain and crew to wake them up at these times.

Observers are required to fully monitor all of the first three fishing operations they decide to monitor. 'Fully monitoring' the set means being on deck for all of the setting period. This allows observers to see for themselves how the setting is done and what the standard setting specifications are. After the first three sets, observers can stay on standby during the setting periods. Standby is not a time for sleeping however. During standby observers should make regular visits to the deck. These visits should be long enough to confirm and record information on setting specifications. Additionally, it is important that observers are always present on deck for about 30 minutes at both the start and end of setting for every fishing operation they choose to monitor. This is because changes are often made to the setting specifications at these times.

When the setting specifications are the same for each basket during setting, observers only need to confirm this while on deck. The setting specifications can be cross-checked again during the hauling period. However, if the setting specifications for a basket change within the setting period, then observers need to pay close attention and spend more time on deck during the setting period. They should also keep an eye out for any setting specifications that change near the end of the setting period.

Extended time should be spent on deck to monitor the set if:
    (1) The setting specifications change between different baskets.
    (2) The vessel changes its target species during setting (see 'Change of target species during setting', page 59).
    (3) The vessel deliberately starts a new set (see 'Starting a new set…', page 53).

If the observer fully monitors the first three sets, they will get a good idea if the vessel uses any of these tactics (1–3). If tactics 2 and 3 are used by the vessel, then the observer will need to stay out on deck for most of the setting period to record exactly when these changes are being made, and to be ready to start a new LL-2/3 form (see 'Starting a new set…', page 53).

However, the vessel may suddenly start using such tactics after the first three sets. In these cases, observers should be able to see the changes in the setting specifications during the hauling period and should change the way they monitor the following set. The observer will also need to go back to the LL-2/3 form and make a note in the 'Unusual set details' data field, stating that changes in the setting specifications were noticed during the haul and stating what the changes were.

Start of set

ALL MUST BE RECORDED	START OF SET					
	SHIP'S DATE AND TIME				h h	m m
	D D	M M	Y Y			
	28	06	08		06	30
	UTC DATE AND TIME				h h	m m
	D D	M M	Y Y			
	27	06	08		19	30

At the start of every set, fill in the 'ship's date and time'. Use ship's time (see 'Ship's time', page 16). This is the date and time that the first radio buoy/float is thrown into the water. The mainline will be attached to this radio buoy/float.

Also, the observer needs to convert the ship's time to UTC time. This can usually be done by looking at the GPS (see 'GPS', page 34) or by doing a simple calculation (see 'UTC time', page 16).

Starting a new set in the middle of the setting period.

The start of the fishing operation is defined as when the first radio buoy/float is thrown into the water.

However, there are two different scenarios that affect where the start of a new set will happen during setting. These are:
1) If the vessel changes its target species during the set (see 'Change of target species', page XX).
2) If the vessel cuts its line during setting (for example, due to the presence of whales) and moves a considerable distance (more than 2-3 nautical miles) away.

Caution: If the vessel starts a new set during the setting period, the observer should start a new LL-2/3 form with a new start of set date and time to indicate when this new set started. There will then be two LL-2/3 forms (or two groups of LL-2/3 forms) for what would ordinarily seem like one set. Make sure each LL-2/3 form is correctly matched with the correct LL-4 forms by indicating the correct start of set date and time and set number on each form.

Longline set specifications

LONGLINE SET SPECIFICATIONS							
No. OF HOOKS PER BASKET	25	LINE SETTING SPEED - m/s kts (circle one)	3,1	VESSEL SPEED FOR SETTING (kts)			6,7
TOTAL No. OF BASKETS	150	BRANCHLINE SET INTERVAL (s)	9	SHARK LINES on floats (Hook No.99s)			
TOTAL No. OF HOOKS	3000	BETWEEN BRANCHLINES (m)	28	Number.: _____		LENGTH (m):	_____
LENGTH OF FLOATLINE (m)	20	LENGTH OF BRANCHLINES (m)	15	WERE TDRs DEPLOYED ?			Y / (N)

Hooks/baskets
No. of hooks per basket
Count the *number of hooks in one basket*. To start this count, watch out for when a floatline is attached to the mainline. From this point on, count every single branchline that is then attached to the mainline. Stop the count when the next floatline is attached. This number represents the total number of hooks in a basket because the hooks are at the end of the branchlines.

In this example, there are 10 hooks in each basket.
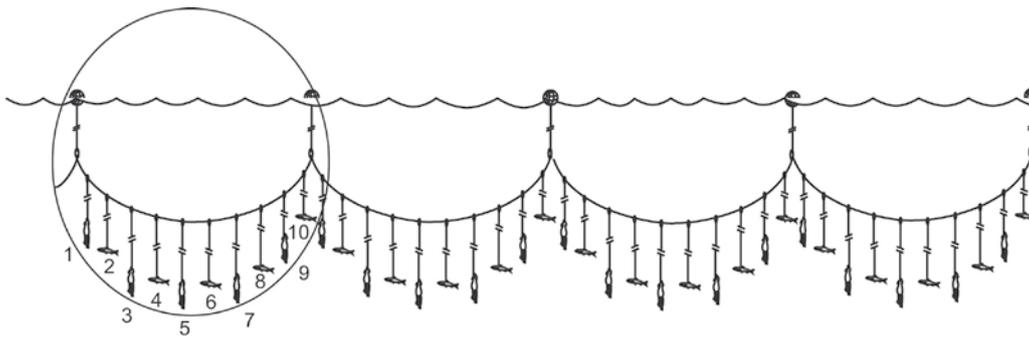
> **Caution:** These are not 'baskets', they are bins. Do not count the number of hooks in a bin.

» The recorded value should always be a whole number. The number can be cross-checked during the hauling period.

» If there are any *deliberate changes* made to the standard 'Number of hooks in a basket' value during the set, or between different baskets, record this information in the 'Unusual set details' data field. Be aware that if the crew puts in or leaves out one or two hooks by mistake – due to tiredness or lack of attention perhaps – this is not considered a deliberate change, so there is no need to fill in the 'Unusual set details' data field (see page 60).

Caution: When counting the 'Number of hooks per basket' do not count any branchlines that are attached to the floats. These are shark lines, not branchlines (see 'Shark lines', page 58).

Total no. of baskets

Count the *total number of baskets* that have been set by the vessel. This is best done by counting all the floats that are set by the vessel. The total number of floats attached to the mainline minus one equals the total number of baskets. Watch out for radio buoys, which replace floats in some baskets. They also need to be counted. Counting the total number of floats set by the vessel is best done during the first three sets, which observers are required to monitor fully. After that, it is okay to ask the captain the total number of baskets that were set. This number can be cross-checked during the hauling period by counting every one of the floats hauled back in.

Total number of baskets = Total number of floats **minus one**

In this example, there are five floats so the total number of baskets is four.
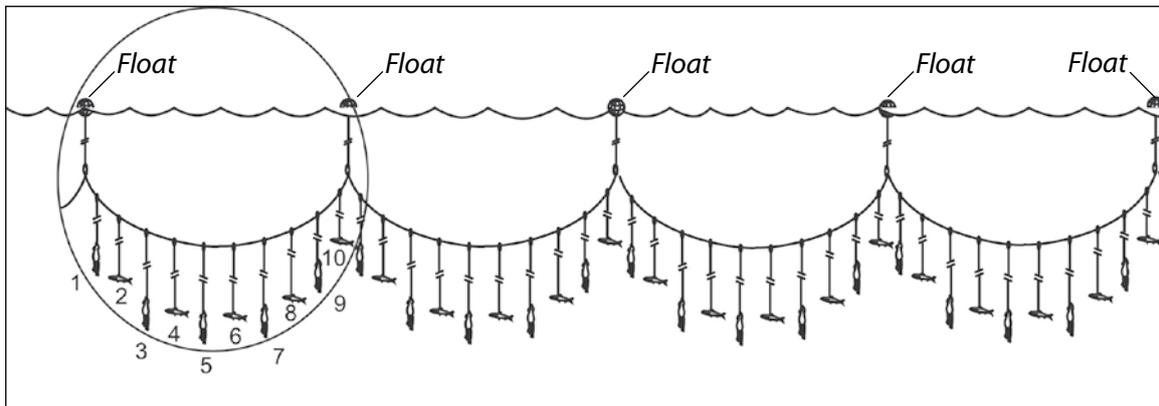
≫ The recorded value should always be a whole number.

≫ As the *total* number of baskets is requested, there are no unusual set details for 'Total no. of baskets'.

Total no. of hooks
Calculate the *total number of hooks* set by the vessel. There is no need to count every hook that is thrown into the water during setting to do this. All that is required is a simple calculation using the values for the 'Number of hooks per basket' and 'Total number of baskets' that have already been recorded.

> Total number of hooks = Number of hooks per basket multiplied by total number of baskets

≫ The recorded value should always be a whole number.

≫ As the *total* number of hooks is requested, there are no unusual set details for 'Total no. of hooks'.

However, if *deliberate changes* are made to the standard 'number of hooks per basket' value during the set, then the 'total number of hooks' value cannot be found with one simple calculation. In this case, several calculations have to be done to get the 'total number of hooks' value. For instance, if the vessel sets 110 baskets with 25 hooks per basket and then sets 45 baskets with 7 hooks per basket, the total number of hooks set will be (110 x 25) + (45 x 7) = 3065.

Line lengths

Length of floatline (m)
Measure the length of the floatline *in metres* using the callipers. Measure more than one floatline to get the average length of the floatlines.
≫ The recorded value should always be a whole number. If the calculated value is not a whole number, then round the value off to the nearest whole number (see page 20).
≫ If there are any *deliberate changes* to the standard floatline length value during the set, or between different baskets, record this information in the 'Unusual set details' data field. Be aware that if only one or two floatlines are slightly shorter or longer than the rest, this is not considered a deliberate change.

Length of branchline (m)

Use the callipers to measure the length of the branchline *in metres*. Measure at least every single branchline in one basket. Measure the string part of the branchline (polyester, monofilament, wire trace). There is no need to include the snaps or hooks in the measurement. If all these branchlines are within a metre of each other, then calculate the average length from these measurements and record the data in the specified data field.

If the lengths of the branchlines in a single basket vary by more than one metre, then measure all the branchlines in another basket to find out if there is a deliberate pattern of different branchline lengths within a basket. It is also helpful to talk to the captain and the crew to find out if there are deliberate differences in branchline lengths within a basket.

If there are no deliberate differences in the standard length of the branchlines within a basket, but some lengths differ by more than one metre, then measure all the branchlines in three baskets. Use all these length measurements to calculate the average branchline length.

≫ The recorded value should always be a whole number. If the calculated value is not a whole number, round the value off to the nearest whole number (see page 20).

Setting intervals

Line setting speed – m/s or kts (circle one)
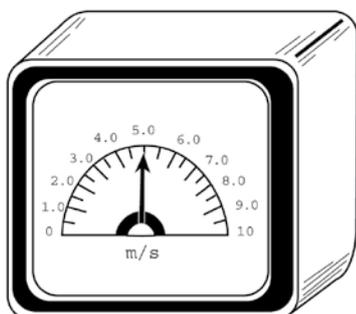
The line setting speed is *only recorded* when there is a line shooter onboard the boat with a visible line setting speed gauge. Record the line setting speed displayed on the gauge. If there is no line shooter onboard, or no visible line setting speed gauge, remember to put a dash in the data field.

Look at the line setting speed gauge to see which units of speed are being used. Circle the form to indicate the units of speed shown by the instrument – either in *m/s (metres per second)* or kts (*knots)*. Be careful to circle the correct unit. Most line shooters will display the line setting speed in metres per second. Vessels using monofilament reels to haul the mainline often display the line shooting speed in knots.

≫ The recorded value can have up to one decimal place. If the value has more than one decimal place, round the value off to the nearest one decimal place (see page 20).

≫ If there are any *deliberate changes made* to the standard line setting speed value between baskets, record this information in the 'Unusual set details' data field.

Branchline set interval(s)

Record the branchline set interval *in units of seconds*. This is best done when there is a line shooter onboard. The line shooter will make a sound to indicate when the crew should attach the branchlines. A different sound will be made to indicate when the floatline should be attached. This helps the crew maintain a constant distance between branchlines. The branchline set interval in seconds will often be shown on the line shooter instrument.

If no line shooter is onboard, observers can calculate the branchline set interval by using their watch to measure the average time between when two branchlines are attached. Measure this over at least three baskets and record the average branchline set interval value. Observers can also choose to put a dash in this data field if there is no line shooter onboard. Make a comment in the comments area on why a dash was inserted in the data field.

≫ The recorded value should always be a whole number. If the value calculated is not a whole number, then round the value off to the nearest whole number (see page 20).

≫ If there were any *deliberate changes* to the standard branchline set interval value between baskets, record this information in the 'Unusual set details' (see page 60).

Between branchlines (m)
Record the distance between the branchlines *in metres*. This is best done when there is a line shooter onboard. When a line shooter is used, the distance between branchlines can be calculated.

When a line shooter is being used then:

> Distance between branchlines = Line setting speed **multiplied by** branchline set interval

A small number of Chinese and Taiwanese vessels use a different method to indicate to the crew when the branchlines should be attached to the mainline. They pre-insert branchline attachment loops at standard distances in the mainline and tie the branchlines to these loops. On these vessels, measure the distance between branchlines by using the callipers to physically measure the distance between two branchline attachment loops. Measure this distance at least twice. If the values are not the same, then further measurements should be made to find the average distance between the branchlines.

≫ The recorded value can have up to one decimal place. If the value calculated has more than one decimal place, then round the value off to the nearest one decimal place (see page 20).

≫ Unusual set details are not required for the 'Between branchlines' data field. By recording any deliberate changes to the line setting speed and/or the branchline set interval, observers will ensure that any unusual set details for the 'Between branchlines' have been recorded.

Vessel speed

Vessel setting speed (kts)
Use the GPS to record the average vessel setting speed *in knots*. It is best to watch the GPS for several seconds at a time and also to check it a number of times during setting. If the speed varies, record the standard or most frequent vessel speed. Use the comments area of the LL-2/3 form to note down the vessel's speed during setting. This will ensure that observers are aware of the average vessel setting speed and will notice if it changes a lot.

≫ The recorded value can include up to one decimal place. If the value calculated has more than one decimal place, then round the value off to the nearest one decimal place (see page 20).

≫ Watch out for any *deliberate changes made* to the standard vessel speed value within the set and record these in the 'Unusual setting speed' data field. Vessels may deliberately reduce or increase their vessel speed at some point within the set to change the depth of the mainline (see page 60).

Shark lines

No. of shark lines (on floats) in set
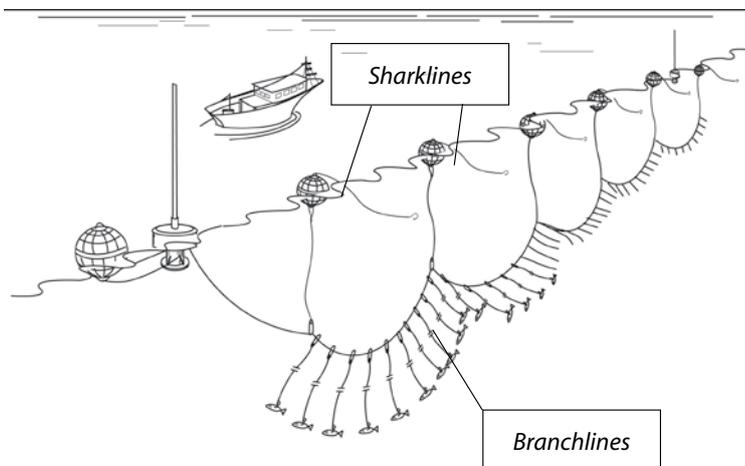
The total *number of shark lines (on floats)* is the total number of fishing lines that are attached directly to floats. They are different to ordinary branchlines, which are attached directly to the mainline. Shark lines often have larger hooks and are baited differently. These lines target species that are found in shallow waters, such as sharks. Physically count the number of shark lines that are attached directly to the floats during setting. If the shark lines are attached to every float, then the number of shark lines will be equal to the number of baskets plus one.

Additionally, when shark lines come up during hauling, they are given a special hook number when recorded on the LL-4 forms – hook number 99. This marks them out from ordinary branchlines (see 'Hook no.', page 62).

≫ The recorded value should always be a whole number.

≫ As the *total* number of shark lines is requested, there will not be any unusual set details for 'No. of shark lines'.

Note: If there are no shark lines, a zero can be written in the data field.

Length (m)

The *length of the shark lines in metres* should be physically measured using the callipers. Measure several shark lines and then record the average length.

≫ The recorded value should always be a whole number. If the value calculated is not a whole number, round the value to the nearest whole number (see page 20).

≫ If there are any *deliberate changes* to the shark line length value within the set, record this information in the 'Unusual set details' data field (see page 60).

TDR

TDR deployed
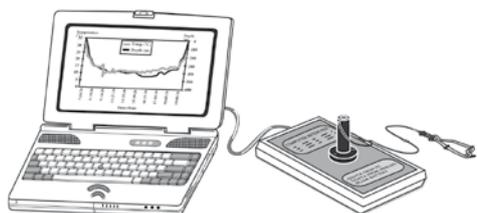
Temperature depth recorders (TDRs) are attached to the end of branchlines to record accurate temperature and depth information for the same depth of water that the rest of the hooks are fishing in. TDRs are expensive and only some observers will be given one. If required, training will be given beforehand.

Circle 'Y' (yes) if a TDR has been used by the observer during the set.
Circle 'N' (no) if no TDR has been used by the observer during the set.

Target species

Target species ('X' to indicate)

TARGET SPECIES ('X' to indicate)	
TUNA	**X**
SWORDFISH	—
SHARK	—

Indicate what the vessel's main target species was by placing an X next to the appropriate target species data field. The vessel's target species indicates the species *the vessel is attempting to catch*. It should not be used to indicate the type of species that were finally landed. Just because a certain species is landed does not mean it is a target catch. For instance, it is quite possible that a vessel that is targeting tuna will also catch swordfish and sharks as bycatch. In this case, only tuna should be ticked as the target species. Ask the captain what species is being targeted and confirm the response by looking at the gear.

Normally:
» Vessels targeting tuna will use standard Japanese tuna-hooks, set deeper lines (especially in subtropical waters), and bait them with mackerel, sardine or squid.
» Vessels targeting swordfish may use J-hooks, set shallower lines (i.e. put fewer hooks in a basket) and use squid and perhaps light sticks as bait. (Note: light sticks and squid are also used to target bigeye tuna, but the line will usually be set much deeper.)
» Vessels targeting sharks may use large Japanese tuna hooks, or J-hooks, and set shallow lines. The bait is likely to be chunks of tuna or bycatch rather than the standard bait species (mackerel, etc.).

*In some *rare* cases, more than one species may be targeted during one set. Generally, this will mean that both sharks and tuna will be targeted during the same set – sharks with shark lines and tuna with branchlines. Targeting more than one species may be illegal as many vessels only have a licence to target one species, normally tuna.

If more that one target species is ticked, comment on this in the comments section. Expand on these comments in the trip report. The observer should consider if targeting more than one species was a compliance infringement and report it (see 'Dealing with infringement issues', page 108).

Change of target species during setting

Some observers have seen vessels completely switch their target species from tuna to shark during the setting period. This may first be noticed by a change in the gear; for example, using fewer hooks in a basket (to give a shallower line), using chunks of bycatch as bait instead of the smaller standard sardine and mackerel, or using larger hook sizes.

If there is a very clear change in target species during the setting period, this must be recorded as the start of a brand new set (see page 53).

Unusual set details

The 'Unusual set details' data field should be used to note down any *deliberate or intentional changes* that are made to the standard setting specifications values during the setting operation. These changes could be made within a basket, between one basket and another, or made part way through the set. If such deliberate changes are observed, record the most common or standard value in the setting specification data field and give a short explanation of the other values in the 'Unusual set details' data field. If more space is required, use the comments area of the LL-2/3 form. Write a full explanation of the unusual set details in the trip report.

> ≫ Generally, deliberate changes will be made to improve the vessel's chances of catching its target species and these changes should be recorded in the 'Unusual set details' data field.
> ≫ On a few vessels, deliberate changes will be made to switch to a new target species. If this happens, the observer needs to start a brand new LL-2/3 form to record a new set (see 'Starting a new set…..', page 53).

Here are some examples of unusual set details:

? *What should the observer record if the vessel sets 5 hooks per basket for the first 60 baskets, and then deliberately changes this to 9 hooks per basket for the last 40 baskets? Should they record 5 hooks per basket, 9 hooks per basket, or perhaps the average value of 7 hooks per basket?*

Here the observer should record the number 5 (the standard value) in the 'No. of hooks per basket' data field and the number 60 in the 'Total number of baskets' data field and write a comment like "*5 hooks per basket for the first 60 baskets, then 9 hooks per basket for the last 40 baskets*" in the Unusual set details data field. The short note in the 'Unusual set details' data field should summarise what happened, but this note can be expanded on in the comments area or in the trip report.

Other examples of unusual setting details:

Two different floatline lengths

? *The vessel uses a 5 metre floatline on every second float; all other floatlines are 10 metres long. How is this recorded?*

A: The standard value 5 is recorded in the 'Length of floatline' data field and a comment like 'Every second floatline is 10 metres' is written in the 'Unusual set details' data field.

Note: This is a special case as there are two standard values, i.e. half the floatlines are 5 metres long and half of them are 10 metres long. In these cases, the observer can choose which value to record in the 'Setting specifications' data field and which value to record in the 'Unusual set details' data field.

? *The captain considerably increased the vessel speed for setting towards the end of setting. Mostly, the average speed was 5.5 knots, but near the end of setting, the vessel speed increased to an average of 7 knots. How is this recorded?*

The standard value 5.5 knots is recorded in the 'Vessel speed for setting (kts)' data field and a comment like 'The vessel speed increased to 7 kts, for the last 10 baskets' is written in the 'Unusual set details' data field.

Different branchline lengths

? *An observer found very different branchline lengths in the basket being measured. For example, the first five branchlines were 30 m, the next five were 20 m, the next five were 15 m, followed by another five at 20 m and five at 30 mm (5 x 30 m, 5 x 20 m, 5 x 15 m, 5 x 20 m, 5 x 30 m). How is this recorded?*

It is not obvious what the standard value is here. In total, there are ten branchlines measuring 30 m, ten measuring 20 m, and five measuring 15 m. Therefore, either 30 m or 20 m could be recorded as the standard value.

1) 30 m is recorded in the branchline length data field and a comment like '*Branchline lengths were not consistent. There were 5* of *30 m, 5 of 20 m, then 5 of 15 m, then 5 of 20 m and then 5 of 30 m*' is written in the 'Unusual set details' data field; or

2) 20 m is recorded in the branchline length data field and a comment like '*Branchline lengths changed from 5 of 30 m, then 5 of 20 m, then 5 of 15 m, then 5 of 20 m and then 5 of 30 m*', is written in the 'Unusual set details' data field.

Note: As both these comments are long, they could be continued on to the LL-2/3 form if further space is required.

Only use the 'Unusual setting details' data field for recording **deliberate changes within the set**. This data field should *not be used to record changes between different sets*. For instance, if the vessel adds an extra radio buoy during the second set, which was not used during the first set, this information should not be considered as 'Unusual set details' information. Or if the vessel targets tuna for one set but then changes to sharks for the next set, this should not be considered as 'Unusual set details' information. If there are any changes to the setting specifications or target species *between different sets*, record these changes in the diary and summarise the information in the trip report.

Bait used

| BAIT USED (total weight for EACH species)						
SPECIES	Mackerel	SQD				
(KG)	150	90				
HOOK NOs	1 - 9, 16 to 25	10 to 15				
LIGHT STICKS No. USED:	0					

Species
Mark down the species names for all the bait species that are placed on hooks during the set. It is best to use the 3-letter FAO species code, but the common names can be recorded if the FAO code is not known.

Kgs

Write down the total weight of each bait species used during the set. Normally, baits are stored in cardboard boxes and the weight of each box is marked on the side. To calculate the total weight of each bait species used, simply count the number of boxes of each bait type used and multiply this number by the weight of the boxes.

Example: If 6 boxes of squid are used, and each box weighs 15 kg, then the total weight of the bait used is 6 multiplied by 15 kg, which equals 90 kg. Record **squid** under the 'species' data field and **90 kg** under the 'KGS' data field.

≫ The recorded value will always be a whole number.
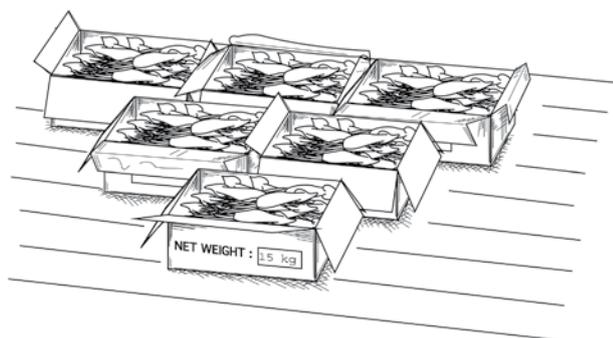
Caution: Calculate the answer. The required answer is 150 kg. Do not write '10 x 15 kg' into the data field.

Caution: Only record the amount of bait that was *used*. The crew might take out 15 boxes of bait, but then return 3 to the freezer. The total weight is then 12 boxes multiplied by the weight of each box, not 15 boxes.

Hook nos

Record the *hook number* for each hooked bait species. This will show if the branchlines are baited in any special order. Some vessels may put certain bait on specific hook numbers. They do this to better target some species of fish. For instance, a vessel targeting bigeye might put more expensive bait such as squid on the deepest hooks as bigeye are more likely to be caught in deeper water.

To record the hook numbers or baiting pattern, pay close attention to how each hook is baited. Begin investigating this when the float is set. The first hook to be baited will be hook number 1, the second hook will be number 2, and so on. Stop the count when the next float comes in. Make a note of which species is baited on to each of the branchlines and try to establish if a baiting pattern is being used. Use the comments section on the LL-2/3 form to take notes on the baiting sequence. If there was any baiting pattern describe it in the trip report. Explain the reasons for using the baiting pattern (ask the captain) and note if the baiting pattern was used for every set. If it was used for only a few of the sets, mention which sets. Did they start using a baiting pattern but did not continue with it during the whole set?

Observers do not have to worry about the final direction of the haul when they record their hook numbers. It is true that the hook numbers may be different during hauling and that the hook number count during hauling depends on whether the vessel picks up the last hook set at the start of the haul or the first hook set at the start of the haul. However, computers will establish the direction of the haul from the observer's vessel position data. Observers do not have to consider the direction of the haul. They should always record hook numbers in the same way. That is: the first hook (hook number 1) is always the first hook that comes after the buoy. It doesn't matter if the buoys are being set or hauled when the observer starts the hook count.

Example baiting patterns

≫ If only one species of bait is used, note down 'All' in the 'Hook no.' data field.

BAIT USED (total weight for EACH species)					
SPECIES	Sardine				
(KG)	100				
HOOK NOs	All				
LIGHT STICKS No. USED:	0				

≫ If more than one bait species is used, and there is no particular order, note down 'Random' in the 'Hook no.' data field. In the example below, squid, mackerel and saury were used.

BAIT USED (total weight for EACH species)				
SPECIES	SQU	MAX	SAP	
(KG)	90	80	30	
HOOK NOs	Random	Random	Random	
LIGHT STICKS No. USED:	0			

≫ If there are 10 hooks in a basket, and the bait species alternate between squid and mackerel on every second hook, then the pattern can be written as:
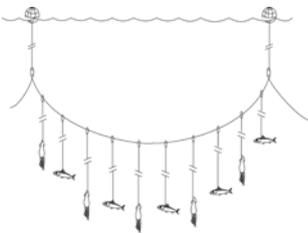
BAIT USED (total weight for EACH species)				
SPECIES	SQU	MAX		
(KG)	90	80		
HOOK NOs	1,3,5,7,9	2,4,6,8,10		
LIGHT STICKS No. USED:	0			

≫ If there is a continuous run of one bait species for a number of hooks in a row, record the order using 'to'. For instance:

BAIT USED (total weight for EACH species)				
SPECIES	Saury	Squid		
(KG)	90	50		
HOOK NOs	1 to 5, 15 to 20	6 to 14		
LIGHT STICKS No. USED:	0			

≫ If there are any *deliberate changes* made to any of the bait information within the set (species, hook numbers) record this in the 'Unusual set details' data field (see page 60).

No. of light sticks used

Count the *number of light sticks* used during the set. Light sticks are mainly used by vessels targeting swordfish but may also be used when targeting bigeye. Disposable light sticks emit light for 8 to 12 hours based on a chemical reaction. They can only be used once. Battery-operated pressure lights can be used over many sets before the batteries need changing. If the vessel is using light sticks, count the total number of light sticks used during the set. Generally, they are not placed on every single hook, so calculate the number of light sticks that are placed in one basket and multiply that number by the total number of baskets to get the total number of light sticks. This information may also be available from a crew member.

Set log

Observers are required to fill in the set log at the start and end of each set. It is very important that the observer personally monitors the time and position.

?

- *I didn't wake up in time – can I ask the captain for the start of set position?*

> Try very hard to avoid this problem. Recording the start and end of the set positions is a very important part of the job as these records show where the vessel set its line. If the vessel has set its line in an illegal area, it will be important to have an independent record of the setting position. However, if you do miss the start of set time, the time and position can be taken from the vessel's log. Circle N to indicate that the position was not observed directly. Also comment on why you were unable to observe the set positions.

Ship's time

Use ship's time to indicate the start and end of set and haul times (see 'Ship's time', page 16).

Latitude / Longitude

The latitude and longitude positions can be recorded from the vessel's GPS (see page 34). Record the latitude (dd° mm.mmm) and longitude (ddd° mm.mmm) to three decimal minutes. Be sure the GPS is recording to decimal places of minutes and not seconds. Remember to record N for North, S for South, E for East and W for West.

Haul log

Number of haul log records to make

Observers must record the time and position at the start and end of the haul. This should be done during rest days also. For hauls that are fully monitored, a time and position record should be made approximately every hour, or the next time that fits in with the observer's activities on deck. Aim to record the time and position as close to the hour as possible. However, if the observer is busy at this time (e.g. measuring fish), the next record should be made as soon as possible after the hour.

In addition, if the mainline breaks during hauling, use a line on the form to record the time, the position, and a comment. Use another line to record the time and position, and a comment when the line is found again. The next haul log record should be made one hour after the line has been found again.

Caution: Never leave the 'start' or 'end' of haul time and position record blank.

1. If more than one LL-2/3 form is used, fill in 'Contd' (continued) in the 'End of haul time' data field. 'Contd' should also be written in the 'Start haul time' data field on the new LL-2/3 form that is started next.

SPC/FFA REGIONAL LONGLINE OBSERVER - SET and HAUL INFORMATION   **FORM LL - 2 / 3**

REVISED DEC. 2007
OBSERVER NAME | VESSEL NAME | OBSERVER TRIP ID NUMBER | SET No. | PAGE   OF

LONGLINE SET SPECIFICATIONS

No. OF HOOKS PER BASKET	25	LINE SETTING SPEED - m/s kts (circle one)	3,1	VESSEL SPEED FOR SETTING (kts)	6,7
TOTAL No. OF BASKETS	150	BRANCHLINE SET INTERVAL (s)	9	SHARK LINES on floats (Hook No.99s)	
TOTAL No. OF HOOKS	3000	BETWEEN BRANCHLINES (m)	28	Number.: ___ LENGTH (m): ___	
LENGTH OF FLOATLINE (m)	20	LENGTH OF BRANCHLINES (m)	15	WERE TDRs DEPLOYED ?	Y / N

TARGET SPECIES ('X' to indicate): TUNA X, SWORDFISH —, SHARK —   ALL MUST BE RECORDED

START OF SET
SHIP'S DATE AND TIME: DD 28 MM 06 YY 08 hh 06 mm 30
UTC DATE AND TIME: DD 27 MM 06 YY 08 hh 19 mm 30

SHIP'S TIME	LATITUDE (dd° mm.mmm')	N / S	LONGITUDE (ddd° mm.mmm')	E / W	UNUSUAL SET DETAILS
SET LOG START SET	06° 45.159	S	171° 46.582	E	This vessel is using a 5 meter floatline on every second float, I put 20 meters in the data field as the most common data, but really there an equal number of floatlines that are 5 meters in length.
Were all "Start" and "End" positions observed directly? (Y)/ N If "N" explain in comments					
END SET	05° 49.235	S	171° 12.588	E	

BAIT USED (total weight for EACH species)
SPECIES	SQU	MAX	SAP	
(KG)	90	80	30	
HOOK NOs	Random	Random	Random	
LIGHT STICKS No. USED:

HAUL LOG					COMMENTS - use for comments from both setting and hauling. Use lower portion for personal workings if necessary. **Ship's time**
START HAUL 15.45	05° 51.925	S	171° 13.466	E	
16.48	05° 52.642	S	171° 13.013	E	
18.49	05° 53.533	S	171° 09.586	E	
19.55	05° 54.437	S	171° 12.817	E	19.55 Mainline break . Hauling stops.
20.10	05° 56.181	S	171° 16.703	E	20.10 Mainline found, next float spotted with deck beam (light) hauling continues
22.25	05° 56.061	S	171° 18.133	E	
23.05	05° 57.821	S	171° 16.814	E	23.55 100% cloud coverage - it's raining!!!
00.10	05° 55.634	S	171° 12.352	E	
01.08	06° 01.357	S	171° 13.258	E	
01.35	06° 01.258	S	171° 13.159	E	01.42 Motor in neutral for 15 mins, very large sunfish tangled with branchlines pulled onboard
02.25	06°04.112	S	171° 19.654	E	
03.00	06°09.123	S	171° 28.741	E	
04.12	06° 15.457	S	171° 32.369	E	04.12 Another mainline break
04.50	06° 17.775	S	171° 37.321	E	04.50 Mainline found, had to travel further, hard to see line with high waves, steamed to next radio buoy
05.13	06° 19.258	S	171° 45.486	E	
06.04	06° 25.357	S	171° 45.486	E	
END HAUL					
CONTD					

TOTAL BASKETS OBSERVED DURING HAUL (add up the total baskets monitored from the bottom of each Form LL-4 used in this set): **143**
DID YOU OBSERVE ANY EVENTS TO RECORD ON FORM GEN-3 TODAY ? (YES) NO circle one reported in diary pg # 5

2. If the observer did not directly observe the start and end of the haul time and positions, a comment should be made stating why the time and positions were taken from the vessel's log.

3. The 'End of haul' record should always be written in the specially designated 'End haul' data fields (i.e. the last line). Do not record the 'End of haul' record in the main part of the haul log as it will look as if the end of haul position was not recorded.

4. Remember to fill in the end of haul time and position. Some observers leave the deck after the last hook is hauled in, but the work is not finished until the end of haul time and position are filled in and the GEN-3 question is answered.

Ship's time
Use ship's time to indicate the start and end of haul times (see 'Ship's time', page 16).

Latitude / Longitude
The latitude and longitude positions can be recorded from the vessel's GPS (see 'GPS', page 34). Record the latitude (dd° mm.mmm) and longitude (ddd° mm.mmm) to three decimal minutes. Make sure that the GPS is recording to decimal places of minutes and not seconds. Remember to record N for North, S for South, E for East and W for West.

? *I couldn't get access to the GPS during hauling because the captain was sleeping. What can I do?*

This is a problem that you should try to solve as quickly and diplomatically as possible. Ordinarily, the captain will have been briefed during the observer placement meeting and will know that observers need access to all the electronic equipment at all times. It may be possible to negotiate access to the room even when the captain is sleeping, or get access for the first and last few hours of the haul. However, legally the observer should have access to the GPS at all times.

If access to the GPS is denied, make sure a comment is made in the daily diary, using the appropriate infringement header and letter from the GEN-3 form as a paragraph heading. The GEN-3 question at the end of the LL-2/3 form should also be filled in.

Comments

Observers are encouraged to write in the comments sections on all their forms regularly. Important events to comment on for the LL-2/3 form include unusual or significant conditions that affected the setting strategy or caused problems; environmental conditions (wind/sea state, moon phase); accidents; mainline cuts (when lost and when found); any other long delays or breakdowns; why it was not possible to get any or some of the setting or hauling positions; if any of the positions were taken from the vessel's log; further notes about any 'Unusual set details'; various vessel speeds during setting (to help in calculating the standard vessel speed); the baiting pattern; the line setting pattern (make a drawing); and the soak time. If more space is needed, the diary or trip report can be used. Indicate where the comment is continued and the page number where the rest of the comments can be found.

Cross referencing with other forms

Total number of baskets observed this set

TOTAL BASKETS OBSERVED DURING HAUL (add up the total baskets monitored from the bottom of each Form LL-4 used in this set)	143

This data field is filled in at the end of the hauling period, after the page totals on the LL-4 forms have been added up.

Page total from the LL-4 form

Add up all the page totals from all of the LL-4 forms used during the haul to get the value for 'Total baskets observed during haul'.

Baskets monitored while filling this page:	Total:

Did you observe any events to record on Form GEN-3 today?

DID YOU OBSERVE ANY EVENTS TO RECORD ON FORM GEN-3 TODAY ?	(YES) NO circle one	reported in diary pg # 5

Review the GEN-3 form at the end of every day.

If the vessel has carried out, or has attempted to carry out, any of the items listed on the GEN-3 form, circle 'YES' for this question on the LL-2/3 form. Record the diary page number where a report on the day's infringements can be found.

Write up a full report of any infringements made during the day in the diary. Use a paragraph to report on each activity and head the paragraph with the incident line on the GEN-3 form that mostly closely describes the action that took place. **It is very important** that observers pay attention to and record **all details about the infringement** in the daily diary, such as the time, position, person (or people) involved, and details of any conversations about the incident (especially if the observer was involved in the conversation) as this information may end up being used in court.

At the end of the trip, observers must indicate all the infringements made by the vessel on the GEN-3 form, and summarise all diary comments in their trip report. (See 'Dealing with infringement issues', page 108).

If no infringements have been made circle 'No' and put a dash in the page number field.

Form LL-4 Catch monitoring

Data submitted

If observers have chosen to fully monitor the fishing operation, then they need enough LL-4 forms to record each hooked species that they directly observe during the hauling operation. Every species directly observed on a hook requires a separate line on the LL-4 form. This includes all species that are retained, discarded, or finally escape from the line. The number of LL-4 forms used will depend on the number of fish hooked by the vessel and directly observed by the observer.

If the fishing operation is not monitored by the observer, there is no need to fill in a waterproof LL-4 form. Unlike all other types of forms, there is no need to submit blank waterproof forms with a comment stating that no activity took place or no haul was monitored.

*Note: If the vessel starts a set in the middle of the set (see 'Starting a new set in the middle of a set', page 53) make sure a new LL-4 form with the new 'Start of set date and time' is started when the haul for the first set ends.

Header details

The header details *must be fully filled in on every completed form* (see 'Header details', page 13).

REVISED DEC. 2007											
OBSERVER NAME		OBSERVER TRIP ID NUMBER				SET No.		PAGE	OF		
	Leban Benson	*LAB 08-03*				*3*		*8*			
VESSEL NAME		MEASURING INSTRUMENT	SHIP'S START OF SET DATE AND TIME						START OF HAU		
			D D	M M	Y Y	h h	m m	D D	M M		
	Kap Fresh #5	*Calliper*	23	04	08	06	15	23	04		

Set no.

Record the *set number*. Make sure the set number is the same as the set number that was recorded on the LL-2/3 form for the same fishing operation.

Measuring instrument

Record the type of measuring instrument used to measure the marine species during the hauling period. Observers should always aim to use calipers but measuring boards and deck tapes can also be used if necessary.

A simple description such as: 1.5 m calipers, 1 m deck tape, 1.2 m measuring board, etc., should be recorded in the data field, but a more detailed description can be given in the trip report under the 'General /Your headings' section. Some examples of notes that could be made in the trip report include; 'Standard 1.5 m aluminium callipers as distributed by SPC, but with fading numbers' or '2 m wooden callipers, but difficult to keep calibrated because of broken and re-glued plastic head'.

Remember callipers should be calibrated regularly. (For observers who have very regrettably forgotten to bring a measuring instrument, see 'I have forgotten my callipers …', page 20)

Ship's start of set date and time

	START OF SET				
ALL MUST BE RECORDED	SHIP'S DATE AND TIME				
	D D	M M	Y Y	h h	m m
	28	06	08	06	30
	UTC DATE AND TIME				
	D D	M M	Y Y	h h	m m
	27	06	08	19	30

Copy this information directly from the LL-2/3 form for the same fishing operation. This will help to link the information that is collected on the LL-2/3 form with the information collected on the LL-4 form.

Copy the ship's start of set date and time for the LL-4 form directly from the data field on the LL-2/3 form.

Start of haul date

Fill in the date that hauling started. Use the ship's date. Normally, the ship's start of set date will be the same as the ship's start of haul date. However, if the vessel sets the mainline very late in the evening, the ship's start of set date may be different to the start of haul date.

Monitoring the haul

It is important that observers are physically on deck for **the entire haul** of every fishing operation they have chosen to monitor. If observers need to leave the deck for more than a few minutes, they should always record the time and a comment on the LL-4 form stating when they left and when they returned to the deck (see the example below). Comments with times are required for all extended periods away from the deck, e.g. leaving to eat a meal. Comments with times are not required if the observer leaves the deck for a brief period to take a position, get a new pencil, etc., although it is better to do these things when fishing is slow. Ordinarily, the deck can still be watched when the observer goes to the wheelhouse to take a position, and any hooked species or floats will be easily seen.

It is understandable that occasionally observers may feel they need to leave the deck early due to illness, dangerous weather conditions, etc. However, when observers spend less time on deck, they limit the value of the data collected during the rest of the haul. Coordinators are asked to consider the number of complete hauls when evaluating submitted data. If observers find that they often cannot monitor the entire haul, they may need to reconsider if this is the right job for them.

Do not ask the crew to record the data if away from the deck for extended periods. It is unnecessary and may result in incorrect data if the crew decide they want to play a joke or do not want to cooperate that day. Such data may look like false data and the observer will not be given further contracts. The most important thing during hauling is that observers carefully record all the species and all the baskets (with the float tally) that they have **observed directly**. This enables scientists to correctly assess the observed 'catch per unit effort' (number of fish caught for every 100 hooks that were observed being hauled onboard).

Catch details
Ship's time

			CATCH DETAILS								
SHIP'S	HOOK	SPECIES	CONDITION CODE		LENGTH		WEIGHT		FATE	SEX	Stomach	COMMENTS and
TIME	No.	CODE	CAUGHT	DISCARD	(cm)	CODE	(kg)	CODE	CODE	M, F, I, U	sample	TAG NUMBERS

SHIP'S TIME	HOOK No.	SPECIES CODE	CAUGHT	DISCARD	(cm)	CODE	(kg)	CODE	FATE CODE	SEX M, F, I, U	Stomach sample	COMMENTS and TAG NUMBERS
18.04	18	YFT	A1	——	117	UF	——	NM	RGG	F		Tag found:D-15098
18.37	14	YFT	A2	——	121	UF			RGG	M		Cookie cutter damage
18.41	5	PLS	A1	A2	45	TW			DUS	U		Tail cut off
19.01	3	LMA	A1	D	159	UF	——	NM	DFR	M		——
19.23						Left deck for dinner						
19.55						Returned to deck after dinner						
20.09	99	BSH	A1	D	198	UF	——	NM	DFR	M		——
20.13	14	ALI	U	U	—	NM			DSO	U		Only jaws left
20.27	17	WAH	A2	——	112	UF			ROR	U		Take home - crew
20.38	2	BUM	A1	——	227	LF	——	NM	RHG	F		Very alive!! Hard to land
20.51						Mainline cut						
21.27						Mainline found						
21.39	18	BET	D	——	126	UF	——	NM	RGG	M		——

It will be easier to record this information if the observer's watch is set to ship's time at the start of the trip. (See 'Ship's time', page 16).

Use ship's time to record the time the hooked fish first landed on deck. (For species that are hooked, but are not subsequently landed on deck, record either the time the crew strikes the species off the line, or the time the observer notices the species escaping from the line).

Important: Every record on the LL-4 form must have a unique <u>time</u>. If two or more fish come up during the same minute, record the first fish with the actual ship's time, but record the second fish as having been caught during the next minute, and add a third minute if a third marine species comes up during the same minute, etc.

Caution: Be sure to use the 24-hr clock correctly. Forty-seven minutes after midnight is written as 00.47 hrs, not 24.47 hrs.

Caution: Every record on the LL-4 form should have a ship's time. Do not leave any ship's time blank.

Hook no.

Try to record the *hook number* that the species was hooked on. Hook numbers are counted within one basket only.

A basket starts when a float comes in and ends when the next float comes in. The first hook that comes in after a float is hook number one. Count hooks in each basket as they come on deck, restarting at '1' after the next float. Hook numbers indicate hooks that are at the end of the branchlines only. If any species is hooked on a shark line, then the hook number should always be recorded with the special number '99'.
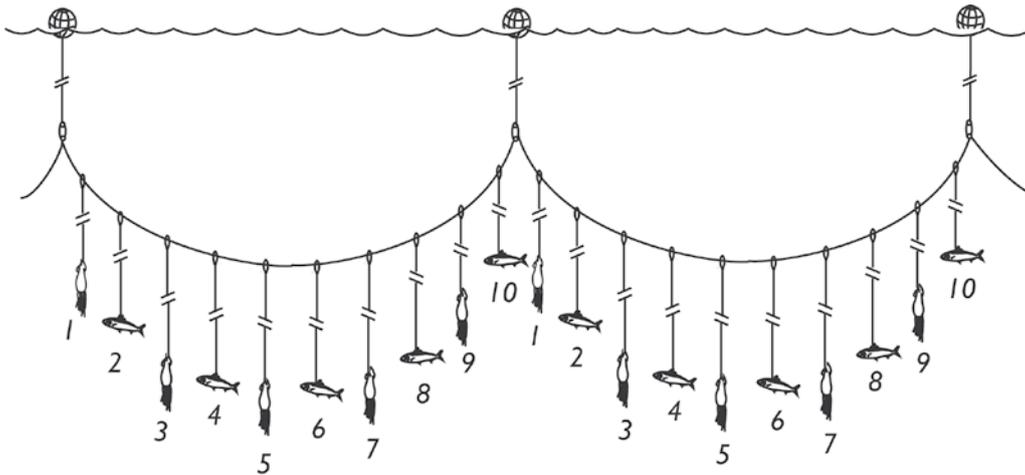
Counting hook numbers can be quite difficult if there are a large number of hooks in a basket, or if there are a large number of species hooked in the same basket. Try to get the hook numbers for as many of the hooked species as possible. It is okay to give a best estimate if necessary. If it is too difficult to get the hook numbers, then just put a dash in the data field.

> 'Hook no.' is either:
> 1.   the count of hooks since the last float, or
> 2.   the 'No. of hooks per basket' **minus** the count of hooks until the next float.

Hooks can be counted either forwards or backwards depending on the fishing activity and the observer's preference. Sometimes it might be easier to count forward to the next float, while at other times it might be better to count back to the last float that came in.

Caution: Do not count the hook number without re-starting the count at the next float. The result will be very large numbers in this data field (i.e. more than 100), which is incorrect.

Species code

Use the Food and Agriculture Organization (FAO) three-letter species codes to record any species that are hooked. These codes are marked in the 'Marine species identification manual for horizontal longline fishermen', the species identification sheets and the species lists that were provided during training. If necessary, further copies can be obtained through the observer coordinators, SPC or FFA. If observers are unsure of the correct species code, they have two options:

1. *Use a species group code*. A species group code describes a group that contains a number of similar species without indicating an actual species. Usually (but not always) this is a scientifically recognised family group. Some species codes are:

ALI   – Lancetfish
BIL   – Billfish
BAR   – Barracuda
MAR   – Marlin
TUN   – Tuna
SKH   – Shark
THR   – Thresher sharks
TTX   – Turtles
BRZ   – Pomfrets and ocean breams

Caution: Observers are urged to record the actual species code and not the group code whenever possible. Observers using group codes should be questioned by the debriefer and given some further help on finding the correct species code. While it is expected that new observers will use group codes from time to time, experienced observers should avoid using group codes. Group codes can be useful when recording damaged species or species that the observer did not have the opportunity to check closely.

2. *Use the three-letter code ('UNS' - Unspecified)* when the correct species or group code is not known. A further description of the species must then be provided.

How to provide further descriptions for unspecified (UNS) or group codes

1) Take some photographs of the specimen.
2) Bring the specimen back to shore for further identification. (For sharks it may be helpful to collect some of the teeth. Note whether the teeth came from the upper or lower jaws and from the front or back of the jaw.)
3) Draw the species and write a full description in the written report. When drawing or describing unidentified species, pay special attention to:

> ➤   overall body shape
> ➤   colour of the fish
> ➤   where the fins are attached to the body
> ➤   position of the fins in relation to other fins
> ➤   size of the fins, and number of fin spines and rays
> ➤   height of the dorsal fins (especially for marlin)
> ➤   presence or absence of the lateral line and its shape
> ➤   scales or skin of the fish (whether smooth, hard, sharp, etc.)
> ➤   any other distinctive feature of the fish

Caution: Do not write local names for species in the data field. If the FAO species code is not known, record the code 'UNS' (unspecified) in the data field and record the local name in the comments section. Work with the debriefer at the end of the trip to try to determine the correct species code. Correct the species codes on all the LL-4 forms before they are submitted.

Caution: If observers see more than one unknown species, they can use their own numbering system to separate out the different species (i.e. UNS #1, UNS #2, UNS # 3). Use the comments area to make some notes that will help with re-coding these species later, e.g. 'large orange fish', 'long fish, big teeth'. Note: Further descriptions for all UNS codes must be supplied (see box above). Short comments on the LL-4 form are not sufficient.

Caution: Every record on the LL-4 form must have a species code filled in. There should be no records left blank or dashed.

Condition code

Observers should try to observe the state of health of all fish, marine mammals, marine reptiles or sea birds that are hooked by the vessel from the moment they emerge from the water until the end of the encounter.

When filling in an LL-4 form, only use condition codes listed on the back of the LL-4. The GEN-2 condition codes (on the back of GEN-2) should only be used on the GEN-2 form.

Condition code - caught
Record a condition code for every fish, marine mammal, marine reptile or sea bird that is hooked by the vessel when it lands on deck. If the species is not landed on deck, but is struck off or escapes first, try to assess and record its condition before it was detached from the hook.

Every record on the LL-4 form must have a condition caught code. Use the condition code 'U' (condition unknown) if there was no opportunity to assess the condition.

Condition code - discard
Record an additional condition code for every fish, marine mammal, marine reptile or sea bird that subsequently escapes, is struck off the hook, discarded, released or otherwise returned to the sea. Record this second condition code in the 'Condition code – discard' data field.

Caution: All species that subsequently escape or are released, discarded or struck off must have the second code, i.e. 'Condition code – discard'. Use the condition code 'U' (condition unknown) if there was no opportunity to assess the condition. Remember to put a dash in this data field if the species was retained onboard.

LL-4 condition codes

AO: The species is alive (not categorised into A1, A2, A3).
Use this code if the hooked specimen is obviously alive, but it wasn't possible to make a further assessment of its condition.

A1: Alive, healthy.
Use this code if it seems that the species is still very much alive and likely to survive in the sea. Maybe it was seen thrashing around on the deck or swimming away vigorously. However, not all species will thrash around once landed. Some species will naturally behave more quietly when they land on deck and it may only be possible to see how alive they really are when they are handled by the crew.

A2: Alive – injured, distressed.
Use this code when the species still seems to be somewhat lively after it has been landed but has obvious injuries, i.e. a cut or wound somewhere. Use this code if it seems that the species still has a fair to good chance of surviving if released, despite its injuries.

A3: Alive, but dying.
Use this code when the species is alive, but only barely. Use this code if it seems that the species would have very little chance of surviving if released into the sea.

D: Dead.
Use this code when the species is obviously dead. Watch out for specimens that come alive afterwards! Some species might look dead on the deck, but show some movement when handled by crew. These specimens should probably be coded as A3.

U: Condition unknown.
Use this code if unable to assess the condition of the species. This might happen if it has been struck off without the observer seeing it, or several species arrive on the deck at the same time and there is no chance to assess the state of each one.
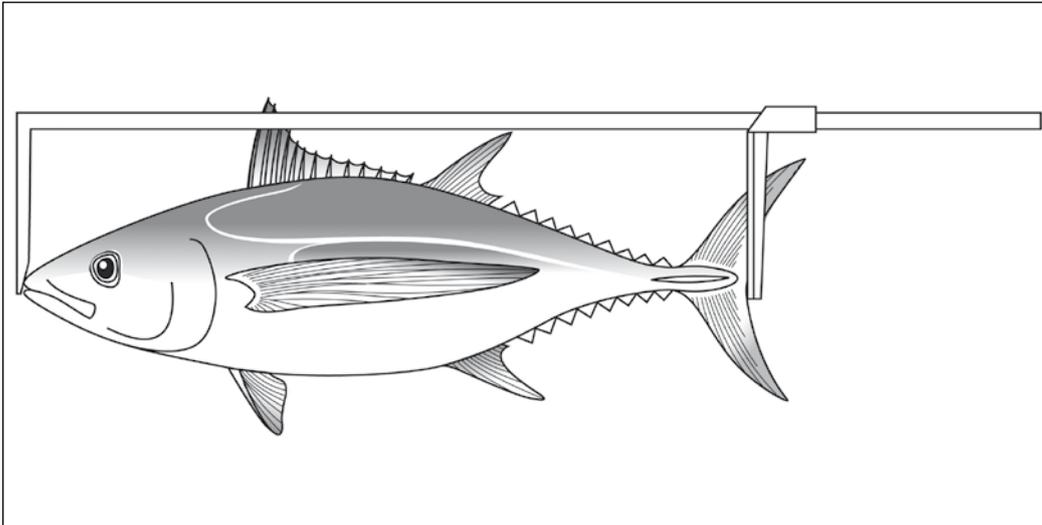
Length

Length – cm
See 'Measuring lengths' page 17 for more information on how to measure marine species.

Length - code
Observers onboard longline vessels have a unique chance to measure whole fish before they are processed. For this reason, observers are encouraged to always try to get the full length measurement (i.e. UF, LF) whenever possible. Other length measurements, such as pectoral fin to fork in the tail (PF) measurements, are best left to port samplers for measuring processed fish. However, observers can use the length measurement codes that are normally reserved for processed fish, if required. The following are the best measurement to take onboard longline vessels.

Tuna – *Aim to always get the UF length measurement for tuna on longline vessels.*

Sharks – *Aim to always get the UF length measurement for sharks on longline vessels.*
(Avoid taking PF or TL length measurements for sharks unless specifically requested to do so.)
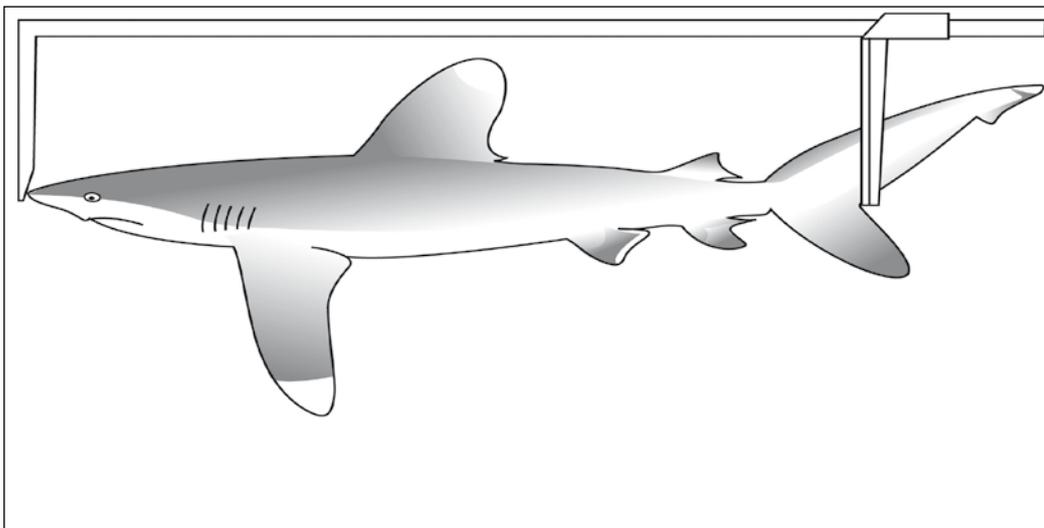
Billfish – Aim to always get the LF length measurement for billfish on longline vessels. (*Avoid taking PF length measurements for billfish unless specifically requested to do so.*)
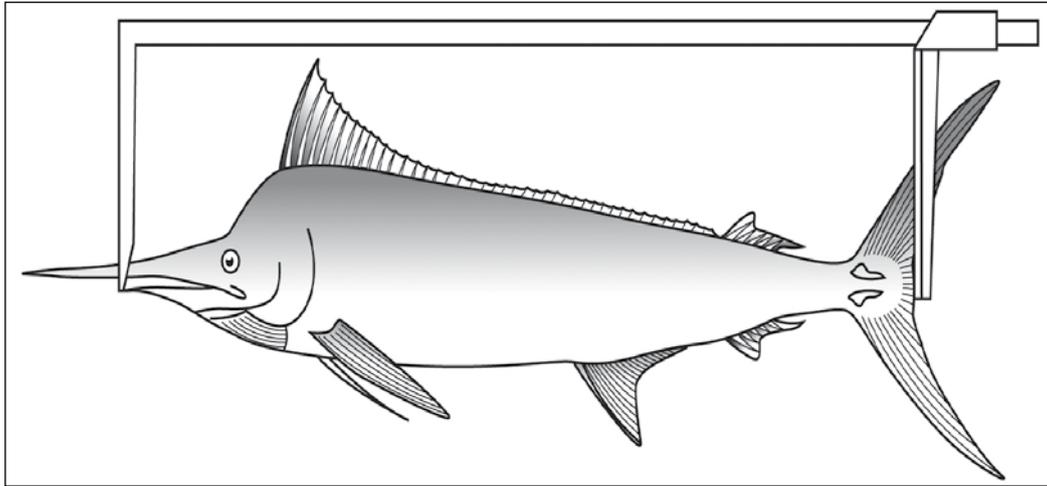
Other fish with forked tails – Aim to always get the UF length measurement of other fish with forked tails (i.e. most bycatch) on longline vessels.
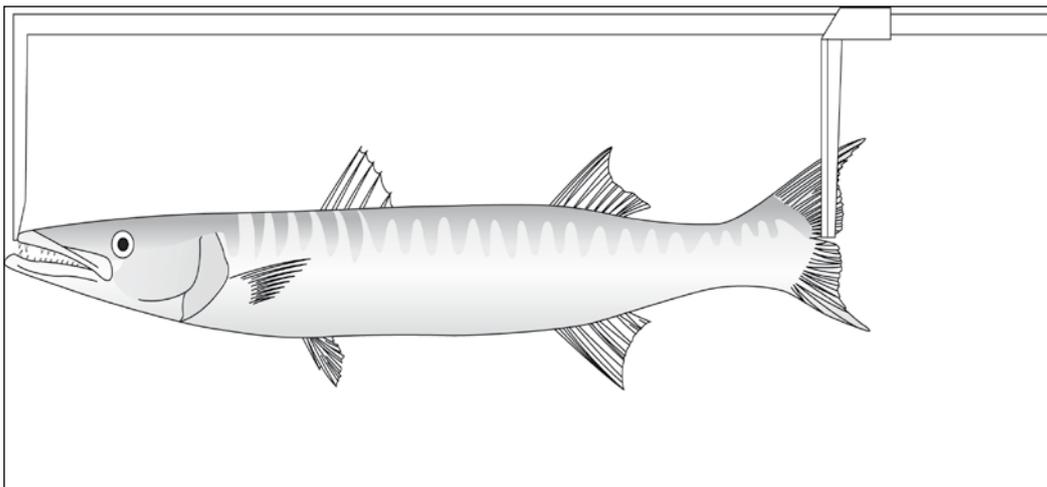
Other fish without a fork in the tail – Aim to always get the TL length measurement for bycatch without a fork in their tails.
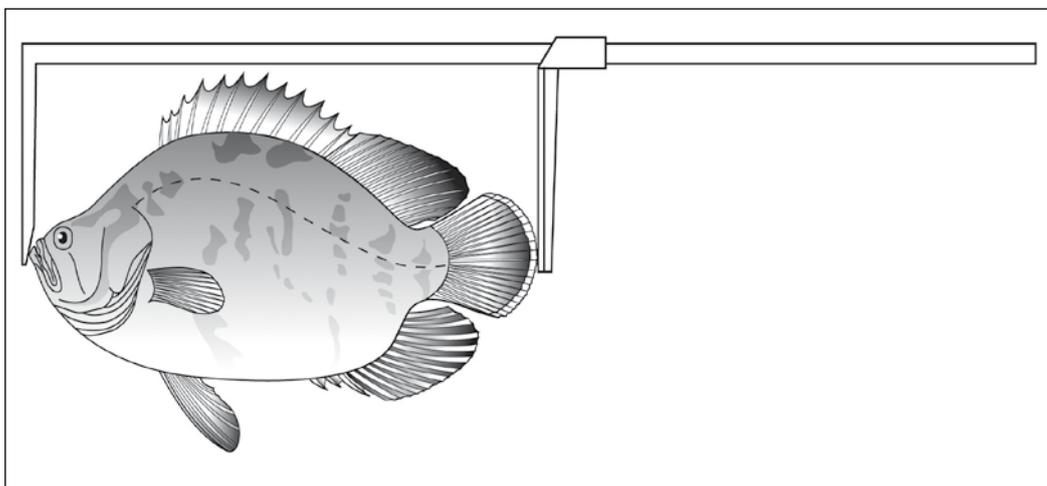
Rays – Aim to always get the TW length measurement for rays on longline vessels.
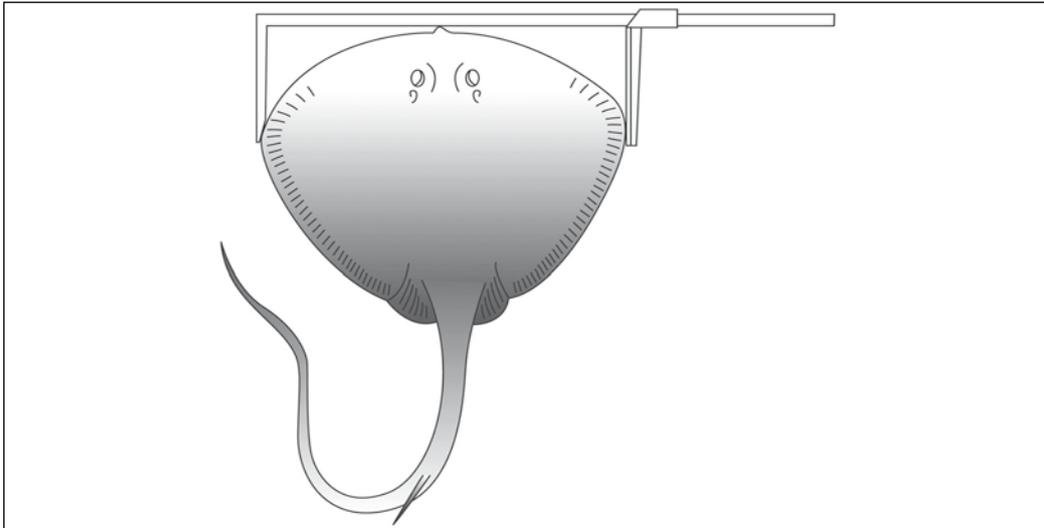
Turtles – Aim to always take a CL length measurement for turtles on longline vessels.
Note: It is not possible to measure turtles <u>without callipers</u>.
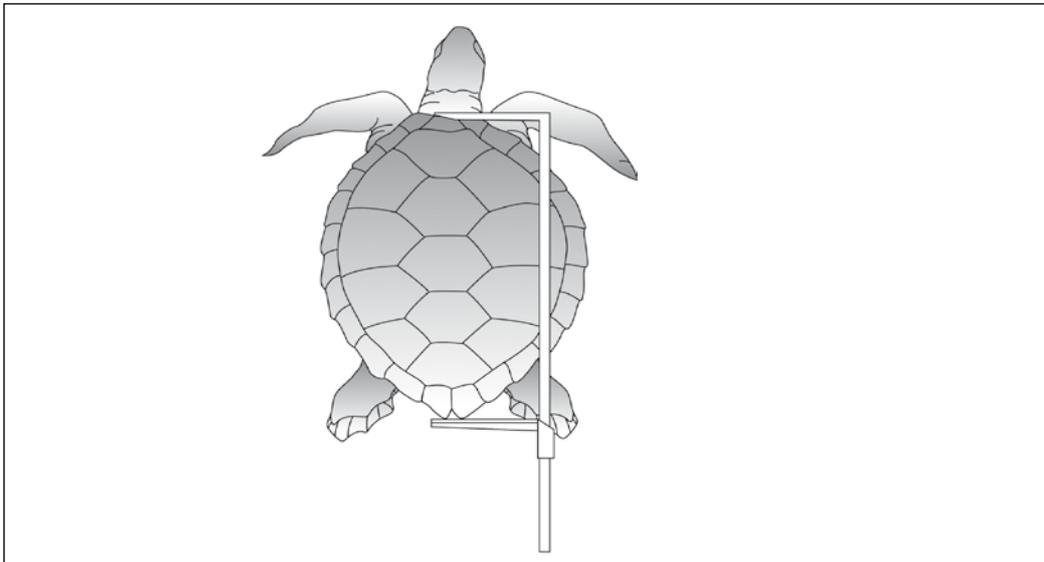
Caution: Every record on the LL-4 form needs a length code. If the species has not been measured, the length measurement code 'NM' (not measured) should be recorded and a dash should be inserted in the length (cm) data field. If it is not already obvious from the fate code (i.e. that they were struck off, escaped, or suffered whale damage), say why the species was not measured in the comment field.

Weight

(kg)

Weight measurements should only be recorded when the vessel has weighing scales. If there are no weighing scales onboard, there is no need to record any weights. Weights may also be recorded if observers were given their own weighing scales.

If weight measurements are taken, the weight in kilograms should be rounded off to one decimal place (see 'Recording weights', page 20).

Code

The recorded weight code should reflect the processed state of the fish when it was weighed.

WW   Whole weight
GG   Gilled and gutted
GH   Gutted and headed
GT   Gilled, gutted and tailed
GX   Gutted, headed and tailed
GO   Gutted only (gills left in)
FW   Fillets weights
TW   Trunk weight

Do not confuse 'weight codes' with 'fate codes'. **Weight codes** show the state of the fish when weighed. If a weight of 35 kg is recorded, data users need to know if this weight was the whole weight (WW) of the fish, or if some parts had already been removed. For instance, if the gills and guts were removed before weighing, the weight code 'GG' would be recorded. **Fate codes** (see page 79) show the *final processed state* of the species, while weight codes show the *state of the species when weighed*. The two codes are independent of each other.

As most longline vessels do not have weighing scales onboard, usually observers will not have to record weights. Normally dashes are only required on lines/rows that have other information on them. Totally blank lines/rows do not require dashes. However, it will help to confirm that no weight data has been collected if the observer puts a dash in these data fields. A good way to do this is to mark in the NM (not measured) code at the top and bottom of the weight code column and then draw a line down through all the data fields.

Caution: Some vessels roughly measure the length of their target catch and use these rough measurements to get the approximate weight of the retained fish. Observers should not record these approximate vessel weights.

Fate code

The fate code records the final processed state of the marine species, or in other words what finally happened to the species after it emerged from the water.

There are two groups of fate codes:
Starting with **R** – for when the species is retained (kept) onboard the vessel
Starting with **D** – for when the species is discarded (returned to the sea)
There is also a code for any species that escapes – ESC

Sometimes more than one fate code might seem to fit. In this situation, **choose the best or most informative code when choosing between codes**. Record the most informative code in the data field and note any other possible code in the comments area. For example, a yellowfin tuna is landed but is severely damaged by shark bites. The crew later eats the tuna. There are two codes that could describe the fate of that fish: RSD – (retained shark damage), or RCC – (retained for crew consumption). RSD could be seen as the most informative code as it lets data users know why the yellowfin was eaten. On the other hand, RCC could be recorded as the most informative code as it was the final fate of the fish. The focus of fisheries biology or fisheries development work may change and influence which code should be chosen as the most informative code. For instance with the present emphasis on damage caused by marine species it may be best to record 'RSD' as the most informative code. Training and debriefing will help observers choose the most informative fate code and keep them up to date with any research changes that may affect their work.

If the observer did not observe the final fate of the species (too many fish coming up at once, for instance), they should put a dash in the data field and make a comment explaining why the fate code was not recorded in the comments data field.
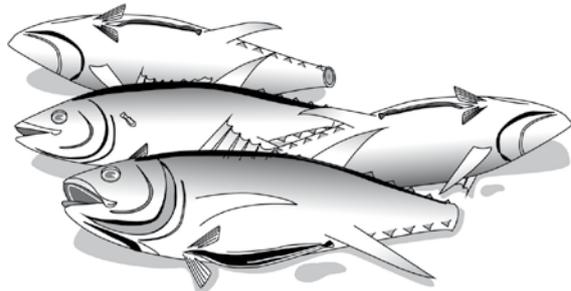
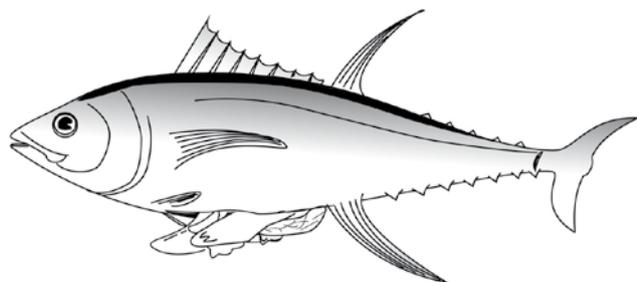## Retained fate codes

RGG: Retained – gilled and gutted	RGT: Retained – gilled, gutted and tailed
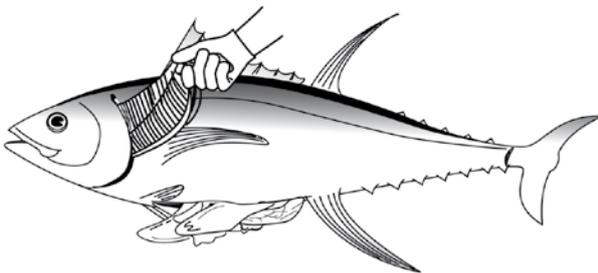
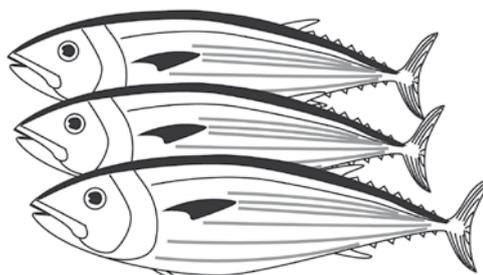When both the gills and the guts are removed and the species is retained onboard, use this fate code.

When the gills and guts are removed, the end of the tail is cut off and the species is retained onboard, use this fate code.

RGO: Retained – gutted only

When only the guts are removed and the species is retained onboard, use this fate code.

RWW – Retained whole weight

When there is no processing of the species, and it is retained onboard, use this fate code.

RHG: Retained – headed and gutted (billfish)

When the heads and guts are removed and the species is retained onboard, use this fate code.

(This is typical processing for billfish species –marlins, swordfish, sailfish, and short bill spearfish. If this fate code seems suitable for a non-billfish species justify this with a comment and provide a full description in the written report. Providing a photo will also be helpful.)
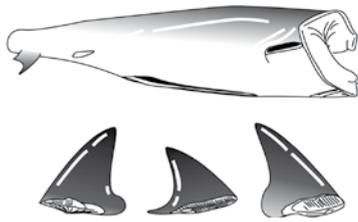
RPT: Retained – partial (fillet, loin, trunk)

When the species is cut up and only pieces of it (e.g. fillets, loins or part of the trunk) are retained onboard, use this fate code.
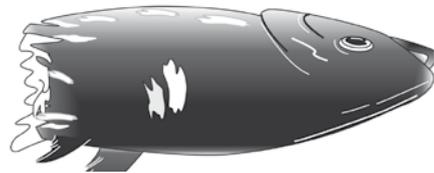
(When this type of processing is done onboard, a full description of the processing should also be made in the trip report.)

RFR: Retained – both fins and trunk

When sharks are finned and both the fins and trunk of the shark are kept (retained) onboard, use this fate code. Normally the head, gills and guts of the shark will be discarded.

RSD: Retained – but shark damaged

When the species has been obviously bitten by sharks, but it is still retained on board, use this fate code.

RCC: Retained – for crew consumption
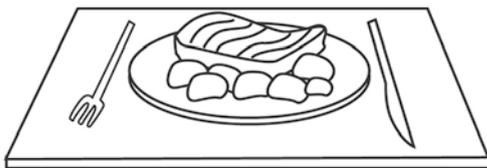
When a species is retained onboard, but eaten by the crew <u>during</u> the voyage, use this fate code.

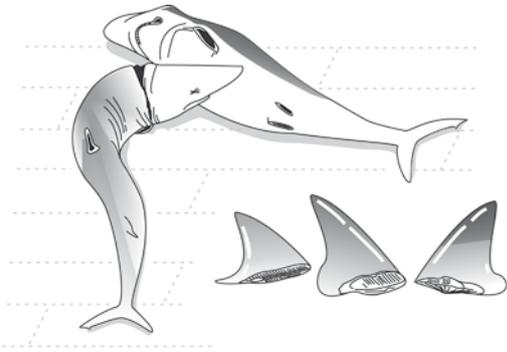## ROR: Retained – other reason (specify)

When a species is retained onboard, but none of the retained fate codes properly describes what happens to it, use this code.

Always describe the reason the species was retained in the comments data field.

Discarded fate codes

DFR: Discarded trunk – fins retained (sharks) | **DTS: Discarded – too small (target species)**

When sharks are finned, and the fins are retained but the trunk is discarded, use this fate code.

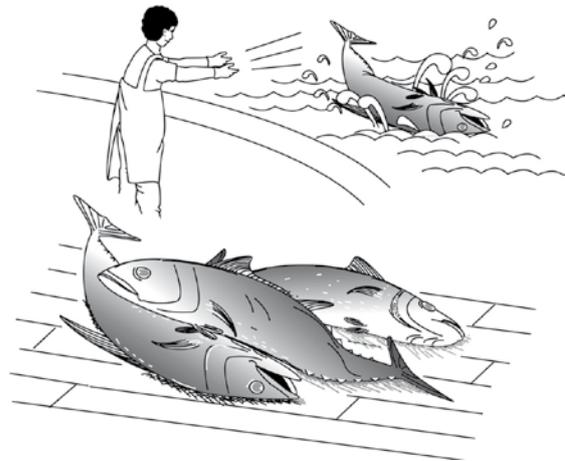When a species that is usually retained onboard for commercial sale is discarded because it is too small, use this fate code.

If a species is not normally retained onboard (because it has no commercial value) and it is small and discarded this is not the correct code to use. Record the best or most informative code, which is often the normal fate code for the species. Record DTS in the comments data field.

DGD: Discarded – gear damaged

For species that are normally retained onboard, but are discarded because they have been damaged by the vessel's gear, use this fate code.

If a species is not normally retained onboard, this is not the correct code to use. Record the best or most informative code, which is often the normal fate code for the species. Record DGD in the comments data field.

DPQ: Discarded – poor quality

For species that are normally retained onboard, but are discarded due to their poor quality (e.g. soft flesh), use this fate code.

If the species is not normally retained onboard, this is not the correct code to use. Record the best or most informative code, which is often the normal fate code for the species. Record DPQ in the comments data field.
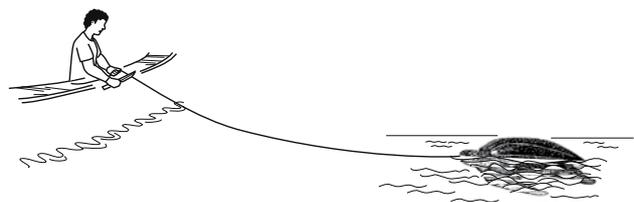
DSO: Discarded – struck off
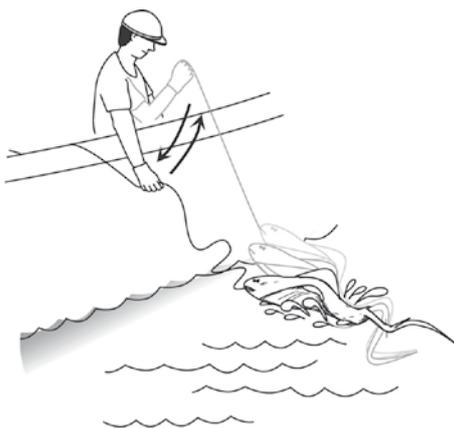
When a species is deliberately struck off the line by the crew, and not landed on deck, use this fate code (common for unwanted species of no commercial value).

DCF: Discarded (cut free or far)

When the branchline is deliberately cut near the snap to release a species of special interest or another species that is locally considered protected, use this fate code. Attention, this may be done quickly by the crew so that the observer cannot make a count of the number of interactions with a certain species.

DDL: Discarded – too difficult to land

When a species is let go because it is too difficult to land (too large or aggressive), use this fate code.

DOR: Discarded – other reason (specify)

When a species is discarded, but none of the 'discarded' fate codes properly describes what happened to it, use this fate code.
Always give the reason for discarding the species in the comments data field.

ESC: Escaped

When a species escapes from the line without help from the crew (not struck off, unhooked or released) before it is landed on deck, use this fate code.

DSD: Discarded – shark damage

When a species that is normally retained onboard is discarded because it has been damaged by sharks (there will be obvious shark bites), use this fate code.

If the species is not normally retained onboard, this is not the correct code to use. Record the best or most informative code, which is often the normal fate code for the species. Record DSD in the comments data field.
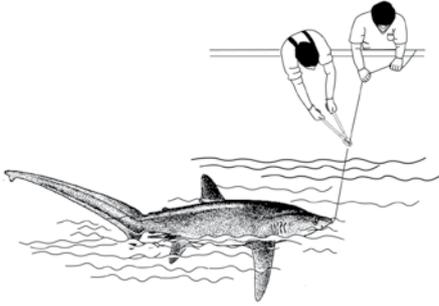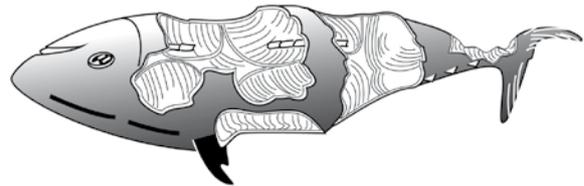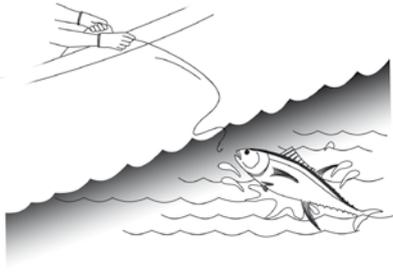
DWD: Discarded – whale damage
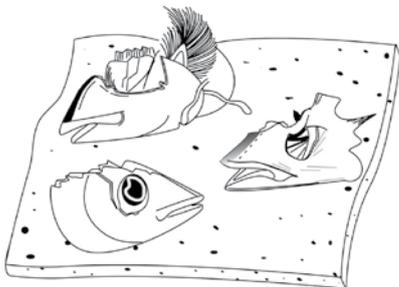
When a species has been damaged by toothed whales (usually only the head of the animal is left attached to the hook with perhaps distinctive tooth marks showing), use this fate code.
* This is probably the most informative fate code for all species whether normally retained, or normally discarded. Highlighting all species with whale damage will give a good indication of the extent of whale predation (damage).

Discarded species of special interest

DPA: Discarded – species of special interest – alive
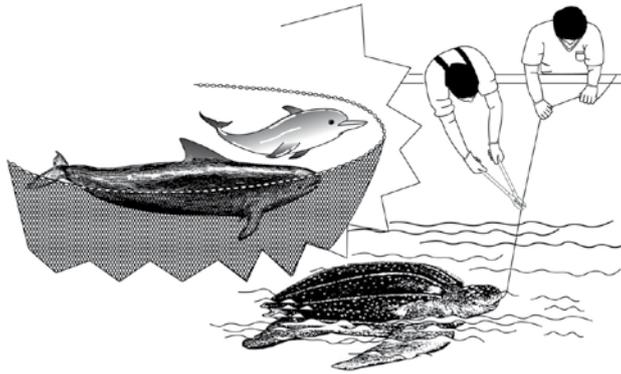
When a species of special interest is hooked, but is alive when released back into the sea, use this fate code.

DPD: Discarded – species of special interest – dead
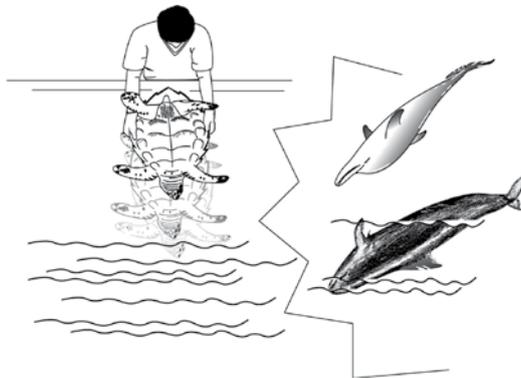
When a species of special interest is hooked, but is dead when released back into the sea, use this fate code.

DPU: Discarded – species of special interest – unknown condition

When a species of special interest is hooked and released back into the sea, and the observer does not get a chance to assess its condition, use this fate code.

? *The crew processed a blue shark and retained the fins. They also retained the skin on the belly area but discarded the rest of the trunk. How can I record this?*

The 'DFR (Discarded – fins retained)' fate code is probably best or most informative fate code to use here, so it should be written in the fate code data field. In addition, write the fate code RPT (Retained – partial) in the comments data field with a comment like, 'Skin of belly retained also'.

Damage caused by other marine species

It is important to record any damage to hooked species that was caused by other marine species. The information will be used to better understand ecosystem interactions and the financial losses suffered by vessels as a result of certain species groups, e.g. whales or sharks. There is a lot of interest in the problem of whales taking hooked catch from the line, especially since many Pacific Island countries have declared their EEZs to be whale sanctuaries. Observers are requested to look out for and correctly record any damage to the catch that was probably caused by whales.

A specific fate code is used to record damage to the catch by whales (DWD: Discarded – whale damage). There is also a specific fate code for recording damage to the catch caused by sharks. Other types of damage may be seen, but there are no specific codes for these at the moment. When such damage is seen, it should be recorded in the comments column. New fate codes can be created in the future if required.

More descriptions and more photographs of damage caused by other marine species are required. Observers are asked to clearly describe the type of damage they have seen, so the damage observed can be assigned to the correct predator in future.

Cookie cutter shark: This small shark leaves one or sometimes a couple of small, clean-cut holes in the flesh of fish or marine mammals that it attacks.

Squid damage: When squid attack hooked fish, the damage can range from a small hole, usually on the underbelly of the fish, to almost complete destruction of the fish if several squid have attacked it. At times the fish will be eaten down to the backbone. The holes made by squid often have frayed, irregular edges. There may also be sucker marks around the wound.

Whale damage: When whales attack hooked fish they generally leave only the head of the fish behind. There may also be a few large teeth or puncture marks seen on what remains of the head. It is thought that whales grab the fish in their mouths and shake it away from the line. This is why there is often such a clean cut at the top of the fish's spine. It is also suggested that this clean cut is caused by whales 'sucking' the fish from the line.

Some biologists think that whales also cause other types of damage. Large bites with large puncture holes (or teeth marks) around the bites may be caused by whales. Additionally, these large bites may be accompanied by long strips of flesh or tendons.

Shark damage: When sharks attack hooked fish they generally leave several medium-sized bites in the body of the fish. These bites will clearly have been caused by a creature with several sharp teeth (sharks) rather than a few large tubular teeth (whales).

Sex

The sex of each landed fish should be recorded. Mostly this can be done by checking the gonads of processed fish. However, the sex of sharks, marine mammals, mahi mahi and opah can be easily determined by looking at external features. The following section will help observers sex most of the common species commonly seen on longline vessels.

Sex codes: M, F, I, U
M: Male
F: Female
I: Indeterminate
U: Unknown

Marine species that can be sexed from external features

1. Sharks – SHK (*Elasmobranchii*)
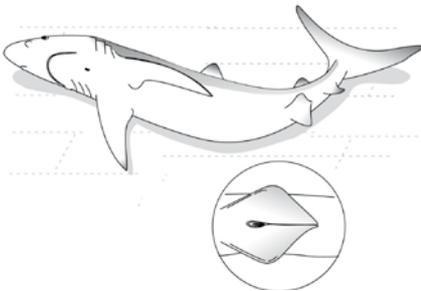
Female shark
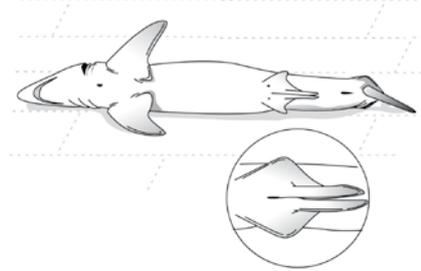
Male shark with two claspers

2. Opah (moonfish) – LAG (*Lampris guttatus*)

Female
'chest' area narrow,
bulges outwards

Male
'chest' area broad,
bulges inwards

3. Mahi mahi – DOL (*Coryphaena hippurus*)
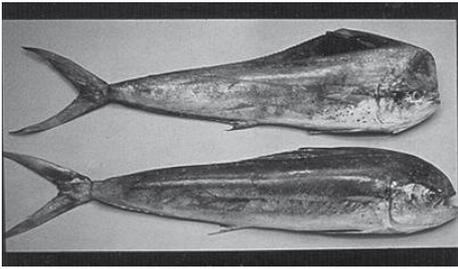
Male: Straight blunt head

Female: Curved, backward sloping head.

4. Marine mammals (whales and dolphins) (*Mamalia*)

Navel

Urogentital opening

Anus

Navel

Urogentital opening
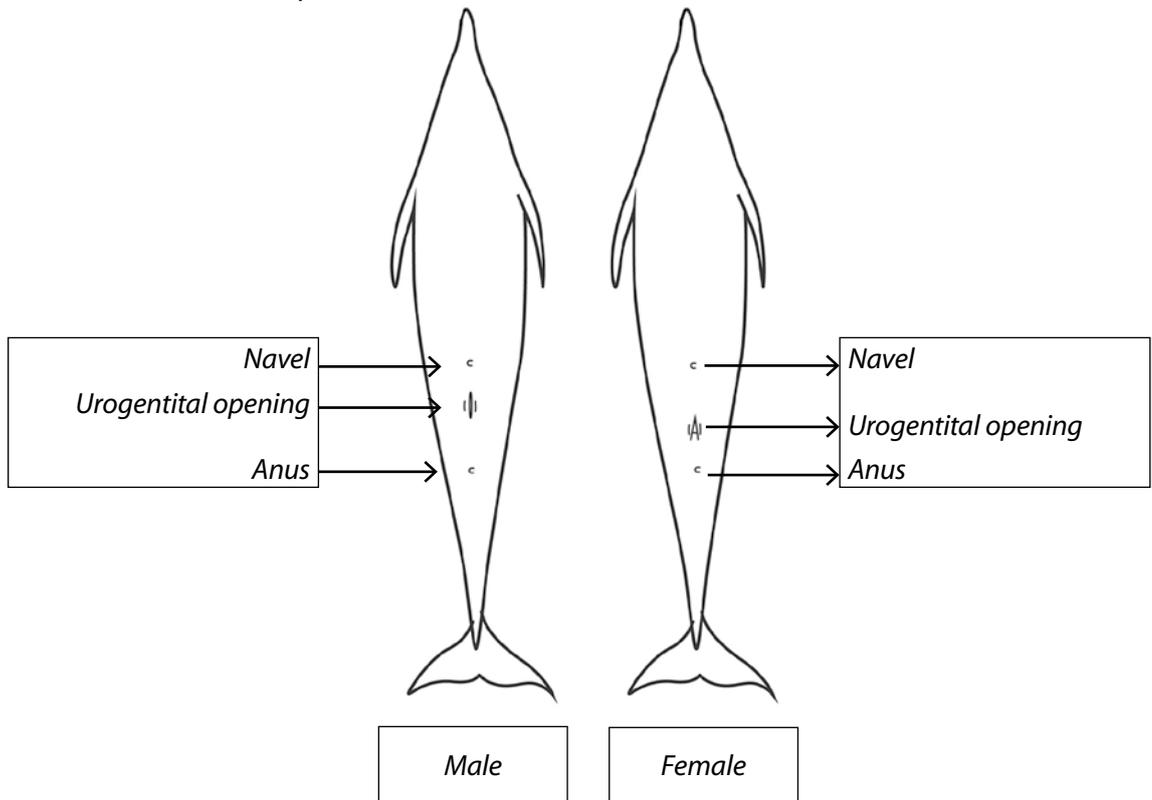
Anus

Male

Female

*In females, the urogenital opening is closer to the anus.

5. Turtles are also sexed by looking at the external features, but observers are not required to sex turtles at the moment.

Sexing other marine species

Female gonads

Cross-section

Male gonads
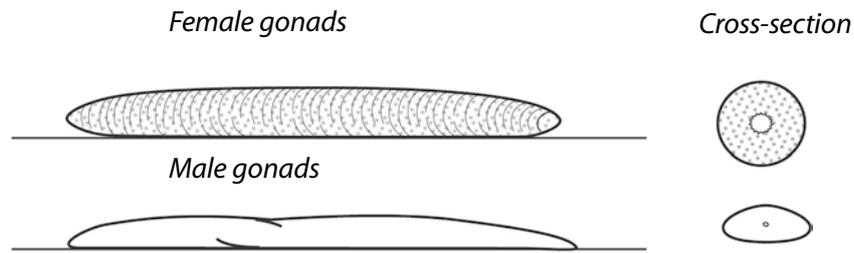
Most marine species can be sexed by checking the gonads, which are located inside the fish. Gonads from different species may not look the same, but they all have the same basic design. To work out what sex the fish is, locate the gonads and use the guide below.

Gonads are normally removed from tuna and some other bycatch species during gutting, so it will be easy for the observer to check these gonads. Billfish gonads may not be removed during gutting and observers should make an effort to find them inside the body cavity of the billfish.

Not all species will be gutted by the crew and it will probably not be appreciated if an observer cuts open a fish that the vessel does not normally cut open. There is no need for observers to gut fish just to find out the sex of the fish, unless they have been specifically requested to do so for biological sampling, for instance. If the gonads were not checked because the fish was not gutted, record the code 'U' (unknown) in the sex data field.

Male – 'M'

A cross-section of the male gonad looks slightly triangular. It contains a lumen (small hole) that runs the full length of the gonad. The diameter of the lumen is quite small and the edges are smooth. Male gonads are likely to be white but there may be a red tinge, depending on the maturity of the gonad. If the gonad is lightly squeezed, a white liquid (semen) may emerge. No granules can be seen when looking closely at the tissue of male gonads.

Use the sex code 'M' (male) to record male specimens.

Lumen

Male gonads
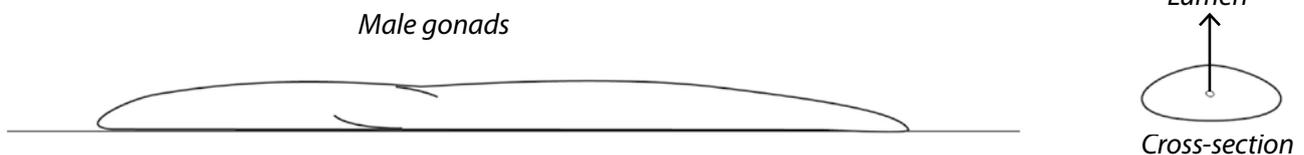
Cross-section

Female – 'F'

A cross-section of the female gonad looks mostly circular. It also contains a small lumen (hole) that is somewhat rough at the edges and runs the full length of the gonad. Female gonads usually, but not always, have a yellow to orange tinge. The colour may be deeper, depending on the maturity of the gonad. When looking closely at female gonad tissue, small granules (eggs) can be seen. These are more obvious in more mature gonads.

Use the sex code 'F' (female) to record female specimens.

Female gonads

Cross-section

Indeterminate – 'I' (immature)

If the gonad is checked but is too immature to determine the sex, the observer can record I – (indeterminate). Both immature male and female gonads are likely to be string-like and thin and some of the features outlined above may not be obvious when the gonad is examined.

Unknown – 'U'

Use the sex code 'U' – (unknown) when unable to check the sex of the marine species.
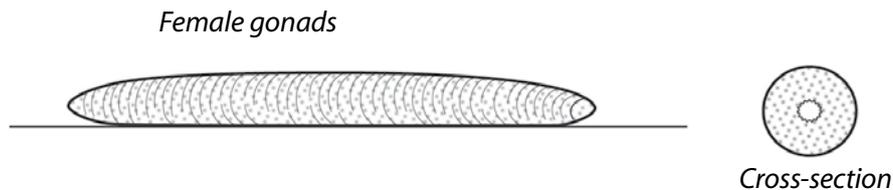**Caution:** Note the difference between the sex codes 'I' and 'U'.

Blank data field

Use this data field for any special projects that require the observer to record extra information about any hooked specimens. Fill in the title of the blank field at the top of the column. The title should indicate the type of data that is being recorded in these data fields. This may be a sample number, a second length measurement, etc. If no special projects have been assigned, this data field can be used as extra space for comments.

Comments and tag numbers

Any extra comments which may help to further explain about the information recorded on the LL-4 form can be written here. If the space is too small make further notes in the diary. Include a key word or two that suggest what the comment is about, along with the diary page number where further comments can be found. Later, the notes from the comments section of the LL-4 plus the notes from the daily diary can be used to report more fully on the subject in the trip report. Another good use for the comments field is to record a photo frame number if a photo has been taken.

Caution: Comments must always be supplied for:

1) Any specimen that has been retained but not measured;
2) Any specimen that has been processed but not sexed; and
3) Any group or 'UNS' species code; in this case, the comments should direct the reader to a further description of the species.

Baskets monitored

Tally area
This area of the form is used to help keep track of the precise number of baskets that have been fully monitored by the observer. It should be maintained diligently.

After *missing the first float,* mark down a notch or tick in the tally area for every float that is **observed directly** coming onboard the vessel. The number of floats counted in this way will be equivalent to the number of baskets directly observed by the observer.

If the observer needs to leave the deck for more than a minute or two, and cannot continue to monitor the haul (see 'Monitoring the haul', page 69) they should **wait until they have fully recorded all the species in the basket they are monitoring**, and then mark a notch for the last float they monitored to indicate the end of the basket. A time and comment must then be inserted on the main part of the LL-4 form stating when they left the deck. When the observer is able to start monitoring the haul again, a time and a comment must also be inserted on the main part of the LL-4 form stating when they returned to the deck. Do not start to monitor, or record any species, until the first float comes in. Again, after *missing this first float* mark down a notch for every float that is observed directly coming onboard the vessel. Continue marking down a notch for each float that comes onboard until the end of the haul.

When all the rows on the LL-4 form have been completely filled in, start a new LL-4. Continue the basket tally on the new form.

Total
For each completed LL-4 form, count up the notches or ticks in the 'tally area' and write the total number in the right-hand data field marked 'Total'.

At the end of the haul, add up every 'Total' on all the LL-4 forms that were filled in for the same haul. Record this overall figure as the 'Total baskets observed this haul' on the LL-2/3 form completed for the same fishing operation.

Example:
First LL-4 form of the trip

+ second LL-4 form of the trip

Add up the form totals and record the answer on the LL-2/3 form:

Form GEN-1
Vessel and aircraft sightings and other transfer logs

Data submitted

The number of GEN-1 forms that need to be filled in will depend on the number of sightings and amount of transfer information that is collected during the trip. However, at least one GEN-1 form *must* be completed.

If there is no appropriate information for this form (i.e. no vessels or aircraft were sighted, and no transfers made) then put a comment on the first GEN-1 form in the first workbook to confirm this; for example, 'No sightings noted this trip' under the vessel or aircraft sightings area, and 'No transfers this trip' under the 'Transfers by the observer's vessel' area on the first blank GEN-1 form in the first workbook. This will explain the absence of any GEN-1 data.

Header details

OBSERVER NAME	VESSEL NAME	OBSERVER TRIP ID NUMBER	PAGE	OF
Leban Benson	Kap Fresh # 5	LAB 08-03	1	1

The header details *must be fully filled in on every completed form* (for information on observer name, vessel name, observer trip ID number and page number, see 'Header details', page 13).

Vessel or aircraft sightings

Information gathered about vessel or aircraft sightings can help keep a check on any IUU vessels (illegal, unreported, unregulated) and can indicate the intensity of fishing in certain areas (VMS data can also be used when proper agreements are in place). It can also provide information about activities in unregulated areas (i.e., high seas areas) that is otherwise difficult to get.

IUU vessels may include vessels that:
≫ do not have a licence to fish;
≫ fish in an illegal manner when they do have a licence; or
≫ are involved in fishing activities that have not been reported or have been misreported.

As observed vessels will have paid their licence fee, the captain and crew may be happy to help the observer gather information about other vessels who may not have paid their licence fee.

How to gather information on sightings

Once observers have left port, they should start filling in the sighting section of the form as soon as they see any other vessels or aircraft. Fill in as much information as possible about the sighted vessel/aircraft. It does not matter if all the required information cannot be filled in immediately. If it is not possible to get information for some of the data fields straightaway, then leave them blank initially. If the observer's vessel gets closer, record information in the blank fields when possible, and verify the information that has already been inserted. Eventually, after the observer's vessel or the sighted vessel has left the area, put a dash in any of the data fields for which it was not possible to collect information at any time during the sighting period.

Some vessels may never come any closer and there may be no opportunity to record any information other than the observer's own vessel position, along with the compass bearing and the distance to the sighted vessel/aircraft. This is okay. It is possible that another observer in the vicinity will also see the vessel and this information will help to pinpoint the exact position of the sighted vessel/aircraft.

If a previously sighted vessel comes much closer later on, and it becomes possible to get better details, make a new record on the same vessel on the line below. At the end of the day, check that all the data fields have been filled in or dashes have been inserted. No data fields should be left blank.

VESSEL OR AIRCRAFT SIGHTINGS

SHIP'S TIME		OBSERVER'S VESSEL POSITION				SIGHTED VESSEL OR AIRCRAFT				COMPASS BEARING	DISTANCE	ACTION CODE (seen vess)	PHOTO FRAME #	COMMENTS
DATE	TIME	LATITUDE (dd° mm.mmm')	N S	LONGITUDE (ddd° mm.mmm')	E W	NAME	INTERNATIONAL CALLSIGN	FLAG	TYPE CODE	(degrees)	(Nautical Miles)			
27/08/08	10.05	09° 05.946	S	158° 03.426	E	Capt St Tamo	WX 125	NZ	1	045°	3	PF	——	Seems to be searching for fish
27/08/08	13.34	09° 54.123	S	159° 56.214	E	Samta M????	H??34	KR	1	125°	5	PF	——	Chasing a school ?
27/08/08	15.27	10° 48.852	S	160° 22.566	E	Forutna # ???	——	VU	9	90°	4	NF	——	Transiting
27/08/08	17.02	10° 12.537	S	160° 21.258	E	Sea Chase	HI567	KR	2	90°	2	NF	——	Transiting
27/08/08	17.18	10° 12.297	S	160° 20.154	E	Fortuna # 8	——	VU	9	0°	2	NF	——	Floating in this position

Ship's time

Date

Time

For every record, note down the ship's date and time that the vessel or aircraft was first sighted.

Caution: The GEN-1 form now asks observers to record ship's time. Observers are no longer required to record UTC time on the GEN-1 form.

Observer's vessel position

Latitude / Longitude
The latitude and longitude positions can be recorded from the vessel's GPS (see page 34). Record the latitude (dd° mm.mmm) and longitude (ddd° mm.mmm) to three decimal minutes. Check that the GPS is recording to decimal places of minutes and not to seconds. Remember to record N for north, S for south, E for east and W for west.

Note: The *observer vessel's position* should be compatible with the *compass bearing* and the *distance record*. So make sure **all these values are recorded at the same time**. It is okay to fill in other pieces of information as they become available, but these three data fields should be recorded at the same time.

Sighted vessel or aircraft

Name
Record the name of the sighted vessel, which is usually painted on the side of the hull or on the back of the vessel. It is very important to note down the numbers associated with the name, if there are any.

If it is not possible at any time during the sighting to see the full name, but some of the name can be seen, then record the part of the name that is clear and leave question marks for the parts that cannot be clearly identified

(for example: '*Rodriguez Catcher ???*' or 'C*?????* *Maru 88*'). Mention in the comments which part of the name could not be seen, i.e. the number or some letters.

International radio call sign

Record the international radio call sign (IRCS) which, for licensed fishing vessels in this region, should be painted in large letters/numbers on the side of the wheelhouse (see page 32).

If it is not possible at any time during the sighting to see the full IRCS, then record the part of the call-sign that is clear and leave blanks for the letters or numbers that cannot be clearly identified. For example, if the call sign appears to be 'W░W░░' so that only certain letters are visible like the 'W's and it seems likely that there are five letters and/or numbers making up the IRCS, then record it as 'W ? W ??'.

Flag

The flag of the vessel is the registered nationality of the vessel. There are several ways to find the flag of the vessel. Usually, the port of origin is stamped on the stern of the vessel. However, the port of origin does not always indicate the actual flag of the vessel. Sometimes the flag is painted on the side of the vessel's bridge, or it may even be flying its registered flag.

Some country codes are marked on the GEN-6 form. Use these codes to save space and ensure there is no confusion about the data provided.

Type code

Vessel and aircraft type codes are written at the bottom of the GEN-1 form. Use these codes to describe the type of vessel seen. If the type of vessel is not on the list, use code '31' (Other – please specify) and describe the vessel type in the comments column.

1. Single purse seine
2. Longline
3. Pole-and-line
4. Mothership
5. Troll
6. Net boat
7. Bunker
8. Search, anchor or light boat (*also known as tender vessels*)
9. Fish carrier
10. Trawler
11. Light aircraft
22. Helicopter
31. Other… please specify

Other details

Compass bearing (degrees)
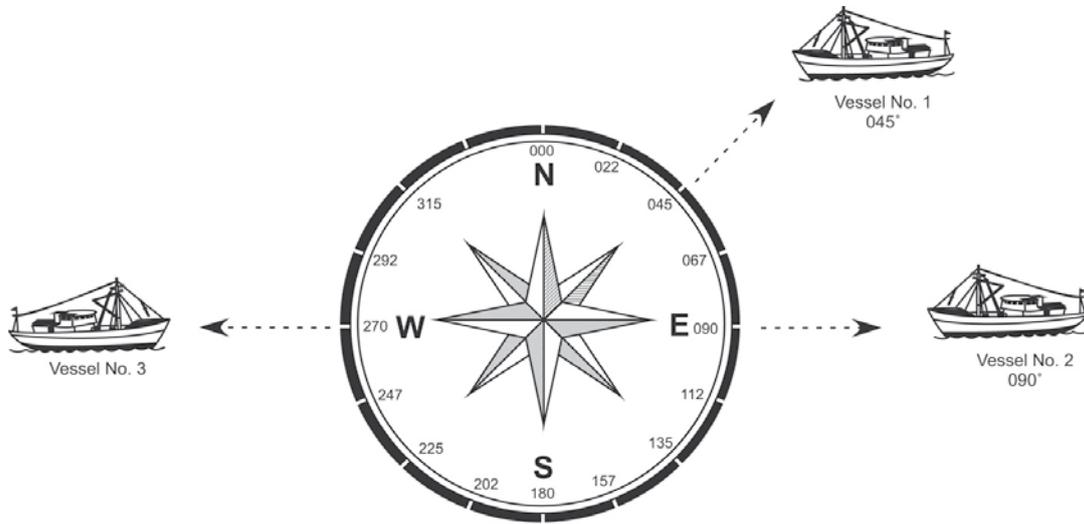
Vessel No. 1
045°

Vessel No. 2
090°

Vessel No. 3

The compass bearing indicates the direction to the sighted vessel/aircraft from the observer's vessel. The value will be recorded in degrees. (Please record degrees and not the N, S, E, W, NE, EWE, etc., conventions). When recording degrees, use the three-figure notation (i.e. forty-five degrees is recorded as 045° and not 45°; five degrees is recorded as 005° and not just 5°).

Use the compass in the wheelhouse to determine the compass bearing for the line of sight to the sighted vessel/aircraft. The direction that the observer's vessel is actually heading in will not matter – just line up the direction to the sighted vessel and read what this line of direction is on the wheelhouse compass.

As an example, the line of sight in the diagram above for vessel # 1 is 045° on the compass. The compass bearing will be recorded as 045°. Vessel # 2 is directly to the east and so its compass bearing is 090°. What will the compass bearing for vessel # 3 be?

Distance (nautical miles)

Use the radar in the wheelhouse to calculate the distance between the vessel and the sighted vessel/aircraft. Ask the captain or another officer to help with this, if necessary. If it is not possible to use the radar, give a best estimate. Remember, the horizon is 6 nautical miles away from the vessel. Record the value up to one decimal place.

Action code (seen vessel)

What was the sighted vessel that is recorded on this line doing when seen? Use the 'Action Codes' marked on the bottom-right of the GEN-1 form to indicate the main activity of the vessel when it was sighted.

The codes are:

FI   Fishing
PF   Possibly fishing
NF   Not fishing
DF   Dumping fish

and the codes for observed exchanges between vessels (vessel transfers) are:

Receiving			**Giving**	
TR	Transhipping fish	**TG**	Transhipping fish	... (from *hold* in one boat to hold in other boat)
SR	Set sharing	**SG**	Set sharing	... (from one boat's *net* to another boat's hold)
BR	Bunkering	**BG**	Bunkering	
OR	Other specify…..……..	**OG**	Other …………………………..	

Notes:
- Bunkering is usually with a tanker but may be with another fishing vessel or any other vessel.
- Examples of 'Other' may be crew; food; cigarettes; salt (for brine); engine parts; etc.
- If two vessels are seen making a transfer (neither of them being the observer's vessel) then two lines will need to be filled in this section of the GEN-1 form, one for each vessel. The 'Action Code' for one vessel will be a giving (? G) code and the 'Action Code' for the other vessel will be a receiving (?R) code.
- If two vessels are exchanging more than one type of goods, then use the code that seems to be the most important (transfer of fish is always more important than any other transfer) and note the other items being transferred in the comments.
- Set sharing (SR and SG codes) will be used for sighted purse seiners only.
- The observer should consider whether any bunkering, transhipping or set sharing was a compliance infringement and report this (see 'Dealing with infringement issues', page 108).

Photo frame
Take a photo of the vessel or aircraft whenever possible. It is better to wait until the vessel is close enough to get a clear picture. Photographs of small dots on the horizon are of little use. Always note down the photo frame number on the GEN-1 form.

It is also a good idea to maintain a separate photo-description list in the back of the diary (a list for each film if using conventional film). The list should include each photo frame # and a very brief description of the photo, with date and (if possible) time taken. This will help ensure there is no mix-up of photos later.

Comments
Additional information about the vessel could include its colour; overall shape including length; notes on the name or radio call sign if these have not been clear; and any other distinguishing characteristics. These may help to identify the vessel, especially if its name or call sign is not available.

Fish transferring, fish dumping and bunkering by the observer's vessel

Use this area of the form to record all fish transfers, fish dumping, bunkering or transfers between vessels of any kind that were carried out **between the vessel that is hosting the observer and any other vessel**.

» If observers are onboard a transit vessel that is involved in any of these operations, they should record the information in their diary and in the trip report.

» Sightings of fish transfers, fish dumping or bunkering that are carried out by vessels other than the observer's vessel should be recorded in the first section of the GEN-1 form (Vessel or aircraft sightings).

Keep an eye out for fish dumping which may happen soon after leaving port as the vessel tries to get rid of fish that were not sent for sale. Fish that are hooked and dumped during the longline set should be recorded on the LL-4 form, and not on the GEN-1 form. Do not use the LL-4 form to record any fish that are transferred on to the observer's vessel from another vessel. Fish transferred on to the observer's vessel should only be recorded on the GEN-1 form.

Note: The observer should consider if any bunkering or transhipping by their host vessel was a compliance infringement and report this (see 'Dealing with infringement issues', page 108).

FISH TRANSFERRING, FISH DUMPING, BUNKERING by OBSERVER'S VESSEL																	
SHIP'S TIME		OBSERVER'S VESSEL POSITION				OTHER VESSEL				FISH TRANSFERRED				ACTION CODE (host vess)	Tick box if also using supplementary GEN-1:		√
DATE	TIME	LATITUDE (dd° mm.mmm')	N S	LONGITUDE (ddd° mm.mmm')	E W	NAME	INTERNATIONAL CALLSIGN	FLAG	TYPE CODE	SKJ WGT.	YFT WGT.	BET WGT.	MIXED WGT.		COMMENTS		
03/09/08	6,15	10° 123.57		156° 25.159		Fortuna # 7	BZ345	BZ	7	——	——	——	——	BR	Took fuel on board		
															from this tanker		

Ship's time

Date

Time

For every record, note down the ship's date and time that the vessel or aircraft was first sighted.

Caution: The GEN-1 form now asks observers to record ship's time. Observers are no longer required to record UTC time on the GEN-1 form.

Observer's vessel position

Latitude and Longitude
The latitude and longitude positions can be recorded from the vessel's GPS (see 'GPS', page 34). Record the latitude (dd° mm.mmm) and longitude (ddd° mm.mmm) to three decimal minutes. Ensure that that the GPS is recording to decimal places of minutes and not seconds. Remember to record N for north, S for south, E for east and W for west.

Other vessel

In the case of fish dumping by the observer's vessel, put a dash in the following four data fields.

Name
Record the name of the vessel that is receiving fish or other goods from the observer's vessel (or giving them to the observer's vessel).

International radio call sign (IRCS)
Record the IRCS, usually seen as large letters and numbers on the side of the vessel.

Flag
The flag of the vessel is the registered nationality of the vessel. There are several ways to find out the flag of the vessel. Usually the port of origin is stamped on the stern of the vessel. However, the port of origin does not always indicate the actual flag of the vessel's registered nationality. At times, the flag can be seen painted on the side of the vessel's bridge or it may even be flying its registered flag.

Some country codes are marked on the GEN-6 form. Use these codes to save space and ensure there is no confusion about the data provided.

Type code
Choose a code to describe the other vessel involved in the transfer of fish or goods. Codes for different types of vessels and aircraft are listed at the bottom of the GEN-1 form. If the type of vessel is not on the list, use code '31' – (Other – please specify). Describe the type of vessel seen in the comments column.

Fish transferred

(SKJ weight, YFT weight, BET weight, Mixed weight).
If the observer's vessel **dumps fish**, or **receives fish** from another vessel, or **gives fish** to another vessel then record the weights of the fish that were involved here. Try to record accurate information on weight. Note in the comments area how the weight value was obtained, stating whether it was possible to count single fish being transferred or just cartons of fish. Record the weights under their species heading if possible. Otherwise, record just one total weight under the mixed weight data field. Record the weight up to 3 decimal places if required. Remember 0.001 mT = 1 kg.

Put a dash in this area if the observer's vessel is only involved with bunkering or other forms of transfer and not with fish transfers.

Action code (host vessel)
Choose one of the action codes at the bottom of the GEN-1 form to further describe how the observer's vessel was involved in transferring fish, dumping fish, bunkering, or other form of transfer.

If the observer's vessel dumped fish, use the 'DF' (dumping fish) action code. In all other cases choose between the receiving (?R) or the giving (?G) codes, depending on whether the observer's vessel received or provided the goods.

For example:

If the observer's vessel was **receiving** fuel from another vessel, use the action code **BR** (receiving/bunkering).
If the observer's vessel was **giving** fish to another vessel, use the action code **TG** (giving/transhipping fish).

Caution: Do not use the first three action codes (FI – fishing, PF – possibly fishing, NF – not fishing) in this section of the form. These codes are only used for vessel and aircraft sightings.

Caution: Remember that a GEN-6 form (pollution report) may need to be filled in if a vessel dumps a large amount of fish, especially when in the harbour or within three miles of the shore.

Comments
The comments area can be used to record further information about the other vessel's name, IRCS, and flag. A further description of how the observer estimated the transferred weight could also be recorded. If necessary continue any comments in the diary and note the diary page in the comments.

Form GEN-2
Species of special interest

Data submitted

≫ A GEN-2 form must be filled in for **every single species of special interest (SSI) that is landed on deck**. So if 10 dolphins are landed on deck during one set, 10 GEN-2 forms should be filled in.

≫ *One* GEN-2 form must also be filled in **every time that one or more SSI interact with the vessel,** and **every time a sighting of one or more SSI is made from the vessel**.

≫ If no species of special interest are seen during the trip, the observer should make a comment confirming this on the first blank GEN-2 form in the first booklet. This will explain the absence of GEN-2 data.

Species of special interest (SSI) include:
• All turtles
• All marine mammals (e.g. all whales and dolphins)
• All birds
• Whale sharks

Header details

OBSERVER NAME	VESSEL NAME	OBSERVER TRIP ID NUMBER	PAGE	OF
Leban Benson	Van Loic # 768	LAB 08-03	1	2

The header details *must be fully filled in on every completed form* (see 'Header details' for information on observer name, vessel name, observer trip ID number and page number, from page 13).

The species was

> Some information about the landed SSI will have been noted on the LL-4 form already (i.e. time of landing, species code, fate). Make sure that the information on the two forms matches. Additional information about the landed SSI will be recorded on the GEN-2 form.

Every time a GEN-2 form is filled in, *all* of the data fields in this section must be completed. If a dash is inserted in any field, make a note in the trip report explaining why it was not possible to get the data.

Tick to indicate: 'Landed on deck' or 'Interacted with vessel's gear only' or 'Sighted only'

The species was:	Tick to indicate	LANDED ON DECK ☐	INTERACTED WITH VESSEL'S GEAR ONLY ☐	SIGHTED ONLY ☐

Landed on deck: Tick this box if any SSI were caught, hooked, tangled, ensnared or trapped by the vessel's gear and subsequently landed on deck.

Interacted with the vessel's gear only: Tick this box if any SSI touched, came very close to, got hooked by, tangled in, was ensnared by, or interfered with the vessel's gear, but was <u>not landed on deck</u>.

Sighted only: Tick this box if any SSI were sighted some distance away from the vessel. These SSI will not have come close to or come into contact with the vessel or any part of its gear.

After filling in the header details simply tick one (only) of these data fields to indicate the type of contact that occurred between the species of special interest and the vessel. The box will indicate the **final** outcome of the SSI's encounter with the vessel. If a turtle hooked at the end of a branchline is subsequently landed, there is no need to fill in any information about when the turtle was first sighted or when it was first observed interacting with the vessel.

Always observe all SSI carefully from the moment they first emerge from the water so that the final outcome of the interaction can be recorded accurately.

The data field that is ticked will direct the observer to the next information box to fill in. The other two information boxes can be dashed (see the example on page 105). Here the observer has ticked the 'Landed on deck' data field, and filled in the 'Species landed on deck' information box. Dashes have been inserted in the 'Interactions with vessel or vessel gear' and the 'Species sighted' information boxes.

Tick one: 'Time of landing' or 'Time of interaction/sighting'
Tick one of these two data fields to indicate what the time record refers to:
1) The time the species landed on deck (this must match the LL-4 record).
2) The time of the interaction or sighting. Record the time the observer first observed the interaction or sighting.

Latitude/Longitude
1) For any SSI that lands on deck, record the 'Start of set position' for the set. Transfer this information directly from the LL-2/3 form.
2) For SSI that have interacted with the vessel, or have only been sighted, note the position of the observer's vessel when the SSI was first seen.

The latitude and longitude positions can be recorded from the vessel's GPS (see 'GPS', page 34). Record the latitude (dd° mm.mmm) and longitude (ddd° mm.mmm) to three decimal minutes. Ensure that that the GPS is recording to decimal places of minutes and not seconds. Remember to record N for north, S for south, E for east and W for west.

Species code
Record the three-letter FAO species ID code for the species that has landed on deck.
Record a three-letter FAO group code if the species was difficult to identify.

Some SSI group codes that could be used are listed below. However, try to avoid using species group codes, especially for species that are landed on deck. If a species group code is used, refer to the explanation on 'Providing further descriptions for group or 'UNS' species codes', page 72. SSI that have only interacted with, or been sighted from, the vessel are more difficult to identify, and therefore the species group codes may need to be used in these situations. However, with more experience, observers should become better at correctly identifying SSI that are still in the water.

TTX – turtles
MAM – all marine mammals
WLE – all whales
ODN – all toothed black whales
MYS – all baleen whales (non-toothed whales)

DOP   –   all dolphins
BIZ   –   all birds

Species description

Describe the species seen. This will help to validate the choice of species code or perhaps prompt a debriefer to change it. This can be important for species of special interest that look similar. Describe the colour, any obvious colour markings, the overall body shape, and the shape of the head, beak (if present) and fins. Note also the location of the fins in relation to other fins. Count and record the costal scales of turtles. Use the diary if more space is needed, noting the diary page number on the GEN-2 form.

After 'The species was' section has been filled in, observers should then fill in **one** of the following information boxes:
1. Species landed on deck.
2. Interaction with vessel or vessel gear.
3. Species sighted.

The information box that will be filled in depends on which of these were ticked in 'The species was'.

GEN-2 condition codes versus LL-4 condition codes

When filling in a condition code on the GEN-2 form, the observer should review and select only the condition codes marked on the back of the GEN-2 forms.

The GEN-2 condition codes are an expanded version of the LL-4 condition codes. When filling in a condition code on the LL-4 form the observer should only review and use the condition codes on the back of the LL-4 form.

Species landed on deck

The species was:	Tick to indicate	LANDED ON DECK ✓			INTERACTED WITH VESSEL'S GEAR ONLY ☐				SIGHTED ONLY ☐	

TIME OF LANDING (see PS-2, PL-2, LL-4)	√	Tick one !	SHIP'S DATE AND TIME					LATITUDE (dd°mm.mmm')	N S	LONGITUDE (ddd°mm.mmm')	E W
			DD	MM	YY	hh	mm				
TIME OF INTERACTION / SIGHTING			25	08	08	20	08	05 12.357	S	149 35.214	E

SPECIES CODE	SPECIES DESCRIPTION
LEO	7 costal scutes, green in colour. Nuchal scale in contact with first coastal scute.

SPECIES LANDED ON DECK:

LANDED:	CONDITION CODE	CONDITION DESCRIPTION
	A6	Seemed very much alive and healthy. Was looking around everywhere, flippers flapping stongly, hooked lightly in right flipper.

DESCRIBE ONBOARD HANDLING		LENGTH (cm)	LENGTH CODE	SEX (M-F-I-U)
Hooked in the right flipper. The hook was removed by one of the crew. There was a small wound, but not too big.		38	CL	I

DISCARDED:	CONDITION CODE	CONDITION DESCRIPTION
	A2	Swam away from the vessel and dived deeply immediately. Did not hand around the boat. Does not seem to have been affected too much by the encounter.

TAGS	RETRIEVED			PLACED		
	TAG NUMBER	TYPE	ORGANISATION	TAG NUMBER	TYPE	ORGANISATION
	_____	____	_____	_____	____	_____

Fill in this section if any species of any SSI was caught, hooked, tangled, ensnared, trapped by the vessel's gear, and subsequently landed on deck. The other two information boxes can be dashed.

Note: The observer should consider reporting the catch of a species of special interest as a compliance infringement (see 'Dealing with infringement issues', page 108).

Landed: condition code
Choose from one of the condition codes on the back of the GEN-2 form to describe the condition of the species *when it* first landed on deck.

Landed: condition description
Observers should explain why they chose a particular condition code by commenting on the condition of the species when it was first landed on deck. If the condition code describes the SSI as alive and healthy, explain what it was about the animal that gave this impression. Was the species thrashing around the deck, or was it still and quiet? Describe fully any injuries that were seen. Use the observer's diary if more space is needed and indicate the diary page number on the GEN-2 form.

Describe onboard handling
Write a full account of the treatment the species received while onboard the vessel. Use the observer's diary if more space is needed and indicate the diary page number on the GEN-2 form.

Length (cm)
Use calipers to measure SSI and record the lengths in centimetres (see page 17). If the SSI is longer than the calipers, then take two measurements (see 'Large species', page 19). Turtles should only be measured with calipers.

Length code
Record a length code to describe what part of the SSI was actually measured. Most marine mammals and whale sharks can be measured with a UF length measurement (upper jaw to fork in tail), while turtles will be measured with a standard carapace length measurement (CL) (see 'Length code', page 74).

Sex (M-F-I-U)
Check the external features to record the sex of marine mammals and whale sharks (see 'Marine species that can be sexed from external features', page 87). At present, observers are not required to state the sex of landed turtles or birds.

Discarded: condition code
Choose from one of the condition codes *on the back of the GEN-2 form* to describe the condition of the species *just before it was put back into the sea.*

Discarded: condition description
Observers should explain why they chose a particular condition code by commenting on the condition of the specimen just before it was put back into the sea. If the condition code described the SSI as dead, explain what it was about the species that gave this impression. Describe fully any injuries noticed. Use the diary if more space is needed and indicate the diary page number on the GEN-2 form.

Tags

Check all landed SSI for tags. If any are found, fill in the 'Retrieved tag' section. If asked to tag SSI, fill in the tagging information under the 'Placed' section. Remember to put a dash in the data fields if no tags were found or deployed.

Retrieved **(for any tags found and removed from any landed species of special interest)**

Tag number
Record the number written on the tag.

Type
Record the type of tag that was retrieved. Was it a common dart tag, an archival tag, a pop-up tag, etc.?

Organisation
Record the name of the organisation that placed the tag (this will be written on the side of the tag).

Placed **(for any tags deployed or placed on species of special interest by the observer)**

Tag number
Record the number written on the side of the tag.

Type
Record the type of tag that was placed. Was it a common dart tag, tag, an archival tag, a pop-up tag, etc.?

Organisation
Record the name of the organisation that placed the tag (this will be written on the side of the tag).

Interactions with vessel or vessel gear

Fill in this section if any species of special interest (SSI) touched, came very close to, got hooked by, tangled in, ensnared by, or interfered with the vessel's gear but was *not landed on deck.* This includes any SSI that was hooked but was subsequently released or escaped without being landed onboard. It also includes any birds that were seen diving for the longline bait. The other two sections can be dashed (see example on page 105).

Vessel's activity during interaction
Tick to indicate what the observer's vessel was doing when the SSI was first seen to interact with the vessel.

Start of interaction: No.
Record the total number of the species that were involved at the start of the interaction. Remember this refers to the species code you recorded at the top of the GEN-2 form. If more than one type of species is involved you will have to fill in another GEN-2 form.

Start of interaction: Code
Choose one of the condition codes on the back of the GEN-2 forms to describe the condition of the SSI when if was first seen interacting with the vessels.

The species was:	Tick to indicate	LANDED ON DECK ☐		INTERACTED WITH VESSEL'S GEAR ONLY ☑			SIGHTED ONLY ☐	

TIME OF LANDING (see PS-2, PL-2, LL-4)		Tick one !	SHIP'S DATE AND TIME					LATITUDE (dd°mm.mmm')	N S	LONGITUDE (ddd°mm.mmm')	E W
			DD	MM	YY	hh	mm				
TIME OF INTERACTION / SIGHTING	√		25	08	08	20	08	05° 12.357	S	149° 35.214	E

SPECIES CODE	SPECIES DESCRIPTION
FAW	Small dark whale, dorsal find definitely mid-back but it was difficult to check features.

SPECIES LANDED ON DECK:

LANDED:	CONDITION CODE	CONDITION DESCRIPTION

DESCRIBE ONBOARD HANDLING		LENGTH (cm)	LENGTH CODE	SEX (M-F-I-U)

DISCARDED	CONDITION CODE	CONDITION DESCRIPTION

TAGS

	RETRIEVED			PLACED		
TAG NUMBER	TYPE	ORGANISATION	TAG NUMBER	TYPE	ORGANISATION	

INTERACTIONS WITH VESSEL OR VESSEL GEAR:

VESSEL ACTIVITY DURING INTERACTION: →	SETTING ☐	HAULING ☐	SEARCHING ☐	TRANSITING ☐	OTHER (specify) √	Soak time

CONDITION

	START OF INTERACTION:	No.	CODE	DESCRIPTION	END OF INTERACTION:	No.	CODE	DESCRIPTION
		3	A1	Lively, swimming slowly around the boat during soak time		2	A1	Swam away, no injuries.

DESCRIBE THE INTERACTION

Three black whales were seen swimming around the boat during the soak time. They were pretty close to the boat, but they didn't touch the boat or the mainline. They were just swimming around calmly and then they swam off. Only saw two at the end of the interaction. The other one must have swum off earlier. We didn't see them after soak time, but we had a few tuna heads on the line, see my LL-4 data sheets.

SPECIES SIGHTED

VESSEL ACTIVITY WHEN SIGHTED: →	SETTING ☐	HAULING ☐	SEARCHING ☐	TRANSITING ☐	OTHER (specifiy) ☐

NUMBER SIGHTED	NUMBER OF ADULTS	NUMBER OF JUVENILES	ESTIMATE THE OVERALL LENGTH(s) (From the head to the tail)

DISTANCE FROM VESSEL	SPECIES BEHAVIOUR WHEN SIGHTED
m	
nM	

Start of interaction: Description
Observers should explain why they chose a particular condition code by commenting on the condition of the specimen when it was first seen to interact with the vessel. If the condition code describes the SSI as alive and healthy, explain what it was about the species that gave this impression. Was the species thrashing around the deck or was it still and quiet? Describe fully any injuries noticed. Use the daily diary if more space is needed and indicate the diary page number on the GEN-2 form.

End of interaction: No.
Record the total number of the species that were still involved at the end of the interaction. This maybe different to the total numbers that were involved at the start of the interaction. Remember this refers to the species code you recorded at the top of the GEN-2 form. If more than one type of species is involved you will have to fill in another GEN-2 form.

End of interaction: Code
Choose one of the condition codes on the back of the GEN-2 forms to describe the condition of the SSI just before it was last seen interacting with the vessel.

End of interaction: Description
Observers should explain why they chose a particular condition code by commenting on the condition of the specimen when it was last seen to interact with the vessel. If the condition code describes the SSI as alive and healthy, explain what it was about the species that gave this impression. Was the species thrashing around the deck or was it still and quiet? Describe fully any injuries noticed. Use the daily diary if more space is needed and indicate the diary page number on the GEN-2 form.

Describe the interaction
Give full details of every aspect of the interaction of the SSI with the vessel. Did the SSI actually touch the vessel? Was it harmed by the interaction? Did the SSI bow ride or ride the wake at the stern of the vessel? Did it eat any of the catch? Use the diary if more space is needed and indicate the diary page number on the GEN-2 form.

Species sighted

Fill in this section if any species of special interest (SSI) was sighted some distance away from the vessel, but did not interact with the vessel or its gear, or land on deck. The other two information boxes can be dashed. Recording sightings of species of special interest is not a high priority for observers, but is something that can be done if an observer has time. Keeping an eye out for SSI when the observer is not involved in other duties is appreciated as at present there is not enough information on sightings of marine mammals in the Pacific region. For now, observers are not encouraged to record sightings of birds.

Vessel's activity when SSI was sighted
Tick to indicate what the vessel was doing when the SSI was first sighted. If the vessel was not setting, hauling or transiting, state exactly what the vessel was doing at the time the SSI was first sighted.

Number sighted
Record the total number of this species sighted by the observer.

Number of adults
Indicate, if possible, the total number of the recorded 'Number sighted' that were adults.

Number of juveniles

Indicate, if possible, the total number of the recorded 'Number sighted' that were juveniles.

Estimate the overall lengths

Give a best eye-estimate of the overall lengths of the SSI seen by the observer. If both adults and juveniles are present, give an eye-estimate of the average size of the juveniles and another eye-estimate of the average lengths of the adults. The value can be recorded up to one decimal place.

Distance from vessel

Give a best eye-estimate of the distance in nautical miles of the SSI from the vessel. Try to use some known indicators like the distance to the horizon, which is six nautical miles. The overall length of the vessel may also be used as a length reference. If the SSI is less than one nautical mile away, metres can be recorded, but the word 'metres' must be written in the data field. However, if the SSI is only a short distance away, the observer should be able to justify that it was a 'sighting' and not an 'interaction'. The value can be recorded up to one decimal place (if using metres, record the distance as a whole number only).

Species behaviour when sighted

This data field is mostly useful for sightings of marine mammals (whales or dolphins). Use whatever words are necessary to describe their behaviour when sighted, but be sure to use the terms below accurately if they are seen carrying out any of these behaviours:

bow riding (swimming off the bow of the boat)
wake riding (swimming closely behind the boat)
breaching (launching themselves into the air head first and then falling back into the water)
lobtailing (tail slapping)
logging (lying at the surface after deep dives)

? *I sighted a few birds flying overhead.*
Do you want me to record that?

There is no need to record every bird that is seen flying around in the sky or any healthy bird that lands on deck to take a rest. While interactions between birds and longline vessels that result in an injury to the bird are rare in the region (and are mostly limited to the more temperate areas), birds are listed on the GEN-2 form to ensure that any birds that are harmed by longline vessels are recorded on the data sheets.

There is no need to record bird sightings.

Record all bird interactions that *could or did result in an injury for the bird.*

For example: record any instances of birds diving down after the bait, etc. There is no need to record birds taking a rest on the deck of the vessel unless they end up on the dinner plate.

Record all bird species that get hooked or tangled in the line.

Form GEN-3
Vessel trip monitoring record

Data submitted

One (and one only) GEN-3 form must be filled in at the end of every single trip. Fill in the first form in the first workbook. A second form is included in most observer workbooks as a back-up only.

Header details

OBSERVER NAME	VESSEL NAME	OBSERVER TRIP ID NUMBER
Leban Benson	Kap Fresh # 5	LAB 08-03

The header details *must be fully filled in on every completed form* (for more information on observer name, vessel name, observer trip ID number and page number, see page 13).

Dealing with infringement issues

The GEN-3 form summarises all compliance infringements, potential compliance infringements and other issues that were directly observed by the observer. This includes observed evidence that implies the vessel may have made an infringement during the trip that the observer did not see directly.

While the LL-2/3 form helps to remind observers to review the GEN-3 form at the end of every fishing operation, the *GEN-3 form should be reviewed at the end of every day the observer is onboard*. If the vessel has attempted to carry out, or been involved in, any of the infringements outlined on the GEN-3 form, then a full report should be made in the observer's diary. Start the diary report by clearly writing the letter and header associated with the issue on the GEN-3 form. Continue the diary report with a full description of the incident. Include as much detail as possible, i.e. time (use ship's time), position, name/s of people involved, details of any conversations about the incident (especially if the observer was involved in the conversation), and if there were communication problems as the information may end up being used in court.

Certain categories of issues may occur on a daily basis (for example, e*) Not record bycatch and discards*). In cases where the same issue happens every day, one full description in the diary is sufficient at the start. Daily diary reports can then refer to this description, but must also include the new times and positions that the issues occurred, along with any new information or developments associated with the issue that the observer discovers later on that day. (It may be helpful to set up a table on a spare page of the daily diary, or spare page attached to the observer's written trip report, to record daily times, positions, etc., in one place.)

Infringement summary: tick 'Yes' or 'No'

At the end of the trip, observers should check back through their diaries, with the GEN-3 form in hand, and summarise all infringement issues by ticking the 'Yes' box on the appropriate line if the master or crew attempted, or were involved in, any of the infringements listed on the GEN-3 form. This will be easier to do if observers clearly mark the letter and header associated with the infringement in their diary when writing up the infringement report.

Issues that happen frequently will still be summarised on the GEN-3 form with a single tick, although they will also be reported regularly in the observer's diary.

Brief details

Once the GEN-3 form has all the appropriate ticks in place, use the bottom part of the form to give a brief description of the actual issues that occurred, and refer the reader to the diary pages for more detailed information about each issue.

For example, this part of the form may look like this:

Observer signature
Please make sure to always sign this form at the end. The form may need to be used in court and it will be important that it is properly signed off.

Form GEN-6
Pollution report

Data submitted

The number of GEN-6 forms that need to be filled in depends on the number of 'MARPOL' infringements that are observed during the trip. One GEN-6 form must be filled in *every time* a 'MARPOL' infringement is observed, whether the infringement was carried out by the observer's vessel or by another vessel.

If no pollution infringements are observed during the trip, this should be confirmed by making a comment like 'No pollution incidents observed this trip' on the first blank GEN-6 form in the first workbook. This will help to explain the absence of any GEN-6 data.

Header details

OBSERVER NAME	VESSEL NAME	OBSERVER ID NUMBER	PAGE	OF
Leban Benson	Kap Fresh # 5	LAB 08-03	1	1

The header details *must be fully filled in on every completed form* (for more information on observer name, vessel name, observer trip ID number and page number, see 'Header details', page 13).

Use one GEN-6 form to report on every pollution incident observed. This may mean filling in more than one GEN-6 form during the day. If observers run out of GEN-6 forms, they should keep a note of all pollution infringements in their diary, using the GEN-6 form as a guide as to the type of information that should be noted. Compile all the information about pollution infringements in the observer's trip report.

Remember that the appropriate section on the GEN-1 form must also be filled in if the reported pollution is fish dumping. And the relevant line on the GEN-3 form must be ticked to indicate that a vessel infringement has occurred.

Use the top section of the form to record the time, position, weather details, etc. for each pollution infringement, then choose the type of pollution that occurred, i.e. waste dumping or oil spillage/leakage and fill in the appropriate box. Generally, only one of the two boxes will be filled in on each submitted form as it is unlikely that a vessel will dump waste and spill oil at the same time (this does happen occasionally, however). Fill in the relevant box and put a dash in the other box. Finally, answer the questions at the end of the form.

Note: The observer should consider whether the pollution incident was a compliance infringement and report this (see 'Dealing with infringement issues', page 108).

Incident details

Use the top section of the form to record the time, position, weather details, etc., for when the pollution infringement was first observed. Then choose the data field box to indicate the type of pollution that occurred, i.e. waste dumping or oil spillage/leakage.

Date of incident

Fill in the date that the pollution infringement occurred. Use the ship's date.

Time

Fill in the time the infringement first occurred. Use ship's time.

Latitude/Longitude

The latitude and longitude positions can be recorded from the vessel's GPS (see 'GPS', page 34). Record the latitude (dd° mm.mmm) and longitude (ddd° mm.mmm) to three decimal minutes. Ensure that the GPS is recording to decimal places of minutes and not seconds. Remember to record N for north, S for south, E for east and W for west.

EEZ/Harbour

Mark down the name of the EEZ in which the infringement occurred. A list of country codes is on the back of the GEN-6 form. If the offence took place in the harbour, write down the name of the harbour.

Wind direction

Record the direction the wind was blowing in when the infringement was first observed. Use the compass in the wheelhouse to work out the wind direction. When recording degrees, use the three-figure notation (see 'Compass bearing', page 95).

Wind speed

Mark down the wind speed, in knots, when the infringement was first observed. Work out the approximate wind speed from the state of the sea, using the wind and sea state table at the back of all observer workbooks. A wind speed gauge may also be available in the wheelhouse.

Sea conditions

Record the state of the sea, using the sea state codes provided in the wind and sea state table at the back of all workbooks. This helps to gauge the sea state using the appearance of the sea. Again, this should be done when the infringement is first observed.

Current

Ask the captain or another officer about the speed and direction of the main sea current at the time the infringement happened. The observer may be able to get this information directly if a Doppler current meter is onboard and switched on. Record the speed in knots and the direction in degrees.

> The current direction is the direction the current is moving towards.
>
> The wind direction is the direction the wind is moving from.

Observer's vessel activity

State the activity that the observer's vessel was involved in when the observer first noticed the MARPOL infringement (i.e. transit, setting, soaking, hauling).

Offending vessel details

If reporting on a pollution infringement by another vessel and not by the observer's own vessel, record some details on the identification of the infringing vessel. If only reporting on a pollution infringement by the observer's vessel, put a dash in all of the following data fields.

Name of offending vessel

Fill in the name of the offending vessel in full. If it is not possible to see the full name, but some of the name can be seen, then record the part of the name that is clear and leave question marks for the part that cannot be clearly identified (for example: '*Rodriguez Catcher ???*' or 'C*????? Maru 88*'). Mention in the comments which part of the name was not seen, i.e. the number or some letters.

IRCS

Fill in the **international radio call sign** for the vessel. This should be visible and marked clearly on the side of the boat.

If it is not possible at any time during the sighting to see the full IRCS, then record the part of the call sign that is clear and leave blanks for the letters or numbers that cannot be clearly identified. For example, if the call sign appears to be 'Wᴿ W✳❄' so that the only certain letters are the 'W's and it seems likely that there are five letters and/or numbers making up the IRCS, then record it as 'W - W - - '.

Type of vessel

Use the list of 'Vessel and aircraft type codes' marked on the GEN-1 form to note the type of vessel responsible for the pollution. Use the Type Code '31 (Other please specify ……...)' if none of the other vessel types fit.

To help pinpoint the position of any offending vessel, record this additional information.

Compass bearing

The compass bearing indicates the direction to the sighted vessel/aircraft from the observer's vessel. The value will be recorded in degrees. (Please record degrees and not the N, S, E, W, NE, EWE, etc., conventions). When recording degrees use the three-figure notation (i.e. forty-five degrees is recorded as 045º and not 45º; five degrees is recorded as 005º and not just 5º).

Use the compass in the wheelhouse to determine the compass bearing for the line of sight to the sighted vessel/ aircraft. It will not matter what direction the observer's vessel is actually heading in; just line up the direction to the sighted vessel and read what this line of direction is on the wheelhouse compass.

As an example, on page 95 the line of sight for vessel # 1 is 045º on the compass. The compass bearing will be recorded as 045º. Vessel # 2 is directly to the east and so its compass bearing is 090º.

Distance (nautical miles)

Observers should ask the captain or another officer if they can use the navigational radar to find the distance of the offending vessel from the host vessel at the time the infringement was first noticed. Record the distance in nautical miles.

Waste dumped overboard

Material	Tick each box that applies ↓	Describe Type	Describe Quantity
Plastics	-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-·-
Metals	-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-
Waste Oil	-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-·-
Chemicals	-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-
Old Fishing gear	√	*Monofilament branchlines*	*About 10 damaged branchline during hauling*
General Garbage (within 12 miles of shoreline)	-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-	-·-·-·-·-·-·-·-·-·-·-·-·-·-

Fill this section in if the offending vessel has dumped any type of waste materials overboard. (If significant amounts of fish are dumped, this should also be recorded on the GEN-1 form.) If no waste materials were dumped overboard, just put a dash in this section. Other liquid pollutants that might be seen include liquid chemicals, sewage, deck washings, etc. If observed, these can be reported under the 'Waste dumped overboard' section. Observers should always try to get a photo of any liquid pollution so it can be properly identified.

1. Record *all* plastics dumped overboard. This includes small amounts of plastics such as monofilament line, plastic bags, etc.
2. Record all other dumping of any materials.
3. Use discretion in reporting any dumping of biodegradable materials within 12 nautical miles of the shoreline. For instance, it is not necessary to report when a crew member scrapes his dinner plate into the sea, but it is necessary to report on large dumpings of fish.
4. Liquid pollutants that might be seen include chemicals, sewage, deck washings, and algal (or plankton) blooms. If observed, these can be reported under the 'Waste dumped overboard' section. Oil pollution should be recorded under the 'Oil spillages and leakages' section. Observers should always try to get a photo of any liquid pollution so it can be properly identified.

≫ Tick to indicate the type of material that was dumped. Remember to put a dash in the data fields that have not been ticked.
≫ If any line is ticked, describe the material in more detail under 'Describe type'. For instance, if observers ticked 'Old fishing gear', they could note 'Monofilament line' under 'Describe type'.
≫ If any line is ticked, describe the quantity under 'Describe quantity'. For instance, if you ticked 'Old fishing gear', you could note 'a large ball of line after a tangle – about 0.5 m³'.

Oil spillages and leakages

Fill in this section if any oil traces are seen. Remember any visible oil streaks are illegal, no matter how small they may be.

Oil pollution can be identified by:
≫ a deadening or calming of the sea relative to the surrounding sea surface;
≫ the presence of a silvery sheen and/or rainbow colours;
≫ darker patches where the oil is thicker; and
≫ the presence of brown, orange, and/or yellow coloured mousse (foam).

Most observations of oil will be recorded on the line marked '*Vessel underway*'. Vessel underway is the most suitable choice for any vessel that has left port and is present in the fishing ground. It does not have to be actually moving; it may be stopped in the water, bunkering fuel, for instance. Hopefully, an observer's vessel will never be involved with a '*Vessel aground/Collision*' event. If oil spillages or leakages are spotted when the vessel is still in the harbour, the observer can record the information on the '*Vessel at anchor/Berth*' line. It is unlikely that observers will see oil pollution coming from a land-based source unless they are in a harbour. However, this form can also be used by port samplers or any fisheries personnel to report oil pollution.

» Tick to indicate the source of the oil. Remember to put a dash in the lines that have not been ticked.
» If any line has been ticked, describe the '*Visual appearance/Colour*' of the oil. Make notes on the colour of the oil patch. Note if any silvery/rainbow colours, dark patches or coloured mousse (foam, bubbles) were seen.
» If any line has been ticked, describe the amount of oil spilled under '*Describe area and quantity*'. The size of the observer's host vessel could be used as a size reference. For instance, the oil spill could be reported as twice the size of the area of the boat. For smaller amounts of oil pollution, use callipers or 1 m^2 as an area reference.

Questions

There are four short questions to be answered at the end of every GEN-6 form.

Circle 'Y' to answer yes to any of the questions.
Circle 'N' to answer no to any of the questions.
Circle 'NP' if the observer cannot answer the question due to the language barrier.

If a photo is taken, state the photo frame number in the data field provided.

TAG RECOVERY FORM

SPC is presently involved in its third tagging campaign. The current campaign started in 2006 and is expected to run until 2010. Tuna tagging cruises are intense but limited periods of data collection which aim to capture more information on the status of the tuna fishery.
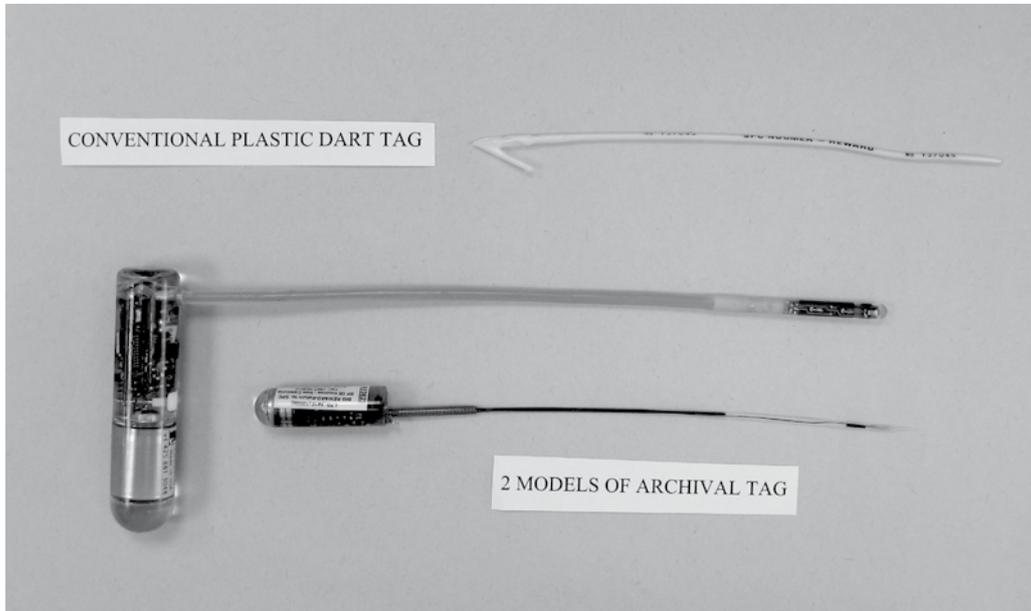
The tag recovery form is not an observer form. The form has been created to allow tuna industry personnel to report the required information for any tag that they have found. Usually this form will be filled in by a person in each of the major unloading ports who has been tasked with recovering tuna tags. The tag recovery form has been added into the longline observer workbook to allow observers to record information on any tags that were either recovered during the trip or were already onboard when the observer boarded but were not yet recorded. However, observer information regarding a tagged tuna landed during the trip should first be recorded on the regular longline forms (i.e. LL-4 form).

Tag number
Find the number on the tag. Pay attention to copying the number correctly and write down all numbers and letters.

Species
Fill in the three-letter FAO species code. Refer to your species identification manual if necessary. It is very important that you be able to tell the difference between juvenile bigeye and yellowfin.

Date caught
Fill in the date the fish was landed. Use the dd/mm/yy date format.

Date returned
Fill in the date the tag and the tag details were sent to SPC.

Species reliability
How sure are you of the species code? The species code will normally be 100 per cent accurate if the observer saw the fish and identified it. However, if you have been given a tag that was recovered by a fisher during a previous

fishing trip you may want to make some remarks about how accurate the species code is. For instance, if the fisher tells you it was a yellowfin tuna, how accurate do you think that is? Ask the fisher to describe the fish, or how he or she knew it was a yellowfin. Make a comment on how reliable the information is.

Date reliability
How sure are you of the date of capture? The date of capture will normally be 100 per cent accurate if the observer was onboard when the fish with the tag was landed. However, if you have been given a tag that was recovered during a previous fishing trip you may want to make some remarks about the accuracy of the date of capture. Was the fisher very sure about the date? Was it captured during the last trip or a long time before you boarded? Did the fisher make a written record of the date it was recaptured, in a diary for instance?

Position of catch

Latitude
Fill in the latitude for the position where the fish with the tag was captured. Use the dd°mm.mmm format and don't forget to fill in whether this position refers to north (N) or south (S) of the equator.

Longitude
Fill in the latitude for the position where the fish with the tag was captured. Use the ddd°mm.mmm format and don't forget to fill in whether this position refers to east (E) or west (W) of the International Date Line

Position reliability
How sure are you of the position information? The position information will normally be 100 per cent accurate if the observer was onboard when the fish with the tag was landed. However, if you have been given a tag that was recovered during a previous fishing trip you may want to make some remarks about the accuracy of the position of capture. How sure is the fisher of the position of capture? Did the fisher write down any details?

Or describe fishing area
If you have a local area fishing map that refers to the different areas by name or in a number/letter format fill in the name or the grid reference for the area the fish was captured.

Fish size information

Fork length (cms)
Measure the fish from the upper jaw to the fork in its tail and record the length in centimetres here.

Length measurement reliability
How sure are you of the length measurement information? The length measurement information will normally be 100 per cent accurate if the observer was onboard when the fish with the tag was landed. However, if you have been given a tag that was recovered during a previous fishing trip you may want to make some remarks about the accuracy of the position of capture. How did the fisher get the length measurement? Are you sure the fisher did it correctly?

Fish weight (kgs)
Measure the weight of the fish and record the weight to the nearest kilogram.

Fish weight measurement reliability

How sure are you of the weight measurement information? If there was a weighing scale available and the weight was taken by the observer the weight measurement will normally be very accurate. However, if you have been given a tag that was recovered during a previous fishing trip you may want to make some remarks about the accuracy of the weight of the fish. How did the fisher get the weight measurement? Did the fisher have a proper weighing scale?

Fish processed states when weighed

Was the fish processed (cut up) in any way before it was weighed? Use the weight codes available on the back of the LL-4 to describe how the fish had been handled or changed before it was weighed.

Vessel name

Fill in the name of the vessel that the recovered tuna was captured by. Make sure you write out the name fully and include any numbers that are part of the name.

Gear type

Fill in the type of vessel that captured the fish with the tag. Note if it was a longliner, a purse seiner, a pole-and-line vessel, a handline vessel, or another type of vessel.

Flag

Fill in the flag of the vessel that captured the fish with the tag. Fill in the nationality as recorded on the country registration certificate or vessel license.

Fishing method

It is possible that fishing method that was used will be different than the vessel's main gear. Typically this happens on smaller vessels in Indonesia and the Philippines where for instance the main gear may be handlining, but the vessel may have been trolling the day it caught the tagged tuna. Normally the fishing method will be the same as the gear type so you can just dash this data field.

School type

This question is more relevant for observers onboard purse-seine or longline vessels. Observers on longline vessels can just put a dash in this field if necessary.

If the fish that was tagged was caught when swimming with a school of tuna describe the type of school if possible. Use the school association codes that you have been trained to use on purse-seine forms or pole-and-line forms.
1. Unassociated; 2. Feeding on baitfish; 3. Drifting log, debris or dead animal; 4. Drifting raft, FAD or payao; 5. Anchored raft, FAD or payao; 6. Live whale; 7. Live whale shark; 8. Other (please specify); 9. No tuna associated.

FAD no.

This question is more relevant for observers onboard purse-seine or longline vessels. Observers on longline vessels can just put a dash in this field if necessary.

If the fish that was tagged was captured on a fish aggregating device note the number of the FAD on the form. Also note where this numbering system comes from. For instance it might be the boat's own FAD numbering system or the vessel company's naming system.

Process when found

Note the processed state the tuna was in when it was first found. Usually, if the tuna was found by the fishing vessel it will be discovered whole. If the tag is found on a tuna later on (in the cannery for instance) it may have already been processed, i.e. gilled and gutted.

Where found

Note where the tag was first found; for instance, on the fishing vessel, the reefer, the cannery, the cold storage, the fish market, etc.

Finder information

Finder name

Name the person who found the tag. Write in the full name — first name first and surname last.

Finder address

Write out the full name of the finder. This address will be used to send the reward. Remember to include any post code if relevant.

Country of recovery

Write out the name of the country that the tag was recovered in. If the tag was recovered at sea mark down the name of the country of the return port.

Recapture information received at

Normally, this data field will be filled in by the person you submit the tag to. Observers can leave this data form blank.

Form completed by

If you have completed this form fill in your name here.

Tag returned in envelope?

Normally this data field will be filled in by the person you submit the tag to. Observers can leave this data form blank.

Reward provided

Normally this data field will be filled in by the person you submit the tag to. Observers can leave this data form blank.

Comments

Use this part of the form to fill in any extra comments you want to make. As with all observer work extra comments are always encouraged and help to verify the information you have filled in on the data form.