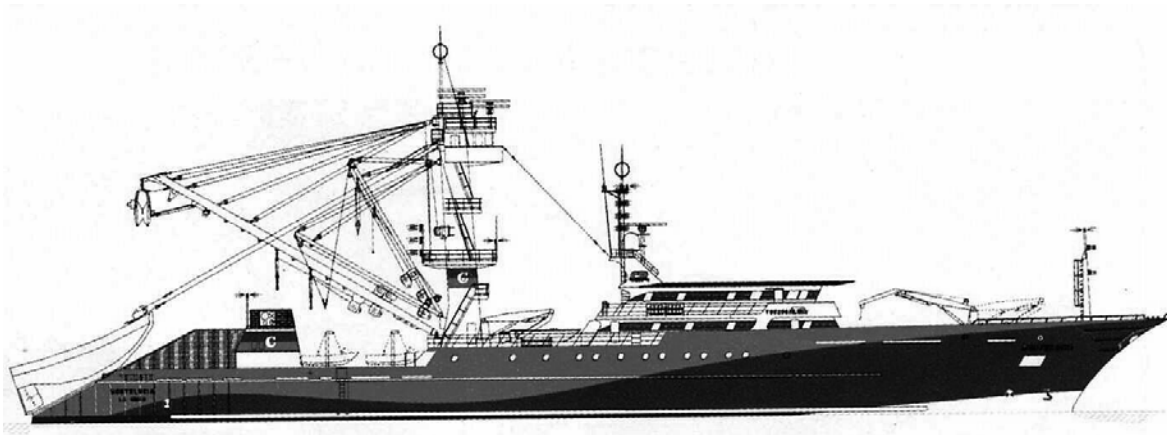




SCTB15 Working Paper

## FTWG-11

### State of the Art Longliner 2002



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## **State of the art longliner 2002**

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### **Design of F/V Yellowfin reflects change in fishery**

The design of F/V Yellowfin (New Caledonia) reflects a dramatic change in the longline fishery in the western and central Pacific Ocean since the early 1990s, when domestic longline fisheries started developing. The main target species in the domestic longline fishery have been bigeye and yellowfin tuna. Vessels targeting albacore tuna have mostly been DWFN freezer vessels fishing for the canneries in American Samoa and Fiji. In the early 1990s albacore was a by-product species of the bigeye/yellowfin catchers. In the last decade, however, the albacore catches in the WCPO have more than doubled, going from less than 40,000 tonnes (1991) annually to more than 80,000 tonnes (2001). During the same time the catch of all longline caught tunas increased only about 1.6 times, going from 147,000 tonnes to 240,000 tonnes. In French Polynesia, for example, the percentage of albacore in the longline catch has gone from 27% to 55% since 1991. The percentage of bigeye in the longline catch in French Polynesia has gone from 12% to 10% during this same decade, while the percentage of yellowfin in the catch has gone from 32% to 12%. In Fiji, another country where longline fishing has been well developed, the catch of albacore has gone from 36% to 66% while the catch of bigeye has gone from 21% to 5% and yellowfin from 18% to 17%.

The numbers may not seem significant without understanding the market. Domestic longline operators target the lucrative sashimi markets in Japan, Hawaii, and the US mainland. Albacore does not have the same value in this market as bigeye and yellowfin tuna. Targeting parameters for albacore and bigeye tuna, however, are basically the same - deep day sets using sanma, sardines, pilchards, or squid. The seasons and geography are slightly different for the two species, but basically, it is not possible to avoid catching large numbers of albacore when targeting bigeye. Some fresh albacore can be exported to Japan but usually only seasonally in the months of July and August. Markets in the US for fresh albacore are not strong, especially when airfreight is factored into the equation. Airfreight is the single most important component of marketing costs in a fresh tuna export operation. Often the price of fresh albacore is not high enough to justify export by air. The only options are to market fresh fish locally or to freeze. Local markets are often glutted with fresh albacore resulting in depressed prices, and whole fish, frozen for export to canneries, are often rejected because of improper handling.

### **How Pacific Island fisheries are coping with the increased albacore catch**

In French Polynesia some boats are quarter-loining albacore and freezing on-board. The vessels involved in this fishery are 25 m steel longliners equipped with monofilament systems and HACCP certified processing rooms, blast freezers, and large freezer holds. They are capable of staying at sea for one to two months and catching and processing 50 tonnes or more of quarter loins. The yield on quarter-loined albacore is about 50% so the market price for quarter loins has to be more than twice the price of whole frozen cannery fish for this fishery to be feasible. When the price of cannery fish rises some boats in the fleet switch to freezing whole fish. The vessels in this fishery are relatively expensive at \$1.5 million and the processing requires a highly skilled

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workforce. For these reasons this type of processing has not been developed outside French Polynesia.

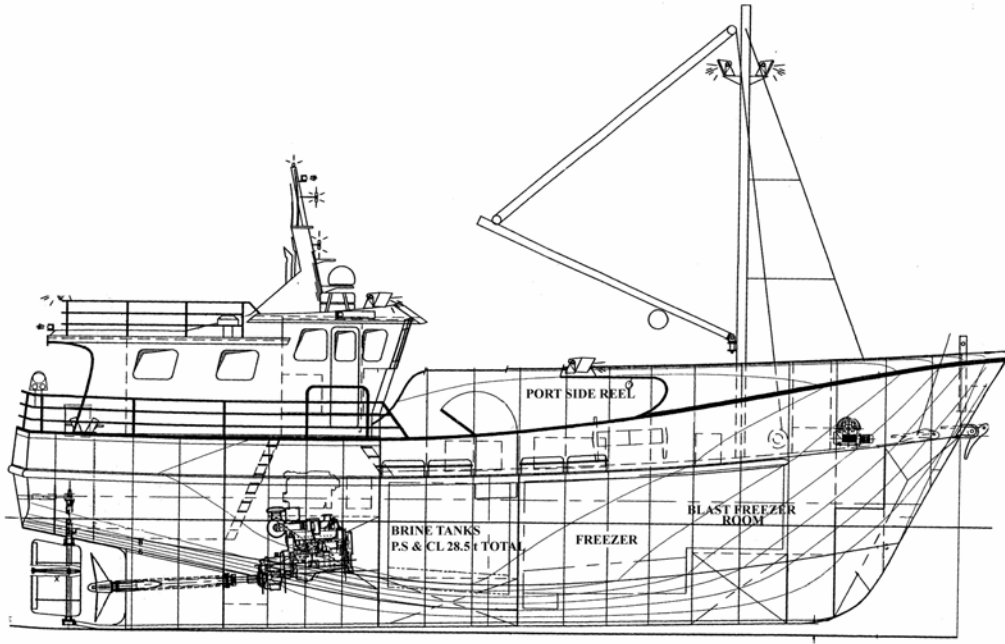
In Fiji some vessels are freezing whole fish on board while icing fresh sashimi grade fish. Most boats in the fleet, however, are ice boats or RSW boats without freezing capabilities so fresh chilled fish are frozen on shore and then loaded into freezer containers for shipment to canneries. The longline fleet based in Noumea, New Caledonia handles albacore in a similar manner, fish are frozen on shore and stockpiled for later shipment to canneries. In both of these situations a separate company is used for freezing and shipping fish, adding to production costs and reducing profit margins for the vessels.

Many other fisheries, however, are not coping as well as they could. There is often dumping on the local market and frozen fish are either not handled properly or are handled so much that profit margins are low because of increased costs. For example, in Samoa there is often a high rejection rate for cannery albacore that are landed fresh and frozen on shore. Vessels are small so freezing at sea is not an option. Some boats land fish at ambient temperature as they do not carry ice. Histamine contamination has been an important cause of rejection. In New Caledonia one new company re-ices fish on shore and then trucks whole chilled fish from Koumac in the north to Noumea in the south (five hours by road) to be frozen at a freezer works for later shipment to canneries. Each handling costs money and provides opportunity for damage to the product. Profit margins are not as high as they could be. This company has a fleet of ten ice boats which often land 200 to 300 pieces of albacore after a relatively short trip of 4 to 8 days fishing. There is a processing plant in Koumac but it has no freezer works.

### **One New Caledonia company has found a solution**

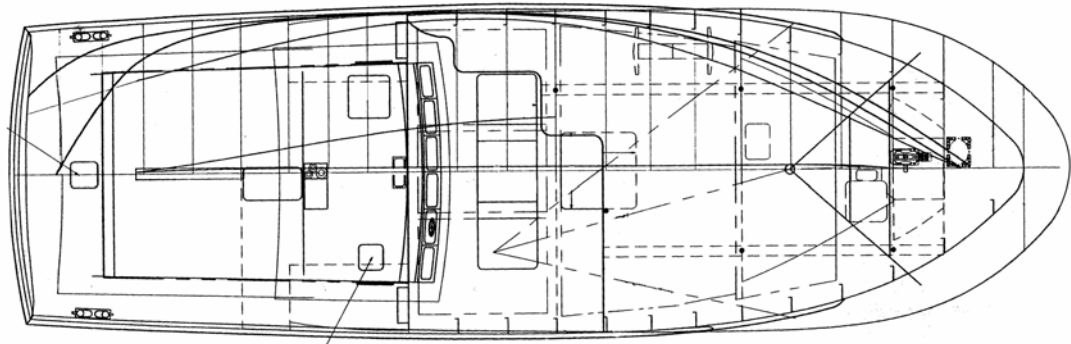
The company, which started operation in late 2001, is called Albacore and their first vessel is called Yellowfin. Albacore's solution was to build a medium-scale multi-purpose longliner that can freeze whole fish and chill sashimi grade fish. F/V Yellowfin is a 20 m x 6.4 m x 2.2 m steel longliner equipped with an 80 km Costa monofilament longline system. The fish holds consist of three ten tonne RSW holds, one 15 tonne freezer hold, and one 2 tonne blast freezer. Yellowfin makes trips of up to two weeks duration, setting and hauling 2500 hooks eight to ten times during each trip. All sashimi grade bigeye and yellowfin tuna are gilled and gutted and then stored in the RSW holds. All albacore and some by-product species are first blast frozen down to  $-40^{\circ}$  C and then stored in the main freezer hold at  $-30^{\circ}$  C. When the boat arrives in port the fresh fish are processed and air freighted to Japan or Los Angeles while the frozen albacore are loaded directly into freezer containers for shipment to Fiji or American Samoa. Handling is minimized so damage and costs are kept to a minimum.

F/V Yellowfin was built in Tasmania, Australia by Allan Barnett Fishing Company. It is surveyed to Bureau Veritas standards (necessary for a boat operating in a French territory) but could also qualify for USL, Lloyds, or ABS surveys. The hull is steel and the wheelhouse is aluminium. The main engine is a 3406 Caterpillar and there are two gen-sets producing 70 kVa. Fuel capacity is 14,000 L, water capacity is 5000 L, and crew compliment is eight. The boat was delivered turn-key with all electronics and fishing gear. The cost was approximately USD 850,000.00.

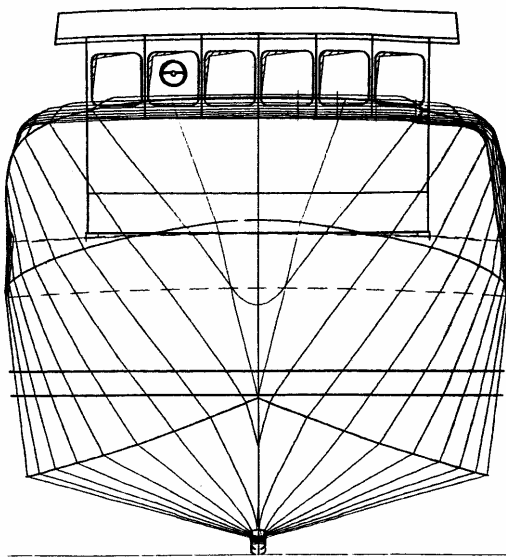


PROFILE

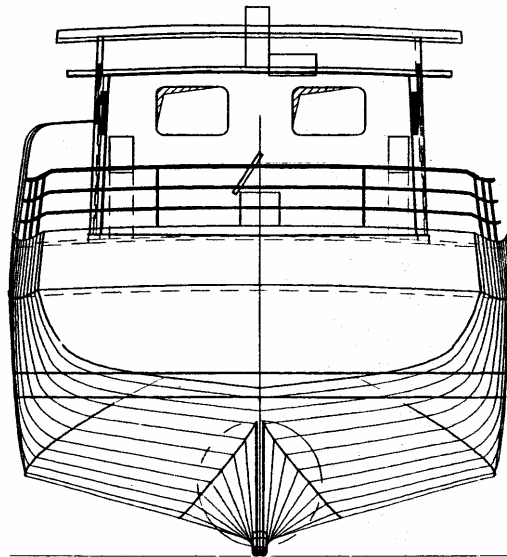
┌ BRINE SPACE ─ ─ FREEZER & BAIT ROOM ─ ─ BLAST FR'ZR ─



PLAN VIEW



Front Elevation



Stern Elevation