INFORMATION REGARDING NEW TYPE ALIA *

Length overall:	9 metre	same as old type.
Beam:	2.95 metre	0.1 metre wider than old type.
Freeboard:	0.65 metre	0.1 metre higher than old type.
Engine:	25 HP extre long	0.125 longer than old type.

General: Alluminium hollow beams compared to wooden beams. Alluminium deck under beams and up to forward beam. Plywood deck over beams as before. The longer engine means that the engine bed, now made of alluminium, is much higher above the water and greatly improves the average speed in rough weather.

Prices:

(1)	New type alia, complete boat with 4 reels and 2 short arms mounted, 2 long poles and two oars.	WS$ 3200.00
	1set fishing gears as standard, including gear for 4 men for both bottom fishing and trolling as well as boat equipment	455.00
	1 emergency radio beacon	96.00
	3 Red hand flares	18.00
	3 smoke flares	23.00
	1 x 25 hp outboard engine, 25" transome	750.00
	1 x 8hp spare outboard engine, 25" transome	540.00
	2 ice boxes, alluminium outside, plywood lining with 35mm foam about 870 lbs volume, fitted into compartments in the hull, two boxes per alia price each WS$150	300.00
		WS$ 5382.00
(2)	STANDARD ADDTIONAL COSTS FOR EXPORT BOATS	
	Delivery to wharf	40.00
	Insurance average	140.00
	Wharfage	35.00
		WS$ 215.00

* 12th November 1980

INFORMATION REGARDING AGGREGATE DEVICE

Overal length	3 m
" width	2.4 m
hight	5 m

General

The alia type aggregate device is practically all alluminium. Build on 2 x 473 mm diametre alluminium tuyes and with box sectional all welded in for bracing. At the moment the aggregate is all welded but a study is being made so that it could be shipped in parts to be assembled by the buyers anywhere in the Pacific.

Prices:

		WS$
A.	1 alia type aggregate device complete	850.00
	1 light complete	80.00
		$ 930.00
B.	Standard additional costs for exports	
	Delivery to wharf	30.00
	Insurance average	90.00
	Wharfage	25.00
		$ 145.00

Research and Development

Division

Working Paper No. 2

ANALYSIS OF THE OPERATIONS OF BOATCRAFT

AND

RECOMMENDED FUTURE ORGANIZATION

Apia
Western Samoa

January 1980

CONTENTS

ANALYSIS OF THE OPERATIONS OF BOATCRAFT AND RECOMMENDED FUTURE ORGANIZATIONS

INTRODUCTION:

1 In 1976, with a grant from Denmark, technical assistance from the Food and Agricultural Organization of the United Nations, and financial assistance from the Leper Trust Board, a boatbuilding yard (Boatcraft) was established to design and construct boats for sale to fishermen.

2 The boatyard is being managed by a fully funded United Nations Technical Expert and has been operated on a minimum recovery of costs basis in order to keep the selling price of boats down and thereby encourage the purchase and acceptance of commercial fishing boats by village people. The boatyard has been eminently successful in promoting the acceptance of fishing boats with 207 boats sold since inception and a large backlog or orders maintained at all times.

3 Advice has now been received that the services of the FAO Expert in charge of the project will not be available after June 1980. In view of this, a Committee comprising representatives of the Government, FAO/UNDP and the Development Bank has called for a study which would analyze fisheries operations with a view to making recommendations on the future organization and operation of the boatyard.

OBJECTIVE:

4 The objective of this analysis is to determine the feasibility of continuing the operations of the boatyard on a commercial basis and to examine possible future structures of management and ownership.

GENERAL BACKGROUND:

5 Fishing is a traditional village occupation of the people of Samoa. Commercially however, the fish resources of the waters around Western Samoa were not utilised and in the absence of an organized local fishing industry, the imports of fish had risen to around 2,000 tons by 1975.

6 With adequate resources of fish available in the waters surrounding the country the Fisheries Division was charged with the promotion of fisheries development. The programme organized now includes the following components:

i	Boatcraft	-	Construction and repair of fishing boats with assets funded by the Leper Board and FAO/DANIDA Aid.
ii	Fisheries Division	-	Training of fishermen
		-	Fish Marketing
		-	Responsibility for Operation of the FAO/DANIDA Revolving Fund including repossession of boats.
iii	Rural Development Program	-	Grants for village communally owned fishing boats.
iv	Development Bank	-	Administration of the FAO/DANIDA Revolving Fund and loans to village purchasers of boats.
v	FAO/DANIDA	-	Initial capital and technical assistance.
vi	Leper Board	-	Funding of boatyard assets.

7 The Fisheries project embarked on in 1975 was based on the addition of 50 - 60 new fishing boats each year, so that by 1980, there was planned to be 300 motorised fishing boats available in Western Samoa.

8 Overall several boat designs were tested and a 28-foot double canoe, powered by a 25 HP outboard motor with a 4 HP auxillary outboard has proved to be most satisfactory.

9 With the expansion of the fish catch, it became necessary to establish a market for the fish. In this regard, under FAO/DANIDA Aid, a freezer and ice-making machine was set up at the main market in Apia. Another ice-making machine has been installed in Savaii. Some 10 freezers funded by Japanese aid and located at strategic positions around both Savai'i and Upolu provide storage for fish catches. These freezers are operated by traders who buy surplus fish from the fishermen at the Government price for resale either to villagers or to the Fisheries Division which runs a collection service from which it supplies the outlet at the main Apia Market.

10 At present, half the total catch of fish is demersal (bottom fish) such as grouper and snapper and half from migrating species, mainly skipjack tuna. Skipjack tuna varies in abundance during the year and from year to year. Thus the stability of the catch depends upon the stock of demersal fish. While it is desirable to increase the fleet of fishing boats, at the same time it is important to prevent overcapitalisation in boats for obvious reasons. The present plans were therefore based on reaching a total of 300 motorised fishing boats by 1980 by the addition of 25 to 30 new units per year. In addition, there will be replacement of old boats so that construction of new boats was set at approximately 50 to 60 per year.

BOATCRAFT:

11 The Boatcraft boatyard is located at Vaitele on land leased by the Leper Board from WSTEC. The boatyard has been financed as follows:

Leper Board

Land - lease from WSTEC
Site improvements (Road, fence, and slipway)
Diesel truck (3-ton)
Circular saw
Planer/Thicknesser

FAO/DANIDA

Handtools
Welding machines
Threading machine
Pick-up
Engines
Working Capital (Revolving Fund)

12 FAO/DANIDA has in addition supplied a station wagon for use by their technical expert, two echosounders, and an electric grader which have all been transferred to the ownership of the Western Samoan Government. An organization chart of the existing operation is included in Annex II.

Manufacturing

13 The original catamaran design was produced from plywood imported from New Guinea. The design is now being executed in aluminium with a consequent change in techniques from woodworking to aluminium welding and sheetmetal working being required.

14 Now that aluminium craft are available, demand for wooden hulled craft has ceased. The change to aluminium however has required the boatyard to train welders and this has been done. However, the quality of aluminium welding is only fair and would not be suitable for making export craft. More attention is required in this area of production.

15 The production of the twin hulls required is aided through the use of building frames and jigs. This simplifies the operation and allows for limited mass production.

Supply of Raw Materials and Labour

16 The main raw materials in the construction of fishing boats - plywood and aluminium, are imported from New Guinea and New Zealand respectively. Shipping is often a problem with orders, otherwise availability from the above sources is secure. Other materials like timber etc. are obtained locally.

17 Construction is carried out by ex-leper patients, who posses adequate skill in boat building. The management of Boatcraft is of the opinion that the quality of the ex-leper patients workmanship could be improved a great deal given continuous on the job training.

Boatcraft's Present Capacity

18 Full production at Boatcraft is taken to be 60 Alia boats per year plus repairs on repossessed boats and other boats. Production beyond this would require hiring more labour. In 1977 Boatcraft was concentrating on production only and built 69 Alia boats. In 1978 a total of 56 Alia boats were built and repairs were made on other boats. The construction of 2 custom designed boats for export, and repair work has occupied much of the time in 1979. In addition to this, 35 Alia boats have been built through September.

FINANCING SCHEMES:

19 By using proceeds from the sale of boats funded by DANIDA Aid, FAO/Government established a Revolving Fund within the DBWS. The Fund is administered by the Fisheries Division but the DBWS is responsible for the accounting. This fund has been used to finance the purchase of boats by individual fishermen. The DBWS also finances, by way of loans out of its ordinary funds, up to about 80% of the costs of a fishing boat for fishermen. Villages however also buy boats on a communal basis under the Rural Development Program.

20 The purchasing of boats is therefore financed in three ways:

i Fisheries Division

The Fisheries Division finances the purchase of fishing boats out of the FAO/DANIDA Revolving Fund. A village fisherman can purchase a fully equipped boat by placing 10% ($300) deposit at the time of ordering and then as is normally the case would finance the balance of the purchase (about $3,150 on current costs) by entering into a hire purchase agreement with the Fisheries Division with repayments over 28 months. No interest is charged on the hire purchase finance.

ii Development Bank

The Development Bank provides loans to fishermen out of its ordinary funds for purposes of purchasing fishing boats provided 20% deposit on the cost of the boat and other conditions required by the Bank are met. Interest charged is normally between 9% and 10%.

iii Rural Development Program

Since 1978 villages communal purchases of fishing boats have been subsidised for 65% of the purchase price by the Government operated Rural Development Program which assists financing of village communal

development projects. As most purchasers of boats live in the villages anyway, the effect of the Rural Development Program has meant that almost all new orders are coming through the Rural Development Program.

Financing Scheme	Fisheries Division	DBWS	Rural Development Program
Current Price	$3,450	$3,450	$3,450
Financed By:			
Sponsor	345 (10%)	690 (20%)	173 (5%)
Grant (RDP)	-	-	2,070 (65%)
Revolving Fund	3,105 (90%)	-	-
DBWS Loan at 9% Interest	-	2,760 (80%)	1,207 (30%)
	$3,450	$3,450	$3,450

21 The RDP has therefore, by way of a 65% grant element, reduced the purchase price of boats by over $2,000. One result of this has been that loan delinquencies by individual purchasers have increased dramatically since the Rural Development Scheme began, with payments arrears to the revolving fund now totalling $16,875.

22 Accordingly the study committee has also asked that an analysis of the financing of fishing boats be made. This requires to be done in a separate paper.

THE MARKET:

The Product

23 The twin hulled canoe has proved to be a popular design because of its versatility. Boats originally produced only from plywood, are estimated to have a minimum economic life of 5 years. With average maintenance this can be extended to 7 years and with good maintenance they should last 10 to 15 years. With the aluminium craft, the minimum economic life should be at least doubled to 10 years, although the outboard motors will require replacing at 5 years.

24 In producing for the local market cost is the most important factor and for this reason, the heavy expense of obtaining a "perfect" finish is not warranted. If however, the potential for export is to be realised, then quality will be a more important consideration than price.

Domestic

25 It is hard to determine the optimum number of boats that should be built for Samoa's Fisheries. Estimates made at the beginning of the fisheries aid project put the figure between 300 and 450. There is not so much of a resource constraint as a market constraint although certain popular areas, such as the reef and lagoon, are being overfished. Over 200 boats have been built but it is estimated that less than 150 are actually available for fishing due to boats that have been lost or are in need of repair.

26 With the present backlog of orders for new boats (about 68 boats at September 1979) and the replacement of older wooden boats, Boatcraft will be busy for several years.

Export

27 Since 1978, Boatcraft has been exporting some of its boats to other Pacific Islands - Tonga, Cook Islands, New Hebrides, Tokelau, Solomons and American Samoa. In 1979, exports have accounted for $45,443 of total sales. Most of this came from the sale of 2 specially designed boats for Tokelau which accounted for approximately $23,000 of the total export. The remainder was through the sale of Alia fishing boats (28 ft). Exports in 1978 totalled only $3,541. Presently the biggest problem in exporting is the high cost of freight. If exports are to grow the entire operation at Boatcraft will have to be expanded to be able to meet this market as well as local demand. The pro-forma income statements however are only based on local sales.

28 The main reason why this product has sold to other islands is because of its relatively low cost and its general adaptability to the type of fishing carried out in these islands. The price for exported boats should be kept in line with the price for locally sold boats. Efforts should be made to increase export through marketing techniques such as advertising. Better quality construction is also important and this is being worked on at Boatcraft. Custom designs may be needed in some cases so the services of a naval architect may be required. Initially, Boatcraft will not be able to afford to hire one, so design work may have to be contracted to an outside firm.

Prospects for Product Diversification

29 Boatcraft may be able to diversify into the production of other types of small boats. This has been tried but there have been problems with the quality of workmanship. Again, the services of a naval architect may be required for the design work. The important thing to remember is that over the long term Boatcraft will have to diversify and should be able to offer all the services of a small boatyard.

Sale of Outboard Motors and Spare Parts

30 The sales figure shown in the income statement reflects the sales of all boats, fishing gear, and repair work. In the future Boatcraft is confident it will start handling sale of outboard motors and spare parts to supplement that of Agriculture Store, which often does not supply all the needs of fishermen. There is a large potential market for outboard motors as each new boat must have 2, plus replacement motors. Revenue may increase by 40 to 50 thousand tala with the sales of the motors. An additional employee may be required to be responsible for the motors which would have to be considered when determining the markup. Additional working capital may also be required because of the large expense of holding motors in stock. Nonetheless, if properly administered the sale of outboard motors and parts could contribute to the profitability of Boatcraft.

COMMERCIAL VIABILITY:

31 A projected Income and Expenditure Statement plus a Balance Sheet of Boatcraft as of September 1979 are given in Annex I. The Income and Expenditure Statement based on information obtained from Boatcraft, indicates that the operation on its own can become a commercially viable undertaking.

To date Boatcraft has been selling boats at a low price, so that village fishermen could afford to buy them. With the present 12.5% mark up above cost, it seems that the operation has been profitable, but if the salary of the FAO Expert is included, the business has been losing money. The mark up will have to be increased if Boatcraft is to continue as a commercially profitable boatyard; a 30% mark up is projected. Profits could be internally reimbursed for expansion or, if appropriate, returned to the owners by way of dividends on stock owned.

32 With most of the new orders for boats coming in through the Rural Development Program, price is not as important as it initially was because of the 65% grant element. Individual purchasers may be more affected by the increase in price than the group buyers who qualify for RDP assistance. In the month of September, Boatcraft had 68 boats on order, of which 63 were from the RDP. Even without the present backlog in orders, any boat produced will be sold, as long as the price is not unreasonable.

33 Presently, Boatcraft enjoys a duty free status with regards to imported materials. Application for an extension of the duty free privileges should through the Economic Development Department to ensure the continuance of this preferential treatment. This would apply only to raw materials and not to the outboard motors and spare parts. Boatcraft should apply for a tax holiday incentive. This would be advantageous if the company needed to retain profits in order to expand. It is unlikely that incentives would be granted if the profits were paid out.

MANAGEMENT AND ORGANIZATION:

Management

34 Regardless of the ownership of Boatcraft, management must be good if the operation is to survive and serve its purpose efficiently. The present manager (Mr Overra) will be withdrawn after the completion of his term in June 1980.

35 Ideally, the management tasks should be divided into production and administration. The capability of some of the present Boatcraft employees in administrative management has proven limited, when Mr Overra was overseas for 3 months in 1979. The production and administration managers will be required to provide sound management, as the operation is getting to the point where it is almost too much for one man, plus the fact that Boatcraft is proposed to be operated along commercial lines. Mr Overra seems to have done a good job up to now, but he is very qualified and it is unlikely that one new manager would able to perform as well. Moreover, he has not been required to operate Boatcraft as a completely commercial enterprise.

36 The task of designing the boats will require someone trained as a naval architect. This is an important part of the boat-making operation especially with Boatcraft's intention to maintain and probably expand on its production of specially designed boats (ferries, tugs), which accounted for about half of exports in 1979. If this service is not available, Boatcraft is likely to miss out on a lot of potential revenue. Although this work could be contracted out on a case by case basis, it could prove very expensive. If Boatcraft decides to build only Alia boats, of which a large backlog of orders has been lodged, then the need for designing skill could be minimised a good deal, as Alia boats have become a familiar design to the boat builders.

37 The most ideal option in the long run, is to have a local person trained by Mr Overra meantime, until he leaves next year. Preparation for this is now underway, and the post is presently being advertised locally. The main problem here is that there is no guarantee this person would be found adequate and ready to take over the management of the operation when Mr Overra leaves in the middle of next year. Mr Overra feels however that because of the time factor, plus very little initiative in considering other possible alternatives, the training of a local person should be actioned while he is still around.

38 It is considered that extending the existing, or seeking further technical assistance from a United Nation Agency, e.g. UNIDO, to continue managing Boatcraft through its proposed transition to becoming a fully commercially operated venture, is the option that would guarantee sound short-term management. This should further assure the full training and preparation of a local person to take over the long-term management of the operation when the management under TA is terminated. However, after about four years of aid to this project, any request for further aid is likely to meet a great deal of resistance. Thus the realization of this option may be remote.

39 Recruitment of a qualified person from overseas to manage the operation and train local staff, would be much more expensive than hiring a local person to understudy, and to succeed Overra.

40 The existing management of Boatcraft has opted for recruiting and training a local person, mainly because of Mr Overra's limited time available and the lack of effort in seeking other alternative TA.

41 The new management of Boatcraft at Board level as proposed will need to assess value of the actions of the existing management and to explore other alternate sources of management, including those mentioned in this analysis.

Future Organization and Ownership

42 The options on ownership range from an organization that is totally privately owned to that which is totally government owned. In between will be combinations which will be determined by how much is owned by Government, and how much owned privately.

43 According to the original aid Agreement, the FAO inputs into Boatcraft are to be transferred to the Government upon completion and withdrawal of the technical assistance. It is up to the Government then what to do with its share; it could be transferred to an appropriate Government Agency, or sold to other interested parties. As Boatcraft is a monopoly, it would be prudent for the Government to have some control over its operations.

44 The Leper Board which controls the majority of fixed assets of the boatyard must be given some control in whatever would be the future ownership of Boatcraft. The Leper Board's primary concern is that the ex-lepers find employment at Boatcraft as they have difficulty finding work elsewhere. As long as ex-lepers continue to be employed by Boatcraft, the Leper Board probably would not be too concerned about who may be the other part-owners of Boatcraft.

45 There is therefore a case for the Government and the Leper Board to maintain control of the affairs of Boatcraft. A clear cut distribution of shares taking into account what has been contributed by each party should be undertaken by a qualified and independent Accountant. The Government should then transfer its interests to a suitable Government Agency. The Leper Board and the Government Agency should form a company, establish a Board and appoint a capable manager or managers to manage the operations of Boatcraft as a fully commercial enterprise. Annex III is the proposed organization chart for Boatcraft.

46 At some future date and once Boatcraft is operating on a sound basis, the Government Agency may offer its shares for sale to the public in line with the current Government policy.

ECONOMIC BENEFITS:

47 Some of the economic benefits from the boat building industry are summarised as follows:

i availability of more suitable and mobile boats which local people can use to extensively harness the fish resources, of the very few which the country is richly endowed in;

ii potential for import substitution;

iii export of fishing boats to other islands is an encouraging development towards earning of additional foreign exchange;

iv the utilization of local skill and technical know how in boat building.

CONCLUSIONS:

48 The operation of Boatcraft has proven very important to the development of deep sea fishing in the country. The continuous demand from local fishermen indicates the acceptability and adaptability of the boats to the type of fishing largely undertaken by villagers. Interest from other Islands again indicates the suitability of the boats to their type of fishing as well.

49 It is considered important to continue the operation of Boatcraft, as a properly organised and viable commercial venture, particularly in view of the completion and withdrawal of FAO technical assistance next year. The operation is capable of undertaking its work on a commercial basis. Its activities from boat building to doing repair work plus equipping boats with gear and in future, outboard motors, can generate funds sufficient to employ a capable manager and to maintain and perhaps expand its operations when required.

50 The departure of the FAO Expert next year means that a capable person(s) should be employed to manage the operations of Boatcraft immediately. This aspect is vital to the continued satisfactory operation of Boatcraft.

RECOMMENDATIONS:

51 The following recommendations are based on analysis of the informations obtained from Boatcraft and Fisheries Division:

a the operation of Boatcraft be re-organized into an undertaking which will be run by a company on a viable commercial basis. Initial participants will be drawn from the Leper Board and DBWS or whichever Agency to whom Government wishes to transfer its shares;

b the shareholding in the proposed company should be determined by a qualified and independent Accountant taking into account what the Leper Board and FAO/DANIDA/GWS have invested in the operation;

c in view of the completion of the FAO technical assistance next year, it is crucial that the Board of Directors of Boatcraft should engage a capable person to manage Boatcraft after the departure of the FAO Expert;

d at some future date and as soon as the company is operating on a sound basis, the Agency to whom Government transfers its shares should offer the same to the public in line with existing Government policy.

ANNEX I

BOATCRAFT

INCOME STATEMENTS FROM 1978 PROJECTED TO 1981

	1978	1979[1]	1980[2]	1981[2]
Sales	$115,846	$118,422	$336,860	$369,980
Salaries	22,008	18,699	58,210	62,853
Materials	72,171	64,133	209,430	230,410
Overhead	10,417	8,279	11,750	12,520
	$ 11,250	$ 27,311	$ 57,470	$ 64,197

NOTES:

1 Income for 1979 is for the period up to September 30.

2 Assumptions for 1980 and 1981:

a Sales of 60 boats and related fishing gear with 30% mark up above cost.

b Sales of 50 outboard motor units for new boats and 30 units for replacement. Spare parts are also sold.

c A production Manager and an Administration/Sales Manager are hired at a combined salary of $25,000 per year.

d All expenses increase by 10% over previous year.

3 All imported raw materials are exempt from import duty and a tax free incentive is assumed.

BALANCE SHEET

(As at September 1979)

Cash	$ 1,132	Employees fund for possible shareholdings	$ 1,298
Accr. Depreciation	5,000		
Stocks - materials	30,163		
Stocks - Fishing gear	12,000		
Current Assets	$48,295	Liabilities	$ 1,298
Truck	5,000	FAO Shares)	
Machinery	13,500	Leper Board Shares)	89,997
Hand Tools	1,500	Retained Earnings)	
Office	1,000		
Boatyard	22,000		
Fixed Assets	$43,000	Equity	$89,997
TOTAL ASSETS	$91,295	TOTAL LIABILITIES AND EQUITY	$91,295

DETAILS OF PRO-FORMA STATEMENTS

	1980	1981
Sales: 60 Alia boats	$216,000	$237,000
Sales of Fishing gear for new boats	22,500	24,780
Other sales of fishing gear	14,000	15,410
Sales of Outboards for new boats	39,600	43,560
Sales of Outboards for replacement	23,760	26,130
Sales of spare parts	6,000	6,600
Repair work	15,000	16,500
Total Sales	336,860	369,980
Salary Managers	25,000	27,500
Salary, production workers	26,506	27,973
Salary overhead	6,704	7,380
Total Salaries	58,210	62,853
Materials for production and repairs	111,790	122,990
Gear Purchases	35,420	38,980
Outboard Motor Purchases	57,600	63,360
Spare Parts purchases	4,620	5,080
Total Materials	209,430	230,410
Depreciation	4,050	4,050
Miscellaneous	7,700	8,470
Total Overhead	11,750	12,520
Net Income (before tax)	57,470	64,197

NOTES:

1 Cost of boat in 1980 is 2,761, selling price is 3,600
Cost of boat in 1981 is 3,036, selling price is 3,950
Cost of boat and all accessories in 1980 is 4,767, in 1981 5,234.

2 All expenses increase 10% over previous year.

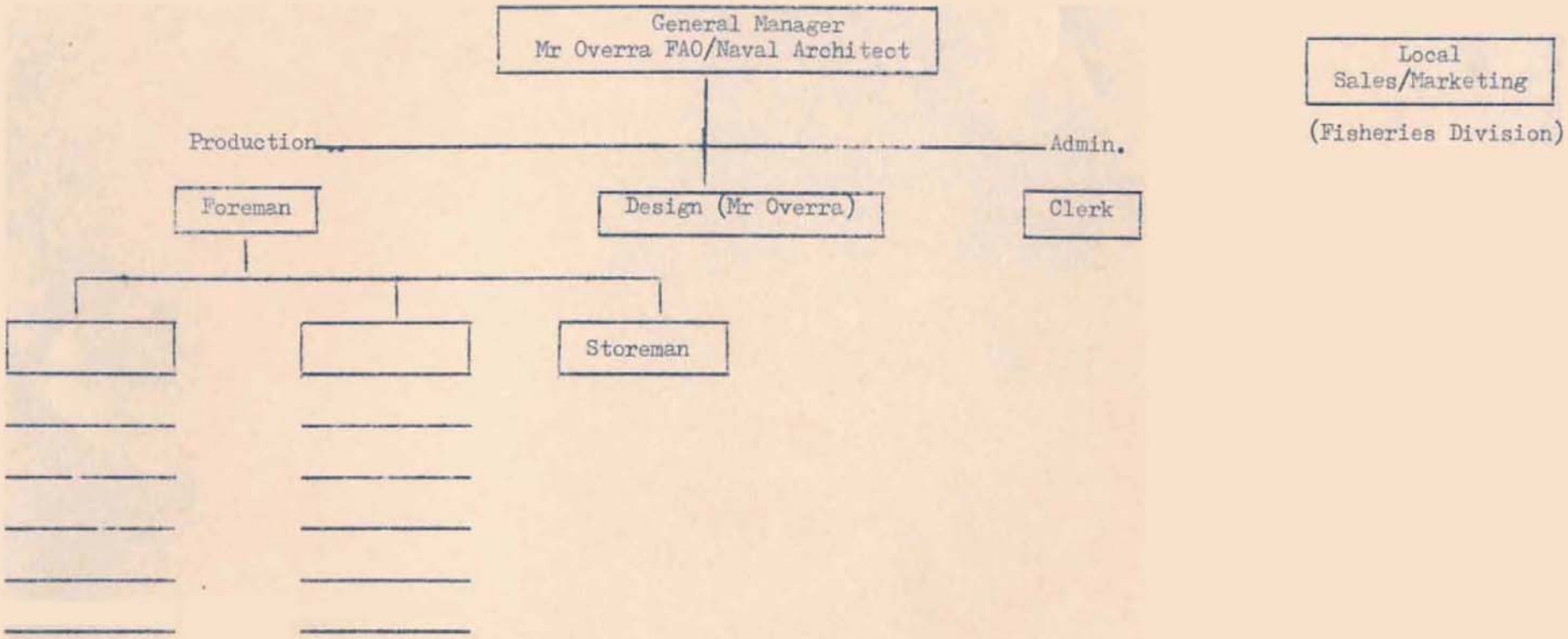
3 Markup on everything is 30% except outboards which is 10%

NOTES TO THE FINANCIAL STATEMENTS:

The balance sheet shows Boatcraft to be in fairly good shape. The amount of cash shown is normally higher but as of the date of record, it was drawn by large purchases of material in July and August. The stocks are unusually high, reflecting a large stock of timber and plywood and negligible stocks of the important aluminium. Because of the long lead time between ordering and receiving imported material the levels of these stocks should never be allowed to drop below a 3 month supply, assuming a production level of 60 boats per year. A material shortage, (aluminium) has prevented Boatcraft from producing boats for the months of September and October.

The respective equity holdings of FAO/DANIDA and the Leper Board needs to be determined by a qualified Accountant. This is necessary before the transfer of the FAO - DANIDA assets to the Government of Western Samoa. It is complicated by the fact that in addition to the fixed assets provided there are profits to be distributed for the period since 1976. A rough estimate of the respective ownership, ed on present book values of assets only give 25% ownership to FAO and 75% ownership to the Leper Board.

BOATCRAFT - EXISTING ORGANIZATION



BOATCRAFT - PROPOSED ORGANIZATION