

AUSTRALIAN BOAT BUILDERS MOVE TO ERITREA, AFRICA

SPC Masterfisherman Steve Beverly was retained as a consultant during November 1999 to assist an Australian company, Seachrome Marine International, in conducting a training workshop for 54 Eritrean nationals on Halib Island in the Red Sea, Eritrea (northeastern Africa bordered by Sudan, Ethiopia, and Djibouti).

The workshop concentrated on longline fishing gear fabrication and in the proper techniques of setting and hauling monofilament longline fishing gear using American-made (Lindgren-Pitman) longline equipment and Australian-designed (built in Eritrea) fibreglass fishing vessels.

The Masterfisherman also advised Sea Chrome Marine International on vessel parameters, gear design, and fisheries development strategies for a Red Sea fishery using monofilament longline equipment. The workshop took place on a desert island, where a war-battered shipyard has been transformed into a productive facility, and a newly independent country has started to develop a new fishery.

Sea Chrome Marine International is a well-known company in the region and has a history of being one of the largest producers of top quality fibreglass fishing vessels in Australia.

In the past, they produced up to 50 per cent of the commercial vessels operating in the West Australian rock lobster fishery. During the early 1990s they branched out and began producing 18 and 20 m longline vessels for Pacific Island countries and territories. Several Sea

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Chrome longline boats have operated successfully in French Polynesia since 1993.

About two years ago the management at Sea Chrome Marine, Norm Wilhelm and Terry Dovey, were approached by representatives of the Government of Eritrea, who were interested in purchasing several Australian-made fibreglass fishing boats in two size ranges: 11 metres and 18 metres.

They were also looking for a design that would be suitable for the Eritrean navy as an armed patrol boat, primarily to be used for fisheries and coastal surveillance work. The negotiations took a bright turn for Sea Chrome when the Eritrean Government offered to buy the entire company. The package that was agreed upon included moving Sea Chrome's entire

physical plant to Halib Island in Assab Bay, Eritrea and in hiring, on a contract basis, a large proportion of Sea Chrome's Australian workforce for a period of six years.

The venue for Sea Chrome's new home is Harena Boatyard, located on Halib Island. Halib Island is located in an archipelago in Assab Bay and populated by Afar Nomads, camels, goats, gazelles, and crows (besides Australian boat builders and Eritrean workers and fishermen).

It is 70 km away from Assab, the nearest town, via a causeway and an unsealed road, or about an hour away by boat. During the 1980s, when Eritrea was still controlled by Ethiopia, the Government of Ethiopia had a shipyard built on the island that was built by the Koreans to international standards but was never fully utilised.

In the early 1990s Eritrea won independence from Ethiopia after a thirty-year war. The shipyard on Halib Island suffered from neglect and after that, was used only as a barracks for soldiers.

When the Australians arrived almost two years ago there were two or three thousand armed





Five new Sea Chrome Marine 11 metre longline boats from the Harena Boat yard on Halib Island, Eritrea. All are equipped with 24" x 27" Lindgren-Pitman monofilament longline reels. They are powered by Volvo-Penta 105 HP sterndrives.

soldiers living at the shipyard and most of the infrastructure was not working. After the soldiers moved out, the Australians brought in contractors to refit all of the buildings and to make repairs to the island's infrastructure.

In less than two years' time, the shipyard, which is operated as a joint venture between Sea Chrome and the Government of Eritrea, has been fully restored and has produced several vessels including five 11 m and one 18 m longline boats. One 11 m version is rigged for trawling. They have also completed several 10 m and 17 m patrol boats, some of which have been exported to neighbouring African countries.

The shipyard rivals that in any developed country. There is a boathouse capable of holding several vessels at a time in various stages of construction up to 18 m and larger. The boathouse holds some of the moulds for the vessels as well as all fibre-

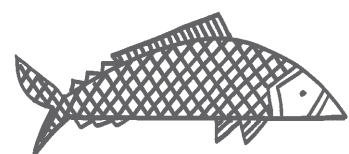
glassing equipment including several resin guns used for laying up hulls and superstructures. The shipyard has onsite: a travel lift for launching new boats or for slipping boats for repairs; a machine shop where all engineering work is done; a wood-working shop where wood components are fabricated; an electrical shop that supervises wiring and installation of all lighting and electronics; and, a metal works shop where all fitting and welding is done.

A storage workroom used for fabricating fishing gear, also serves as sleeping quarters for the fifty-four fishermen trainees during the training workshop. There is a larger barracks on the boatyard compound that houses the hundred or so Eritrean workers who are benefiting from the technological training being offered by the Australians. Each shop in the shipyard has one or more Australian supervisors, who not only do the fibre-glassing and welding and installations, etc, but who also

train several Eritrean counterparts at the same time. Eventually, the shipyard will be 100 per cent Eritrean owned and operated.

The Australians live in their own compound at Harena Boatyard that consists of several pre-fabricated buildings. Each man has his own air conditioned room with modern amenities. In the centre of the compound is a kitchen and dining room capable of feeding up to twenty-five men at a time. Sea Chrome has two cooks on hand, every day except Sunday, who prepare three meals a day for the Australian crew.

The Australian crew get rotated back to Fremantle, Western Australia for rest and recuperation on a regular basis.





The boathouse at Harena boatyard showing several vessels in the works: an 11 m fishing boat and a 17 m patrol boat in the foreground, and an 18 m longliner behind the 11 m



An 11 m Sea Chrome boat rigged for trawling. This boat caught all the bait used during the longline training course

Prior to the start of the training project, Pete Taylor, Sea Chrome's fisheries technician, had started instructing the captains and crews of the new 11 m and 18 m boats in how to make

up longline fishing gear for monofilament systems. He had also conducted several trips on one of the 11 m boats and on a larger vessel that had been fitted with a Lindgren-Pitman

Super Spool and an LS-4 Line setter. This vessel, F/V *Hanish*, was a former Egyptian trawler that had been seized by the Eritrean Government for fishing illegally in Eritrean waters.

Reportedly, there were over fifty similar vessels now owned by the Government of Eritrea. Pete had some success with the two vessels but was experiencing some difficulties with the equipment on *Hanish* and with the gear configuration.

During the first week, the training project on Halib Island concentrated on gear fabrication. Pete had already trained the fishermen in how to splice and how to make up branchlines. Work on fishing gear was carried on with a few modifications and eventually completed for five 11 m boats and one 18 m boat. Radio buoys for three 18 m boats and for the *Hanish* were rigged as well.

The 11 m boats are not equipped with RDFs or radio buoys. Two styles of branchlines were made up, 3 m and 10 m. The 3 m branchlines were for bottom longlining and the 10 m branchlines were made for pelagic longlining. They were all made from 2.0 mm monofilament

with a half meter of stainless steel wire trace. Two types of hooks were used, a 3.6 stainless steel Japanese tuna hook, and a 14/0 tuna circle hook. All floatlines were made from 6.4 mm tarred mainline and were 10 m long.

By the end of the week most of the trainees had mastered the basics of making up longline gear: splicing tarred line, coiling the floatlines, rigging floats, swaging monofilament and stainless steel wire branchlines, and coiling the branchlines into bins. A few had learned how to properly rig a radio buoy with a net around the float collar and a bridle. During this week, sea trials for the first 18 m boat, *F/V Vasco*, were conducted.

During the following week of the workshop the captains and crews of the 11 m boats were trained in proper setting and hauling techniques. During these trials advice was given on several needed modifications to the boats, to make fishing safer,

easier and more efficient. On the first trip, each boat set gear without bait. After the captains and crew proved capable of operating the boats and gear, real sets were made using trawl caught fish as bait. All sets done from the 11 m boats were bottom longline sets in water averaging 30 m. The fish caught on these sets were mostly sharks and rays but a few saleable species were also caught (jacks, snappers, and groupers and one they call catfish).

The L-P gear worked very efficiently as bottom longline gear. Setting and hauling were almost identical to pelagic fishing. The main difference was that the baskets were larger (50 to 60 hooks), the branchlines were shorter (3 m), and the floatlines were longer (50 m with anchors on the two end floatlines).

Since there were no line setters on the 11m boats, the line was towed during setting. The sets were all done fairly close to Halib Island. Blind sets were



An 11 m longliner, showing placement of the Lindgren-Pitman 24" x 27" longline reel, and the control station. The insulated fish box is just forward of the reel and a branchline bin is secured in chocks just aft of the reel.



F/V *Vasco*, the first of many 18 m longliners from Harena Boatyard. *Vasco* is equipped with a Lindgren-Pitman 38" x 48" Super Spool and an LS-4 Line Setter. The boat is powered by a Caterpillar 3406 diesel.

done over sandy bottom very near to the channel while the baited sets were done farther away just to the west of Fatuma Island (another of the islands in the archipelago in Assab Bay).

Similar training was carried out on the 18 m longliner, F/V *Vasco*. A blind set was made using 15 hook baskets. After a few initial problems were worked out, *Vasco* was sent out

to fish in the middle of the channel (the straits of Bab El Mandeb) between Eritrea and Yemen, where the water deepens to about 200 m. The set was done as a typical tuna set.



Masterfisherman Steve Beverly instructs the Eritrean crew in how to use a line setter on board F/V *Vasco*.

Four hundred and fifty hooks in 30 baskets of 15 hooks were set using Indian mackerel (*Rastrelliger* sp) as bait. The floatlines were 10 m and the branchlines were 10 m. All hooks were 3.6 Japanese tuna hooks. The sagging rate of the line was eye-balled at 0.7, using the method of grabbing the mainline as it exists the line setter and counting to eight. This made the set relatively deep.

The line was set in the morning and hauled in the afternoon. The catch was disappointing: several *Carcharhinus* sp sharks and one pink snapper (*Pristipomoides typus*).

Later, a night set was made from *Vasco* using a bottom longline configuration in 30 to 50 m water in an area just to the northeast of Assab. Four hundred hooks were set in 50 hook baskets. The floatlines were 50 m while the branchlines were 3 m in length ending in a 14/0 tuna circle hook. The bait was

mixed trawl fish caught by one of the 11 m boats that had been rigged for trawling.

The line was set beginning at 2030 and hauled at 2330. The line setter was used but only at the slowest speed, so that the line would not tend to tangle on the bottom. As it turned out, however, the line did snag and part. It had to be recovered by travelling to the radio buoy at the far end and hauling from there. Hauling was completed at 0630.

The catch consisted of about 200 kg of snappers and groupers and one or two coral trout. The main species were *Lutjanus bohar*, followed by *Epinephelus chlorostiga* and *E. microdon*. A few *Plectropomus* sp were also caught.

Towards the end of the workshop a brief trip was made on *Hanish* (the Egyptian trawler) for a bottom longline set in order to give an evaluation of

the boat. *Hanish* was equipped with an L-P Super Spool and a line setter plus all of the ancillary gear.

Three 50 hook baskets were set using the same configuration as the bottom longline set from the *Vasco*. The difference was that the line setter was used only as a line guide. The hourglass rollers on the line setter were used but the drive wheels were not used.

In other words, the line was towed so that it would lie straight on the bottom with less chance of fouling on the bottom. Hauling started at 0915 and was completed by 1110. The catch was 15 catfish, one jack, and five rays. Compared with the set made from *Vasco* using the line setter, this line came up more smoothly, although sea conditions were better.

When the workshop was completed the Masterfisherman was given a tour of the fisheries



A 17 m patrol boat for the Eritrean Navy

complex in Assab. Two years ago the government of Japan built a fishing infrastructure for Eritrea that consists of a wharf with breakwater, a desalinisation plant, a flake ice maker, a block ice maker, chill rooms, processing rooms, two blast freezers, and a holding freezer.

The Ministry of Fisheries was using the facility to process fish caught by the local fleet, which consisted of mostly traditional Arabian style dhows (with Yemenese crew) using gill nets.

The Ministry of Fisheries purchases the fish (snappers, groupers, and jacks), processes

them into frozen wrapped filets (pin bone in) and then stock-piles them in the holding freezer. It appeared that they had several tonnes of processed fish in store, but had not yet developed a steady market for their product.

The fish processing factory was under tight sanitary controls. Everyone entering had on gum boots and sanitary outerwear, and stepped into a foot wash before entering the cutting room. The workers were all properly attired, including hair-nets. The cartons were all labelled with species, count, weight and date. The factory

appeared to be ready for HACCP certification. The Ministry of Fisheries is hoping to export fish to EU markets.

The boats being built at Harena Boatyard will soon be fishing into this complex. One possibility for the future, considering the composition and relative abundance of the bottom fish catches, is the live reef fish trade in Asia. Nearby Dubai has regular airlinks to Singapore and Hong Kong. Even if the fishery in the Red Sea does not match other places, however, Eritrea is likely to become a major producer of boats for Africa and the Middle East.

