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REPORT ON FISHING BOAT REQUIREMENTS

by

J.F. Fyson

SPIFDA Consultant

Mr J. Fyson was appointed as a sub-project Consultant on fishing boat development and joined the Project on 3 December 1970. The period 3 December to 27 February 1971 was spent as Acting Project Manager during the absence of the Project Manager on leave. Mr Fyson's first quarterly report for the period March - May 1971 is being processed by FAO and a second report is now in the hands of the Project Manager. A summary of progress to date and proposals for future programme of work is given below.

Progress in the territories visited

1 Fiji

At the request of the Government of Fiji, a design has been prepared, in collaboration with the Fishing Vessel and Engineering Branch of FAO, of a 75 foot waterline (81 foot 6 inches length over all) fisheries research vessel. This boat is to be built in steel by the Marine Department shipyard and is intended to carry out investigating and training programmes in the live bait tuna fishery. In addition, the vessel will be equipped for stern trawling with provision for possible purse seine operation in the future, should this method prove viable. A small laboratory is included for limited oceanographic experiment.

Time has also been spent on advice on layout and supervision of construction of the 30 foot ferro-cement fishing boats being built by fishing cooperatives with assistance from the Fisheries Division. One

2 Western Samoa

boat has been launched and a second is now under construction.

2 Western Samoa

Assistance has been provided with layout and construction details of a 38-foot ferro-cement fishing boat being built for the Fisheries Division. An outline proposal has been prepared for a 28 foot open fishing boat in plywood.

3 American Samoa

Advice has been given on specifications and layout of a 50 foot steel research vessel for the Government.

Preliminary investigations have been made into the setting up of a building programme for small outboard powered fishing boats of 20 - 25 feet for use on Manua Island and the northern shore of Tutuila.

4 French Polynesia

Investigation was made into the "bonitier" operation in Tahiti. Observation showed that horsepowers of 180 - 300 were being used to achieve speeds of up to 18 knots. It is felt that a hull specifically designed for this semi-displacement speed range could be built to achieve this speed with considerable saving in horsepower.

5 Tonga

During a visit as a member of the UNDP/FAO Tuna Fishing PAG Mission, investigations were made of the local boat-building facilities and the availability of materials. On the basis of these findings cost estimates were prepared for construction locally of ferro-cement fishing boats of 35 and 50 feet length over all.

#### Appraisal of fishing boat requirements in the region

Three distinct types of boat appear to be required and further development work should aim at the adoption or preparation of suitable designs of boat to meet these requirements, together with the planning of building programmes to build boats in territories equipped to do so.

### Type 1

A shallow V or flat bottomed boat in the 220 - 25 foot range for the individual fisherman or small village group. This type of boat should be suitable for use inside the lagoons and at the same time be sufficiently seaworthy to work outside the reef in settled weather. Fishing methods to be used by such a boat could include hand lining, trolling and gill netting. Powering would normally be by outboard motor. Design and construction method to aim at a single economical building plan suitable for local builders and with wood or plywood as the construction material.

### Type 2

General purpose displacement hulls in two sizes, the first of 35 and the second of around 50 feet in length.

The 35 foot vessel with wheelhouse forward could be used for a variety of fishing methods such as multiple trolling, hand and reel line fishing and possibly for small longline operations in suitable areas. Where baitfish are available and live bait pole and line operations are commercially feasible such a boat could be arranged to operate as a bait catcher using a lift net with light attraction or a small lampara seine as catching methods.

The use of this size of vessel for the actual poling of surface tuna using live bait would only be feasible where schools of surface tuna are readily available very close to the port of operation. Where this method is to be used on a longer than daily trip basis a larger 50 foot vessel would be appropriate.

Displacement vessels of this type could be built in ferro-cement, wood or fibre glass reinforced plastics (FRP).

### Type 3

There is also in the region a requirement for a boat in the 30 - 35 foot range to operate on a daily fishing basis with a rather higher speed capability and smaller load capacity than the displacement hulls of type 2. Speeds required from such a boat would be in the 12 - 18 knot range and hull design would need to be carefully studied to provide a seaworthy and easily driven hull in this speed range. This type of boat would be intended for short range fishing

fishing of the surface schooling tuna species found in the region, either by the pearl shell lure technique, by small scale pole and line fishing using live bait or by multiple trolling.

The increased speed would be required for covering greater distances in the search for tuna schools together with the capability to catch up with fast moving schools when bird concentrations indicate their presence at a distance. An additional advantage in certain local conditions is the ability to return quickly to home ports either to catch a market or for cold storage of freshly caught fish.

#### Future work programme

Prepare woodwork and layout detail drawings promised for the outfitting of the Western Samoan ferro cement boat at present under construction.

Visit the Trust Territories to advise on the setting up of a ferro-cement boat building programme in the area.

Prepare a design for a 35 foot ferro-cement fishing boat as an extension of the ferro-cement building programme in Fiji. Such a design to have engine and house forward and clear working deck aft and be capable of arrangement for multiple trolling, hand lining, small longline operations or the catching of bait fish. Such a boat could well have application as a general purpose vessel in other parts of the region.

In conjunction with this design continue to provide supervision of the ferro-cement building programme in Fiji.

Make an outline drawing and costing of a 30 - 35 foot boat to operate in the 12 - 18 knot speed range as described in type 3.

Advise on a work programme for local construction of open boats of type 1 in American Samoa and other interested territories.

Additional advice to be provided to the territories on specific boat problems which may arise concerning the purchase and operation of fishing boats in the region.

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