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SOUTH PACIFIC ISLANDS FISHERIES DEVELOPMENT AGENCY

UNDP(SF)/FAO/SPC

THIRD CONSULTATIVE COMMITTEE MEETING

Noumea, New Caledonia

7 - 9 August 1972

REVIEW OF BOAT-BUILDING PROGRAMME

November 1971 to July 1972

by

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WORK COMPLETED

1. 38 foot ferro-cement boat for Western Samoa

After a visit to Western Samoa in November a revised layout and general arrangement drawing for this boat was prepared and approved by the Fisheries Officer. On the basis of this arrangement, construction and superstructure drawings were prepared giving woodwork and joinery details. Further detail sketches were also prepared for such items as windows, vents, mast, rigging and launching cradle etc.

2. 28 foot plywood boat for Western Samoa

Design and construction drawings were prepared and an equipment specification made out for this vessel which was built in Suva. Drawings were made as follows:

Profile and deck plan

Lines plan and offsets

Construction profile and plan

Construction sections

Trolling boom fittings

3. 27 foot fisheries patrol boats for Fiji

At the request of the principal Fisheries Officer an arrangement drawing was prepared for two versions (long and short range) of a 27 foot fisheries patrol vessel. These vessels are being built in New Zealand.

4. 17 foot 6 inch flat-bottomed wooden boat for the inshore fishermen of Fiji

Two drawings based on an FAO design were made showing construction details of this boat to enable a costing to be made for local construction.

(432/72)

5. Report on the unit fisheries project in Fiji

Assistance was given in the writing of sections on boat building, proposals for vessels and operating costs.

6. Third 30 foot ferro-cement fishing boat for Fiji

Three of these boats have now been built under the self-help scheme run by the Fisheries Division in Fiji. Boats were built using unskilled labour provided by the villages, together with assistance from the Fisheries Division.

During the report period considerable time was spent in supervising the construction of the third of these vessels.

In addition to supervision of the unskilled village labour during the construction, detail drawings were prepared for fittings which had to be made locally as well as the ordering and purchasing of materials, fittings and equipment. Special hull coatings were ordered from New Zealand and this boat, which is now in the final stages of fitting out, is expected to be a considerable improvement on the first two vessels built.

It is unfortunate that the design provided for this vessel is not well suited to the fishing methods which the unit fisheries schemes will be using.

A more suitable layout, together with more detailed planning of the placing and fixing of fittings and equipment (most important consideration in ferro-cement construction) has been prepared in the 35 foot design discussed in the section which follows, "Work in Progress". This boat is intended to replace the 30 foot boats in future unit fishery schemes.

7. Ferro-concrete rafts for mollusc culture

A design has been prepared for a raft of 40 feet by 20 feet built up of two pontoon units 20 feet by 5 feet by 4 feet and three hollow cored beams 12 inches by 6 inches in section and 40 feet in length.

The pontoons are made up of 5 foot by 4 foot by 2 foot sections with a wall thickness of 2 inches which are then assembled and post tensioned with stressing wires. The beams are hollow cored to reduce weight and pre-stressed with stressing wires. After assembly the beams are held firmly in place with cast concrete stirrups incorporating $\frac{3}{8}$ inch and $\frac{1}{2}$ inch reinforcing rods. Bolts cast in the beams are then used to fasten a wooden framework of 4" x 2" timber to form a deck for the suspension of molluscs during the growing stages from spat.

One raft of 37 feet by 20 feet has been constructed for the Fiji Fisheries Division and this raft will carry a maximum deadweight load of 8 tons. Greater carrying capacity could be achieved by increasing the number of pontoon sections, each additional pair of sections increasing the carrying capacity by about 1 ton. A detailed drawing showing constructional features of such a raft will be prepared.

8. Tools and equipment for outfitting a small ferro-cement boatyard

A list of tools and equipment for outfitting a small ferro-cement boatyard has been prepared together with estimated costings of all items.

9. Fittings and equipment for a small ferro-cement boat

A list of all fittings and equipment needed to outfit a small ferro-cement fishing boat with catalogue references and estimated costs has been prepared for the 35 foot boat discussed in the above section, "Work Completed". In a developing country where large stocks of boat and ship chandlery are not normally found, a considerable amount of time can be wasted in the search for and fabrication of individual fittings which can often be purchased more cheaply from other countries with an established industry in the fabrication of such items. With this in mind a bulk order has been prepared to be ordered from the United Kingdom with a firm specialising in such chandlery.

A similar bulk order system could well be used by other territories in the area contemplating the building of boats and a basic list of items required could be prepared on request.

WORK IN PROGRESS

1. 35 foot ferro-cement fishing boat for Fiji

A general arrangement, lines plan and offsets and a construction profile and plan have been prepared for a 35 foot general purpose fishing boat to be used in the Unit Fishery Project schemes in Fiji. Based on a FAO hull, this new arrangement is to provide a boat suitable for the carrying of small dories, multiple trolling and hand and deep reel line fishing. A specification giving details of the construction has also been prepared.

The first of these boats is now being built with the lofting of the lines to full size completed and transferred to a building floor, the stem, keel and stern frame fabricated from pipe and a number of the frames built up from $\frac{3}{8}$ inch and $\frac{1}{4}$ inch reinforcing rod.

The method of setting up the frames has been demonstrated and work is to continue on the fabrication of the remainder of the frames and the fixing of the longitudinal reinforcing rods.

2. Building bays for construction of 35 foot ferro-cement boats, Fiji

To carry on the construction of ferro-cement boats at the Fisheries Division site in Suva, sketches have been prepared, lists of materials made up and advice given on the construction of building bays and covered storage area for materials and timber. One building bay and a storage shed have been set up and a further building bay and workshop for the installation of wood-working machinery will be required as the work progresses.

3. Survey of fishing boat requirements for the Rabi Island Council

A two-day visit was made to the island of Rabi to advise on the future requirements of the island in fishing boat construction. Recommendations for the building of two types of boats for both line fishing for bottom fish and pearl shell lure for skipjack were made. Advice was also given on the construction of a suitable slipway for the repair of fishing vessels when built.

4. South Pacific Commission course of instruction on the repair and maintenance of small fishing boats, Tonga, August 1972.

A plan of lectures and practical lessons for this two-week course has been prepared.

Repair and maintenance of fishing boats and engines to avoid costly delays in port is always a problem in developing countries and consideration could be given to the possibility of using this lecture material for the preparation of an illustrated handbook along the lines of a similar publication entitled "Building a Sawn Frame Fishing Boat" which was written and illustrated for FAO.

5. 35 foot semi-displacement day fishing boat

A preliminary arrangement for this type of boat has been prepared and it is suggested requirements of the territories be discussed at the third meeting of the Consultative Committee before further drawings are prepared.

6. 25 foot wooden inboard engined open fishing boat

Preliminary sketches and a costing based on an FAO boat built in Africa have been initiated and this drawing is to be completed after the third meeting of the Consultative Committee.

PROPOSED PROGRAMME OF WORK TO END OF ASSIGNMENT - priorities and details to be decided at the third Consultative Committee meeting.

1. 35 foot ferro-cement fishing boat: continue to provide supervision of construction but without involvement in time-consuming ordering of materials, fittings, etc.
 2. SPC course in fishing boat maintenance, Tonga: a two-week course plus further time spent in organising lecture notes and illustrations for a handbook if required.
 3. 35 foot semi-displacement day fishing boat: complete drawings, work programme, material lists and building instructions.
 4. 25 foot wooden fishing boat: complete drawings for boat with inboard engine for the inshore fishermen of Fiji.
 5. 40 - 45 foot ferro-cement carrier boat: to be designed for transport of fish in Fiji and Tonga.
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