

# THE OPERATION OF TUNA LONGLINERS IN PAPUA NEW GUINEA WATERS

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## INTRODUCTION

In Papua New Guinea, tunas are caught by three fishing methods; pole-and-line fishing, purse seining and longlining.

Pole-and-line fishing and purse seining are used for catching the smaller tunas which school on the surface of the water. Longliners catch larger tunas which are found at all depths down to more than 200 m.

## LONGLINERS

Japanese, Taiwanese and Korean fishermen are the main users of deep sea longlining to catch tunas. Their larger fishing boats, up to 400 gross tonnes, travel throughout the Atlantic, Pacific and Indian Oceans looking for these fish. The smaller boats cannot travel so far but Papua New Guinea is close enough to their home ports for them to operate here.

The number of foreign boats licensed to enter Papua New Guinea's 200 mile declared fishing zone is strictly controlled by the Fisheries Division of the Department of Primary Industry. Japanese based tuna fishing vessels paid the Papua New Guinea Government one million kina for licenses covering the ten months up to 31st January, 1979. In 1977, 195 Japanese longliners caught 10 284 t of tuna in the Papua New Guinea declared fishing zone, valued at approximately fifteen million kina.

Purse seiners and longliners are rarely seen by the people of Papua New Guinea. They come from their home ports for a given period and return to land their catch without putting into port here. One such longliner is the 59 gross tonne *Ebisu Maru No. 18*. This boat is owned and operated by a family living in southern Japan. In early 1979, I joined the *Ebisu Maru* for one complete voyage to assess the possibility of Papua New Guinea becoming more actively involved in longline fishing for tuna.

The *Ebisu Maru* aims to make seven fishing voyages, of approximately 50 days each, to the fishing grounds between Micronesia and Irian Jaya/Papua New Guinea each year. During each trip, the 10 man crew hopes to catch about 32 t of fish. This is usually made up of 70% yellowfin tuna, 20% bigeye tuna, 5% marlin and swordfish and about 5% other fish. The tuna, marlin and swordfish are caught especially for the *sashimi* market. *Sashimi* (thinly sliced raw tuna) is a very popular Japanese food. These fish fetch very high prices in Japan.

Many sharks are also caught but most of them are thrown away. Only the fins are kept for sale to the Chinese for soup.

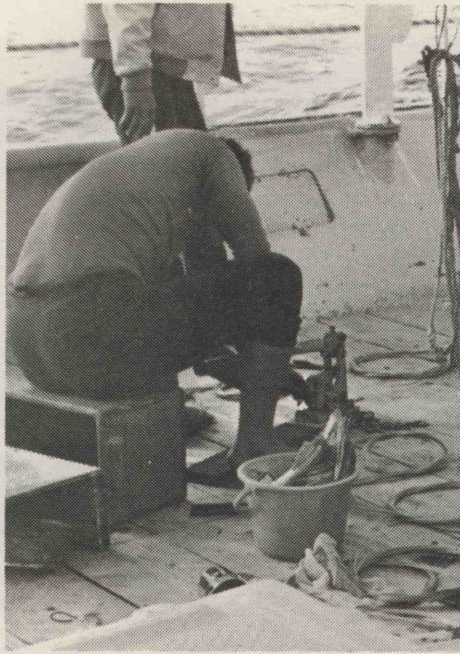
The following photographs show the operation of the *Ebisu Maru No. 18*.



*Ebisu Maru No. 18 - a Japanese tuna longliner. This is the usual size of the smaller longliners operating in Papua New Guinea's declared fishing zone.*



*During the journey from Japan to the fishing grounds (which takes 9-10 days) all the crew are involved in preparing the fishing gear.*



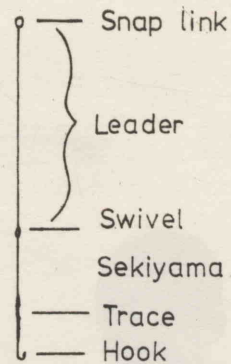
The hooks are attached to wire tracers at the ends of branch lines. In turn, the 20 m branch lines are attached in groups of 10 to the main line using snap links. Each group of 10 branch lines is called a 'basket'.



When the boat reaches the warm waters of Papua New Guinea, the fishing starts. Bait which has been brought from Japan, is sent from the forward holds to the stern.



The man on the right is baiting the hook on the end of a branch line, the man in the centre is holding the snap link at the other end, and the man on the left is holding a complete branch line. The buoys are used to prevent the line from sinking below the desired fishing depth.



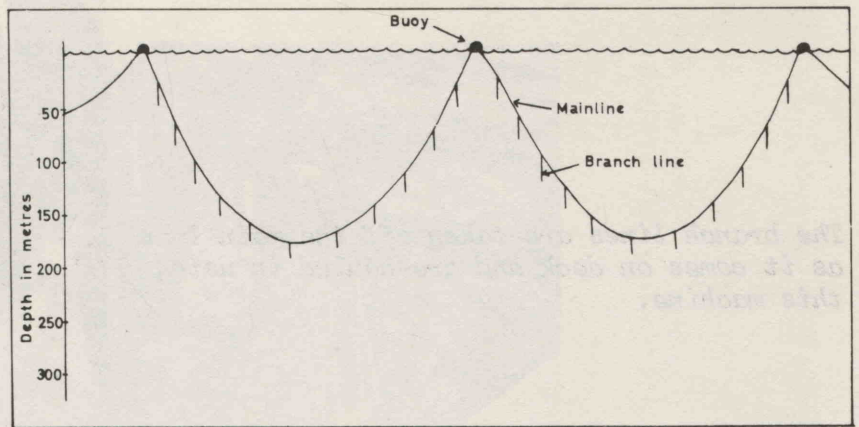
A branch line

The line is shot (payed out) at 7 m/sec while the boat moves forward at about 8.3 knots. A branch line is attached to the mainline every 45 m (6.5 seconds) using the snap link. After every 10 branch lines (basket) a buoy is attached to the main line and thrown overboard.

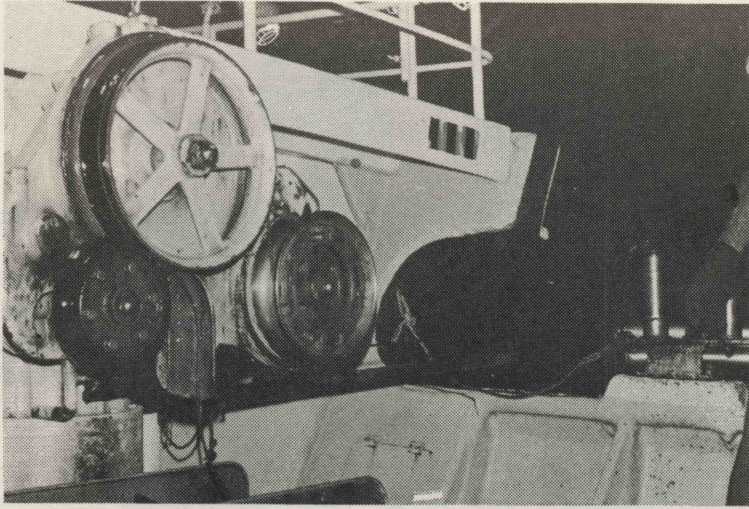


200 baskets are set each day using 108 km of main line. It takes 7 men 4.5 hours to do this and the line covers 50-55 km of ocean. The ends of the main line are marked with radio transmitters.

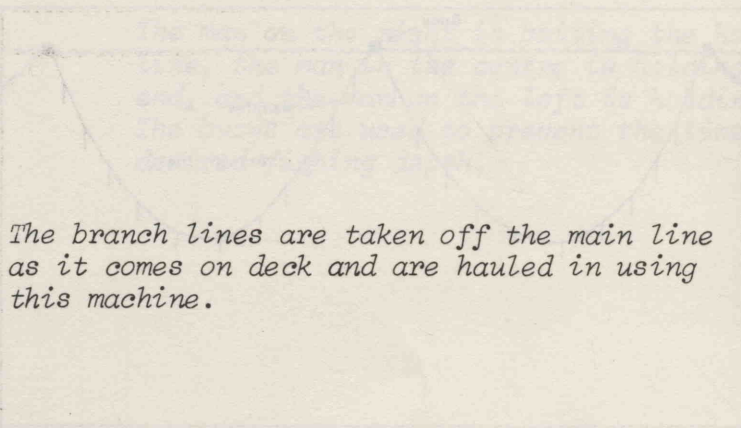
Side view of a longline showing how it lies in the water when set



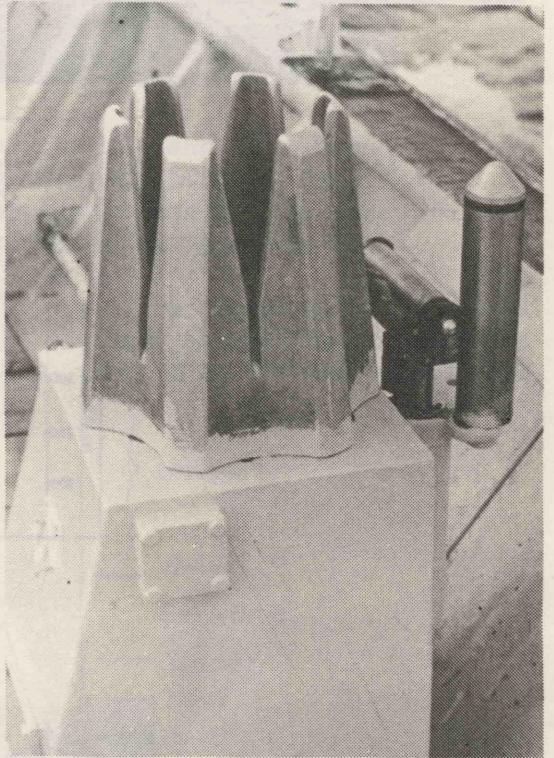
After being left to 'soak' for 4.5 hours, the end of the main line which was put out last is picked up and the hauling operation begins.



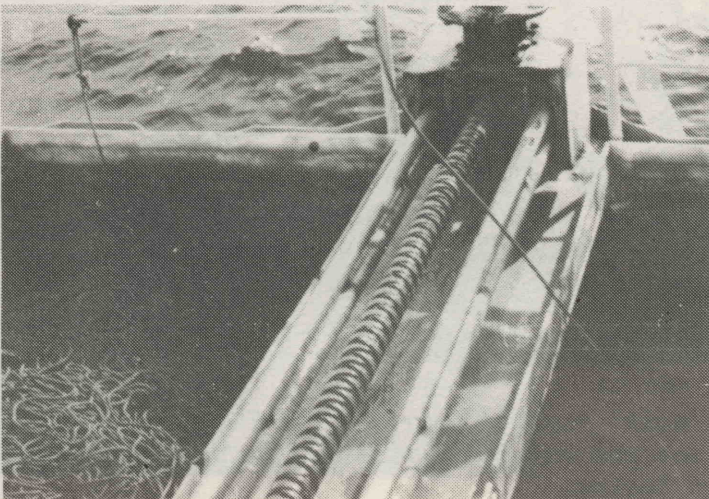
*This is the winch over which the main line is hauled. This operation takes between 10 and 11 hours, depending on the size of the catch. The average catch size is 1.5 t but it can be as high as 5 or 6 t.*



*The branch lines are taken off the main line as it comes on deck and are hauled in using this machine.*



*The main line is carried to the stern where it is stored in these bins.*



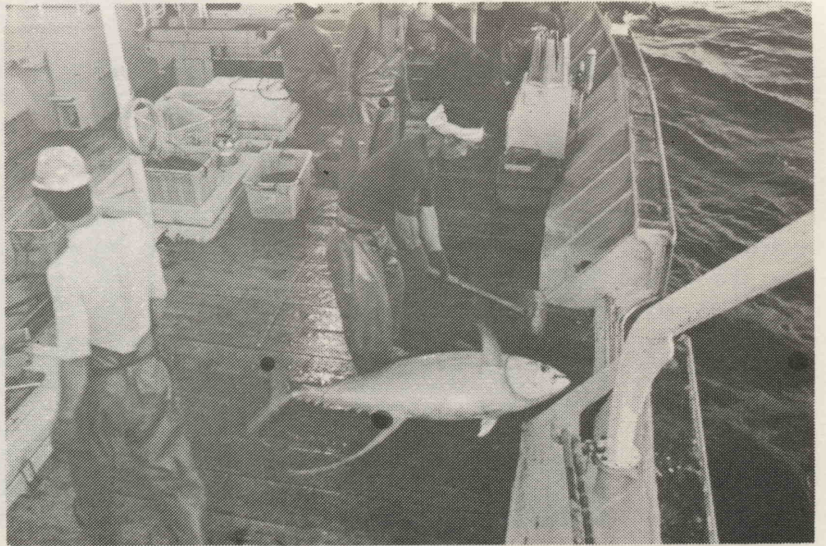


*The fishing master controls the hauling operation from the bridge. He rarely enters the work deck.*



*Approximately 5% of the hooks set catch a fish. The fish are gaffed on board .....*

..... killed and  
immediately .....



..... gilled and gutted. The branch lines and  
hooks are transferred to the stern for storage  
until the next time the line is set. The fish-  
ing operation occurs about 25 times each voyage.

One in ten of the fish hauled  
on board has been bitten by  
sharks.







About three tonnes of the catch for the whole voyage is put on flake ice. The rest of the fish are kept in sea-water chilled to between  $-0.5$  and  $-0.7^{\circ}\text{C}$ .



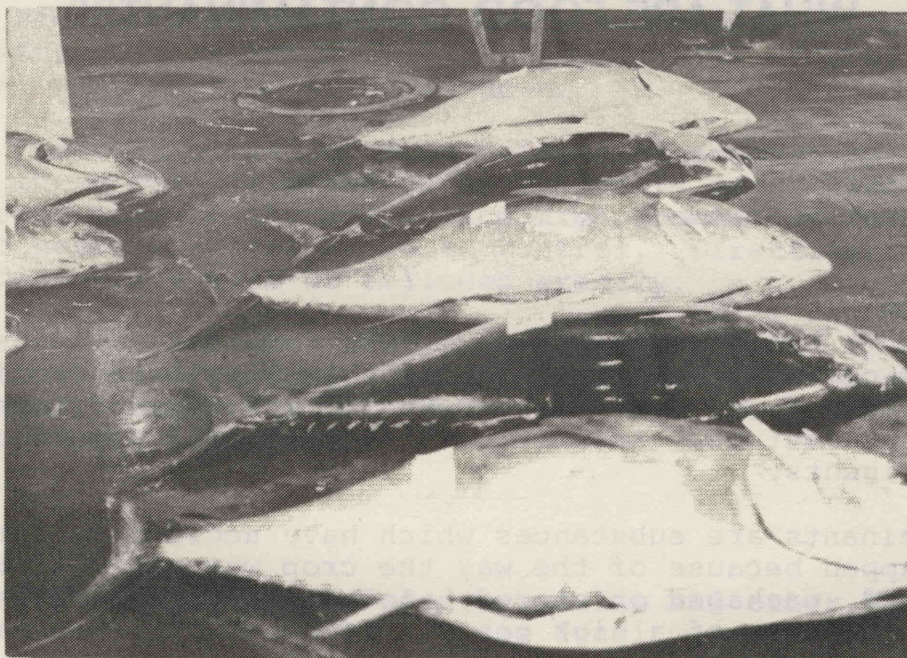
As the boat starts its journey back to Japan, it is thoroughly cleaned.



*The boat arrives at a sashimi market in Japan and the catch is unloaded. This takes 12 men about 4 hours.*



*The fish are laid out on the market floor for the buyers to inspect.*



*The fish are sold by auction. Big eye tuna fetch as much as K8-9/kg and yellowfin tuna K3-4/kg when they are bought here for sashimi.*



*Back in port after 43 days at sea. The following week is spent preparing the boat for the next voyage. An average of seven voyages are made each year.*