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Sub-Regional Workshop on Shipbuilding,
Shiprepair and Design for
Mediterranean Countries

Valletta, Malta, 25 - 27 April 1979

ANNEX TO
RECENT EXPERIENCE AND PROSPECTS
FOR THE DEVELOPMENT OF SHIPBUILDING
AND REPAIR IN DEVELOPING COUNTRIES*

by

TERMINAL OPERATORS LTD.**

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** Rodwell House, Middlesex Street, London E1 7HJ

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1. INTRODUCTION

1.1. BACKGROUND TO THE STUDY

1. A workshop in Shipbuilding, Shiprepair and Design has been organised by UNIDO in co-operation with the Government of Malta for the countries of the Mediterranean sub-region. Its purpose is to promote co-operation among developing countries of this sub-region in the establishment of shipbuilding and shiprepairing potential. The Workshop will be held at Valletta, Malta, 23rd to 27th April, 1979.

2. Through Terminal Operators Limited, Mr. John Peach, B.Sc. has been commissioned, by UNIDO, to prepare a study report on the sub-regional scene with a view to providing integrated information for discussions. The study, entitled "Recent Experience, and Prospects, for the Development of Shipbuilding and Repair in Developing Countries" has been circulated and will serve as the basic document for the discussions at the Workshop.

3. The purpose of this Annexe is to amplify some of the points raised in the Report and particularly those which relate to general viability criteria for establishing and expanding the shipbuilding and shiprepair industry in the Mediterranean and specific problems confronting the developing countries of the sub-region.

4. These topics are covered in general terms in Parts 4,5 and 6 of the Report to which reference should be made.

5. The opportunity has been taken to make reference to very recent developments in the Sub-Regions, thereby ensuring that the information available to participants of the Workshop is as up-to-date as practicable.

2. GENERAL VIABILITY CRITERIA FOR ESTABLISHING AND EXPANDING THE SHIPBUILDING AND SHIPREPAIR INDUSTRY IN MEDITERRANEAN COUNTRIES

2.1. GENERAL

6. In the First Report, certain pre-requisites for the promotion of shipbuilding and shiprepairing in developing countries were identified and discussed. We comment further under the following headings:-

- (i) Industrial base,
- (ii) The availability of skilled labour and staff;
- (iii) A market for the product;
- (iv) A suitable site;
- (v) Access to capital.

7. These factors in effect provide a basis for establishing general viability criteria for developing or expanding shipbuilding/shiprepairing industries. Problems which are likely to confront the developing countries in this task will almost certainly result from shortfalls in one or more of the above areas. It is not practicable, when dealing with thirteen different countries at widely differing stages of development, to identify specific problems which will confront individual countries. At this stage, therefore, we only intend to indicate the most pertinent heads of questions to be answered by highlighting possible problem areas. It is left to the representatives of the participating countries to consider these questions in the context of their own national goals and capabilities and thence to decide where problems are most likely to occur. Open discussion at the Workshop should provide sufficient information to determine which problems are most likely to lend themselves to solution through sub-regional, regional or international effort.

2.2. VIABILITY CRITERIA

2.2.1. General

8. A number of questions have been formulated under each of the five headings referred to in Paragraph 6. It is suggested that the answers to those questions will provide an indication of the potential viability of a shipbuilding or shiprepairing industry.

2.2.2. Industrial Base

- (i) Are components and raw materials available locally?
- (ii) Are qualities and prices of locally produced components competitive with those obtainable from outside sources?
- (iii) Is shipbuilding quality steel available from domestic producers?
- (iv) Can economies of scale be gained through co-operation with local industries using similar technologies to those required for shipbuilding and/or shiprepairing?
- (v) Are skills being utilised in other local industries which could usefully be employed in shipbuilding and/or shiprepairing?
- (vi) Are services available - electricity, water, compressed air, oxygen etc?
- (vii) Is there adequate access to the site for materials and labour - road, rail, harbour facilities e.g.?
- (viii) Do existing facilities impose limitations on the movement of large and/or heavy pieces of equipment?
- (ix) If expatriate labour has to be imported in large numbers for construction of the facility, or for shipbuilding, are housing, welfare and recreation facilities sufficient to cope with a large influx of people?

2.2.3. Skilled Labour and Staff

- (i) Are suitably qualified and experienced personnel available locally for design and production work?
- (ii) Are training and educational facilities, catering specifically for the maritime industries, available locally?
- (iii) What is the preferred means of access to "know-how" and technical assistance should this be required?
- (iv) Are labour relations generally good and does the labour force have a reputation for stability?
- (v) Is there a rapport between domestic shipowners, shipbuilders/repairers and the trade unions?

2.2.4. Market for the Product

- (i) Is there a strong and growing shipping industry which could provide a base work load?
- (ii) Are incentives necessary to encourage owners to support domestic yards?
- (iii) What interest, credit and repayment terms can be offered (a) to domestic owners and (b) to foreign owners? This leads to -
- (iv) What level of governmental involvement is available or desirable in the planning, financing, marketing and operations functions?
- (v) Do newbuilding and/or repair prices compare favourably with those obtainable elsewhere?
- (vi) Is there a marketing function within the organisation which can monitor changing trends in shipowning and then aggressively market the product once areas of expansion have been identified?

2.2.5. Site

- (i) Are level areas suited to shipbuilding and/or ship-repair available?
- (ii) Will the development/expansion utilise a "green-field" site or will it take place within existing boundaries and constraints?
- (iii) Is land reclamation required ?
- (iv) Are there sufficient depths of water for the proposed operation?
- (v) Is there an adequate infrastructure to support the facility? (See also 2.2.2. - Industrial Base).
- (vi) If the facility is to be used for shipbuilding, will a building dock or an inclined berth be used for assembly?
- (vii) How much environmental protection is considered necessary/desirable?
- (viii) To what extent is future expansion of the facilities to be allowed for?
- (ix) How long is it intended that the facility should last? Is technical obsolescence to be assumed after a given period or will facilities be designed to last indefinitely? The latter assumes that an increase in first cost will be justified through a longer life and that the facility will still be appropriate in its present form to shipbuilding technology in the future.

(x) Does the location of the site have geographical significance?

2.2.6. Access to Capital

9. Answers to the foregoing questions will largely determine the amount of capital required for implementation and operation of a given facility. An indication of the costs associated with developments in shipbuilding and ship repair are provided by some recent examples which have been reported in the Press.

(a) A preliminary study into the feasibility of building a drydock, designed for tankers of more than 100,000 deadweight, near Port Elizabeth in South Africa puts the cost of building at \$181 million.

(b) A new floating dock at Dubai which has been designed to cater for ships up to 1,000 deadweight is reported to have cost \$12.2 million. The facility has 40 repair berths and the ships are lifted bodily from the water by the "Syncrolift" system and placed on the repair quays. (128 "Syncrolift" shiplift and transfer systems in 54 countries are now operational. The largest, at Las Palmas in the Canary Islands, has a lifting capacity of 25,000 deadweight. A system which is presently under construction at Buenos Aires, Argentina, will have a lifting capacity of 40,000 deadweight).

(c) Sunderland Shipbuilders new Pallion Shipyard is the largest facility in the world within which all shipbuilding work is carried out under cover. Complete ships up to 30,000 deadweight are produced. The cost was \$15.2 million for civil engineering works alone. Supply and installation of the dockgate, machinery and services were not part of the civil engineering contract and the costs are not included in the above.

(d) The three dock repair complex at Dubai which was officially opened on 26th February, 1979 is reported to have cost between \$468 and \$530 million to build. The smallest dock measures 370 metres by 66 metres and can take ships up to 350,000 deadweight; the second dock is for tankers up to 500,000 deadweight; the largest dock measures 525 x 100 metres and was designed with one million deadweight ships in mind. All of the docks are 12.5 metres deep.

10. The costs associated with civil engineering works and with acquisition of hardware are likely to be significant. There are, however, a number of other costs which have to be recognised and quantified.

(i) If domestically built ships are more expensive than imported ships what subsidies are necessary to stimulate demand?

(ii) How many tugs are required to operate the facility and how is their purchase to be financed?

(iii) What reserves are required to survive one or two bad years if necessary?

(iv) How much reliance will be placed on the skills and experience of expatriate staff and how much will this cost?

(v) What provision is there for an ongoing commitment for investment continually to modernise and maintain facilities and to upgrade the skills of the workforce?

(vi) What are the credit terms which will be offered to prospective purchasers? (Once a shipowner has identified the need for a ship, he has to consider the terms of any outside finance which he requires to be an essential part of the contract. In the depressed and extremely competitive situation within the world's shipbuilding industry, total true cost now often exceeds the market price. Developing nations have to ask themselves how long they could withstand this type of competition. Higher prices, however, can be offset by the availability of a favourable financial package. Thus the National Shipping Corporation of Pakistan were willing to pay a higher price for Japanese ships which carried a financial package featuring 100% finance, repayable over 30 years with a ten year grace period, at 3% per annum interest. It is the availability of this type of package, which is now all too frequently being offered by some established shipbuilding nations, who are desperately trying to maintain a nucleus of facilities and personnel in the current depressed market conditions, which will make the task of the developing countries contemplating expansion even more difficult).

(vii) How much of the initial outlay has to be spent overseas and how will this affect the balance of payments situation?

2.3. SUMMARY

11. The major obstacle to any expansion plan whether it be in shipbuilding, shiprepairing or shipowning is likely to be centred on the difficulty of attaining entry to the markets. In this respect, those countries which have a strong and expanding merchant fleet are likely to be at an advantage over those which have little or no indigenous shipping. Nevertheless, domestic owners will also expect prices and financial packages to be comparable to those attainable elsewhere. They will also expect short construction times, availability of a good variety of designs for which there is a demand and quality of workmanship. Achieving these goals poses problems for all shipbuilding and shiprepairing nations.

The problems are likely to be intensified, however, in the smaller countries who lack locally available resources and skills.

12. Finally, developing countries should avoid situations where large investments are made in the same industries in adjacent states, with the danger of ruinous competition for a share of a limited market. Competition is already fierce and new facilities are still being developed. Reference has already been made to the opening of the large repair complex at Dubai. Including Dubai there are now 40 repair yards in the world which are capable of repairing VLCC's over 250,000 deadweight. In theory, these yards should not pose a threat to facilities in the Mediterranean which, for the most part, are intended for smaller ship types. (See Table 29 Page 86 of the Report). The world fleet, however, currently contains only about 400 ships of more than 250,000 deadweight giving an average potential workload of 5 ships per drydock per year. It is likely that the larger facilities will have to rely on smaller ships to make up the shortfall or to seek work on offshore fabrication or land engineering applications. This could have an adverse effect on the occupancy levels of docks in the Mediterranean sub-region.

13. ASRY, the subsidiary shiprepair company of the Organisation of Arab Petroleum Exporting Countries (OAPEC) has commissioned a feasibility study for a new shiprepair yard to be sited in the Arab Mediterranean area. This could also increase the competition for existing and other planned facilities in the Mediterranean.

14. Expansion is also taking place in the shipbuilding sector. A new shipyard in Singapore was opened in 1978. The yard is a joint venture between Keppel Shipyard (Singapore) and Philippine interests. The first phase of development cost \$10 million and the yard is comprehensively equipped to undertake the full range of shiprepair and shipbuilding work on ships up to 5,000 deadweight.

15. IHI has recently concluded a contract with India's Ministry of Shipping and Transport for consulting services for shipyard construction. IHI is currently operating shipyards in Brazil and Singapore as joint ventures.

16. Co-operation and joint ventures between developed and developing shipbuilding countries have become increasingly common. They can provide methods whereby each participant can most effectively utilise its national resources of labour, technology and finance, and overcome some of the problems which confront them as individuals.



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