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*Imports: \$49
Exports: \$184 M.*

**A REPORT BY
THE SECTOR TASK FORCE ON**

**THE CANADIAN SHIPBUILDING AND
REPAIR INDUSTRY**

Chairman A. A. McArthur

Industry, Trade and Commerce Industrie et Commerce
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SHIPBUILDING INDUSTRY
CONSULTATIVE TASK FORCE

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1.0 OBJECTIVES

The objectives of this report are directed towards maintaining a viable shipbuilding and ship repair industry in Canada.

2.0 INDUSTRY SUMMARY AND BACKGROUND CONSIDERATIONS

The industry size, structure and recent history is summarized in the Department of Industry, Trade and Commerce discussion paper "The Canadian Shipbuilding and Repair Industry", published in early 1978. While individual members of the Committee had certain views concerning points which might have received more emphasis in this document, it was accepted as a useful and factual basis for the Committee's deliberations. The document is attached as Appendix 1 of this report.

3.0 RATIONALE FOR A CANADIAN SHIPBUILDING INDUSTRY

Maintaining a strong domestic capability in the construction and repair of ships should be an essential element of national economic policy because:

- a) The shipbuilding and ship repair industry occupies a special position as a supplier of goods and services to the marine transportation sector;
 - It is indigenous to both of Canada's sea coasts and to the Great Lakes;
 - It is largely Canadian owned;
 - It builds and repairs a wide variety of special purpose ships for use in the domestic movement of freight and passengers on inland and coastal trade routes;
 - It provides the necessary ship repair facilities for deepsea vessels which are engaged in Canada's export/import trade;
- b) National sovereignty dictates the need to preserve a vital domestic shipbuilding capability to protect special interest situations; this capability now exists to design, build and repair:
 - Naval ships, and in so doing maintain some domestic competence in the production of military hardware ;
 - Special purpose ships to meet Canadian conditions for navigation, search and rescue and other essential services;
 - Vessels needed to support the exploitation of offshore (and Arctic) resources e.g. fishing, energy, and in so doing to gain maximum benefits for Canada;
 - Specialized deep-sea vessels to be employed on selected trade routes -- and in so doing to increase the degree of domestic content in the extraction and delivery of non-renewable resources to export markets and to exercise some national control over the delivery of other export products;
- c) The industry generates significant economic benefits without excessive government assistance:
 - Secondary benefits in related industries are at least equal to the manufacturing value-added from shipbuilding;
 - In some cases, Canadian shipyards are located in areas with high unemployment and limited alternative employment opportunities;
 - The level of government assistance provided to the industry is not unreasonable when compared to assistance provided to some other domestic manufacturing industries;
 - The record of shipbuilding for export is impressive in terms of growth in positive trade balances. For example in 1975 the industry's position as a net exporter had improved by about \$100 million -- net of subsidies -- over 1970 whereas in eighteen of nineteen other medium -- and high -- technology products Canada's position as a net importer has actually worsened considerably between the same two points in time. (Science

4.0 ISSUES

For the reasons stated above, the Committee believes that an efficient, profitable industry is essential for Canada. In today's market however, opportunities in the export market continue to exist only to a limited extent. The depressed state of the industry throughout the world, the high rate of subsidization and low labour rates applicable in many countries mean that most of the Canadian shipbuilding industry must look to the domestic market for its major sales opportunities over the next few years. A certain degree of protectionism is considered appropriate to assist the industry at this time, if it is not to be completely vulnerable to unbridled assault from heavily subsidized foreign competition.

The Committee has chosen to present its recommendations under a number of different headings. These follow below. Each heading is followed by a short discussion of the points at issue and concludes with specific recommendations:

4.1 Fishing Fleet

The replacement and continued development of Canada's fishing fleet is considered to be one of the most beneficial elements to be derived by Canadians from the 200-mile zone, equally important with the onshore allied industries associated with the fishery.

It is considered no more appropriate to build new generations of fishing vessels with foreign labor than it would be to operate the vessels or man the onshore industry with foreign labour, particularly as these vessels could form a critical component of a slim domestic ship market over the next few years.

The major areas of development of the fleet are:

- a) Replacement, as necessary, of a substantial number of the vessels in the inshore fisheries;
- b) Replacement of a number of conventional offshore vessels and construction of new designs such as freezer trawlers, bulk fish carriers, and patrol vessels suited to the new fishing zones;
- c) Eventual replacement of the foreign catching effort with Canadian-built ships;

The Committee notes in particular two points of concern regarding current government practices as they apply to fishing vessels. Firstly, the importation of used fishing vessels, duty free, compounds the overall problem raised by importing used vessels (see para. 4.5.4) as far as this sector is concerned. Secondly, an apparent reversal in government policy regarding payment of a higher rate of subsidy on fishing vessels than that which applies to other categories of vessel. Until recently the total level for the over 75 foot category had been 35 per cent but the Department of Fisheries has not maintained this policy.

RECOMMENDATIONS

- In its review of fishing policy, government ensure that maximum opportunity be afforded the Canadian shipbuilding industry to participate in the full economic benefits afforded by the 200-mile limit, including support at a level which maintains the competitive position of the Canadian shipbuilder.
- Government continue the subsidy to the shipbuilder for fishing vessels over 75 feet in length at the current rate of 20 per cent but recognize that a supplementary subsidy rate may be necessary as part of its assistance to the fishing industry;
- Government not issue fishing licences for the use of used foreign built vessels imported without payment of duty; with the possible exception of novel types of vessels imported to test new fishing techniques.

4.2 Canadian Merchant Marine (excluding Arctic)

4.2.1 Deep-Sea

The arguments for and against an international merchant marine are well known, and reflect as much as in any transportation area, the different interests of the equipment user and supplier. A Canadian Merchant Marine would only produce the maximum economic advantage to Canada when the vessels are built in Canada.

The Committee draws attention to the recent Alcan Report which indicated certain routes and applications which were close to being commercially viable. Currency realignments since that time should have improved the relationship, and while indiscriminate competition on existing routes is not advocated, the development of some viable routes should be encouraged.

RECOMMENDATIONS

- In its review of deep-sea fleet policy, the government ensure that the economic benefits of Canadian built vessels are fully evaluated;
- Government pursue a policy of making possible a deep-sea fleet on a selective basis.

4.2.2 Coastal Shipping

Many of the arguments put forward above apply equally to coastal shipping. Under present regulations:

- a) Shipping between Canadian and United States ports is open to vessels of any registry;
- b) Coastal trade between two United States ports, including Alaska and Hawaii, is restricted under the Jones Act to the United States flag vessels. The United States flag vessel has to be built in the United States to operate in the coastal trade, effectively excluding from this market Canadian yards and Canadian shipowners;
- c) Coastal trade between Canadian ports is limited to ships of Canadian or British registry;
- d) Vessels built in the British Commonwealth, under present regulations, enter Canada duty free;
- e) Vessels built in other countries are dutiable on date of application for coasting licence.

The Darling Report commissioned by the government to address the coasting trade question suggested that coasting trade be limited to vessels of Canadian registry. The Canadian government is on record as having accepted the major recommendations of this report, and has informed Commonwealth countries of its intention to do so. In recent months however, proposals for the necessary legislative change appear to have watered down the original provisions very significantly.

RECOMMENDATIONS

- The Canadian coasting trade should be limited to vessels of Canadian registry; (see also 4.5.4.)
- All British Commonwealth ships which can currently enter Canada duty free should be subject to the 25 per cent duty applicable to other imports.

4.2.3 Offshore Drilling, Exploration, etc

A certain amount of drilling exploration work has been undertaken on both the Atlantic and Pacific Coasts and is proceeding in the Arctic. Certain concessions have been made for remission of duty on foreign built drilling ships brought into Canadian waters. Companies exploring and exploiting the natural resources of Canada should share the benefits with Canadian industry, and the shipbuilding industry should be given more opportunity to compete for business. Remissions should not be granted for drill ships or support ships until such opportunity has been clearly demonstrated.

RECOMMENDATION

- A mechanism should be established whereby Canadian suppliers of offshore exploration equipment be given more opportunity to compete with foreign suppliers of this type of equipment.

4.3 Arctic Shipping

In recent years the Canadian Coast Guard has developed Arctic pollution prevention regulations governing the construction of vessels to be used in the Canadian Arctic. Current activities in this area include:

- A recently completed 28,000 dwt Arctic Class 2 bulk carrier. This is the first bulk carrier constructed under these regulations. A problem exists in gaining shipping contracts for this vessel. Because of the limited amount of bulk cargo being transported from the Arctic at this time, extending the shipping seasons is not the most cost effective method of transport. A number of Scandinavian ice strengthened vessels designed and built for the Baltic winter season are available in the summer season at very low rates. These vessels can lift all the available cargo over the short Canadian season. Since the shippers are not concerned about overall Arctic transportation or long-term need, they naturally prefer this alternative.
- Beaufort Sea petroleum exploration by Canmar which is Dome Petroleum's drilling subsidiary. The Canmar fleet has a capital value of over (Can) \$250 million and consists of three ice strengthened drill ships, five Arctic Class 2 supply vessels, two drill barges and other incidental vessels. The company also had a Class 10 icebreaker designed. This vessel is intended to expand the drilling season and Dome/Canmar is studying construction proposals valued at approximately (Can) \$170 million.
- Petrocan combined with Melville Shipping Limited is proposing the transportation of LNG from Melville Island in the High Arctic to the Atlantic Seaboard by icebreaking vessels on a year-round basis. This study incorporates a pilot project including two 140,000 cubic metre LNG carriers, some large LNG storage barges and a floating LNG liquefaction plant with appropriate support systems including floating living accommodation.
- The government is continuing studies leading to proposals to construct an Arctic Class 10 icebreaker for the Canadian Coast Guard.

As these developments progress, there will be a very substantial demand for transportation of materials, equipment, service vessels, drill rigs, drill ships, barges - all designed to meet the challenges of the Arctic environment.

Thus the potential for business in the Arctic could be enormous. Expenditure for the proposed pilot LNG project alone has been estimated to range as high as (Can) \$800 million. The final potential, coupled with that for oil and other minerals could easily run to many billions of dollars over the next 10 to 20 years.

The Committee considered that an Arctic pilot project with an approximate value for shipbuilding and marine components of (Can) \$800 million is indeed far more than a pilot project. Great concern was expressed that if the first of these vessels are procured offshore, all others will follow as the country which builds the

first true Arctic class vessels will have a significant lead over all others.

If Canada does not act now to protect its resources and optimize industrial benefits, other nations will take advantage of the resources and the industrial opportunity.

RECOMMENDATIONS

- Suitable long-term (10 to 15 years) industrial policy should be defined in relation to Arctic development so that all parties involved may be aware of the ultimate policy requirements and are able to take full advantage of long-term future;
- To increase domestic workload available to Canadian shipyards, all Arctic class vessels for natural resource transportation and exploration in Arctic regions should be built and registered in Canada;
- Government to consider raising the level of subsidy for strengthened vessels as an offset for the reduced need for government icebreaker services resulting from the use of such vessels;
- Immediate action be taken to consider government assistance in response to proposals by some yards regarding facilities for the construction and repair of large Arctic vessels;
- The government examine whether it is appropriate to continue to classify drill ships as drilling equipment liable to 10 per cent duty, as distinct from the 25 per cent which normally applies to ships.

4.4 Great Lakes Fleet

The Canadian Great Lakes fleet comprises approximately one and a half million gross tons of specialized bulk carrying vessels.

A number of studies and briefs have been presented in the past few years highlighting the need for the continuation of this most efficient transportation system.

While methods have been used to encourage Canadian shipyards to export ships, conditions of financing for domestic ships have not been equitable. The growth rate in the Great Lakes fleet will depend on the growth in the economy of central Canada and northern United States. Great concern has been expressed at the large number of vessels (usually old vessels) which have been imported into Canada and placed under the Canadian flag, and used in competition on the Lakes. In deciding whether a vessel can obtain Canadian registry the government appears to be concerned only with the safety aspects of the ship, and does not evaluate the economic impact of the proposed entrant on the welfare of the Canadian shipping and shipbuilding industries.

During 1977 a total of 30 vessels, of total gross tonnage of 164,514 were imported making accumulative imported tonnage in the years 1975-77 of 392,000 gross tons, of which the majority was used on the Lakes.

A requirement exists in the future of Lake shipping for large captive vessels in the Upper Lakes system. On the United States side some of these vessels are already in operation, and at least 10 are committed for construction. With the introduction of these highly efficient ships, trade competition becomes fiercer and if Canada does not take the necessary action to ensure that Canadian operators can likewise produce and maintain such vessels, then a very serious reduction in our competitive ability will surface in about five years' time.

If present trends continue, smaller and older United States vessels will become superfluous and will be sold into Canada, again to compete in the balance of trade remaining for the Canadian vessels. This is a very serious long-term problem associated with the Great Lakes fleet. (See also para. 4.5.4.)

Attention is drawn here to an earlier reference to proposed coasting trade legislation. A further element of this proposal actually removes some of the protection now offered to coasting shipping, applying in areas between Anticosti Island and Thunder Bay.

RECOMMENDATIONS

- The government allow no relaxation of current coasting trade regulations as they apply to Great Lakes;
- Immediate action to consider government assistance in response to proposals by Great Lakes yards regarding facilities for the construction and maintenance of 1,100 foot vessels. (See para 4.5.4.)

4.5 Other Sector Related Issues

The following issues and recommendations relate to all market areas defined earlier in this paper.

4.5.1 Ship Repair

Much deep-sea repair work is currently being turned away from Canadian yards due to the lack of adequate dry dock facilities. While the industry is unable to absorb the full capital outlay necessary to exploit the full potential of this business at an acceptable level of return, assistance towards the construction of these new facilities from governments on a one time basis could set up ongoing operations of a viable nature.

RECOMMENDATION

- The government provide special capital assistance leading to ongoing unsubsidized business in the deep-sea repair work.

4.5.2 Financial Stimulants for Canadian Shipping and Shipbuilding

a) Shipbuilding

There are currently two elements of the subsidy program from which the industry benefits. These are the present temporary direct subsidy of 20 per cent of audited costs of producing vessels built in Canada, and the additional 3 per cent of audited costs which when matched by an equal contribution from the yard, are available as a productivity improvement grant for yard modernization.

While the need for the subsidy program receives attention in a number of places in this report, the Committee did not see any evidence that world markets are changing to the extent that a lower rate of subsidy, as existed in 1976, would be of any help to the industry at this time. In noting that the current level of 20 per cent is only valid until the end of October 1978, the Committee strongly recommends that this level be continued for at least a further two years.

The productivity element of the Shipbuilding Industry Assistance Program is an important contributor to shipyard modernization programs and should continue.

b) Shipping Industry

The Committee viewed and discussed the joint brief presented to the federal government by the Council of Marine Carriers, the Dominion Marine Association, the Newfoundland Shipowners Association and the St. Lawrence Shipowners Association.

If government shares the shipping industry's objective to combat obsolescence in existing fleets, and to expand by building modern competitive ships for selective trades, special operating subsidies will not be required, however some stimulants will be needed. These are: debt financing, lease financing, greater flexibility of capital cost allowance, tax deferral for vessel replacement purposes, market protection, protection from excessive technical requirements.

RECOMMENDATIONS

- The government's Shipbuilding Industry Assistance Program continue to offer assistance at the rate of 20 per cent for at least a further two years beyond its current expiry date;
- Government accept the recommendations of the joint committee of shipowners with regard to debt financing, lease financing, greater flexibility of capital cost allowance, tax deferral for vessel replacement purposes, market protection and protection from excessive technical requirements.

4.5.3 Scrap and Build

Many Canadian Shipowners own and operate obsolete ships which should really have been scrapped years ago because of their low safety standards, inadequate crew accommodation, poor fuel efficiency, air and water polluting characteristics. The only reasons why such ships still ply our inland water system are: a) their low or nil book value and b) the inability of their owners to raise the funds necessary for their replacement.

A program could be established whereby any Canadian shipowner having a ship at least 15 years of age and of which it has been the rightful owner for at least 5 years could obtain a loan, or a loan guarantee, of 95 per cent of the cost of a Canadian built replacement vessel of equivalent tonnage. Several small vessels could be scrapped and be replaced by one new vessel of the equivalent aggregate tonnage. The scrap recovery on the old vessel or vessels would not be treated as recaptured depreciation but would go towards reducing the capital cost of the new vessel and be applied in reduction of the down payment required.

This would help modernize the fleet without creating a glut of new capacity which would otherwise arise out of any program which would encourage new shipowners to establish themselves at the expense of all the established owners now operating. It would create a new demand which would go a long way towards providing the necessary support for the ailing shipbuilding industry.

RECOMMENDATION

- The government seriously consider the introduction of a scrap and build incentive program along the lines referred to above.

4.5.4 Importation of Used Ships

The increased importation of used foreign ships since 1974, during a period when Canadian shipyards face severe layoffs due to the collapse of the international market and uncertainties in the domestic shipping market, is seen by industry in some measure as a result of the federal government's divided perspective of Canada's maritime industries, as reflected in the division of maritime responsibilities within the organization of government.

It was particularly noted by the Committee that most vessels recently admitted to Canadian registration were to engage in trades which traditionally utilize modern Canadian built vessels. It was also noted that in recent years response from the Transport Department to the effect that restrictive policies on ship importation would affect the competitive position of Canadian shipping, did not have the support of most major Canadian shipping concerns. The matter of the age of imported vessels being accepted for Canadian registry is also of concern.

The present trend which allows old and inefficient foreign built vessels, which may not pass, for example, United States safety standards, to enter Canadian registry, appears to reflect a peculiarly shortsighted policy, based solely on short-term economic gain, and will contribute to the aging of the fleet.

RECOMMENDATIONS

- That the procedures for admitting foreign built vessels to Canadian registry be revised by requiring that all such applications be submitted to an agency, committee or via a process of consultation, which would include input from the Department of Industry, Trade and Commerce, and that the criteria to be used for approval should include not only an appraisal of the safety of the vessel, but an evaluation of the economic impact of the applicant vessel on Canadian shipping and Canadian related trade, as well as the industrial development impact on the Canadian shipbuilding industry. Ships over 10 years old should be prohibited from importation for use in the coasting trade;
- All British Commonwealth ships which can currently enter Canada duty free should be subject to the 25 per cent duty applicable to other imports.

4.5.5. Human Resources

It is in the national interest to promote Canadian skill development processes in order that a source of suitably trained people be available to the shipbuilding and repair industry, and that Canadians enjoy the maximum benefits of the available employment.

While the Committee expressed concern about the shortage of professionals trained in Canada, particularly naval architects and marine engineers, most of its deliberations concerned the question of the availability of skilled manpower.

A set of recommendations developed as a result of ideas and suggestions put forward by members is included with this paper as Appendix 2. Time did not permit a full debate on these recommendations in the Committee's deliberations, although they were endorsed in general terms.

RECOMMENDATION

- That the personnel section of the Canadian Shipbuilding and Ship Repair Association, in conjunction with the Departments of Industry, Trade and Commerce, Manpower and Immigration, Labour, and with representatives from provincial governments and trade unions address Appendix 2 of this report and develop from it an action plan for a policy with respect to the training and development needs of the Canadian shipbuilding industry.

4.5.6 Research and Development

The level of R & D in shipbuilding carried out by industry and government is very low. Some activity is underway. For example, the opening of the British Columbia Research towing tank facility on the campus of the University of British Columbia effectively doubles Canadian capacity with respect to facilities offering a commercial towing tank service. In addition, facilities exist at Memorial University, St. John's, Newfoundland, and the University of Montreal, however these are not operating commercially at the present time.

Nevertheless in important areas, particularly technological activity related to Arctic shipping design, fishing vessels and 1,000 foot Lakers, R & D is relatively minimal, and there is concern that foreign competition is moving ahead of us.

The subject was not widely discussed during the Committee's deliberations, nevertheless two recommendations are offered.

RECOMMENDATIONS

- Government incentive to further R & D both through direct programs and tax incentives are important and must continue, with particular priorities being R & D related to Arctic shipping design, fishing vessels and 1,000 foot Lakers;

- In its consideration of proposals to expand or initiate new R & D facilities, including towing tanks, the federal and provincial governments should take into consideration existing facilities, the demand for services, and the potential benefits which may accrue from having research facilities located in close proximity to centres of learning related to the Maritime industries.

4.5.7 Government Procurement

During the present period of international crisis in the shipping and shipbuilding industries, it is clear that the Canadian shipbuilding industry must rely primarily on the domestic market for its continued effectiveness. Federal government procurement represents a significant element of this market projected.

The procurement policy of government must be recognized as an integral part of industrial strategy. This being the case, the objective of maintaining Canadian shipbuilding at a reasonably stable level of employment requires the commitment of government to a policy of purchasing all government vessels in Canada, including those purchased by Crown Corporations.

RECOMMENDATIONS

- The federal and provincial governments including their agencies and Crown Corporations procure all ships from Canadian shipyards.
- In view of the serious lack of government shipyard work as projected by the federal government in its latest forecasts, government operating departments and agencies should advance procurement plans, and obtain the necessary funding approvals.

4.5.8 The Marine Products and Services Industry

While recognizing that the Committee was not asked to address the concerns of the marine supply industry, the Committee wishes it to be noted that the strength of the marine suppliers industry is dependent upon, but not totally tied to, the Canadian shipbuilding industry. The most aggressive companies are actively pursuing export orders and their foreign sales can account for a very large proportion of orders in some years. However, the stronger the home market in shipbuilding, the greater will be the ability of marine suppliers to compete in world markets. It is of paramount importance that consideration be given to maximum use of Canadian designed and manufactured equipment in Canadian-built ships.

The Canadian marine products and services industries suffer from many of the same problems as the shipbuilding industry itself, and therefore could be assisted by many of the same proposed remedies.

RECOMMENDATIONS

- Government to maximize Canadian content in departmental and Crown Corporation vessels;
- Government to ensure maximum Canadian content in Canadian financed vessels;
- As much as possible, equipment for Arctic Class vessels should be manufactured in Canada.

4.5.9 Continued Consultation

The Committee expressed a wish to continue with the kind of forum through which the recommendations in this report were generated, albeit with less frequency than the four meetings in three months demanded on this occasion. It was agreed that one or two meetings per year would provide an excellent opportunity to air problems, and further develop a number of issues, including some of those

raised in this report.

RECOMMENDATION

- The Department of Industry, Trade and Commerce to organize a continuation of a sector committee for the shipbuilding industry, to include labour and provincial government membership.

A. A. McArthur
Chairman

LIST OF APPENDICES

1. Department of Industry, Trade and Commerce Sector Profile.
2. "Shipbuilding and Repair, Skilled Manpower Requirements and Training"
A short paper endorsed in general by the Committee, but referred for more detailed study at a later stage. (See para. 4.5.5.)
3. List of Members Participating in Task Force.
4. Minority Report by Mr. J.R. Mills, representing the Government of Nova Scotia.

APPENDIX 2

SHIPBUILDING AND REPAIR SKILLED MANPOWER REQUIREMENTS AND TRAINING

With a reasonably favourable optic on the future, the industry will have a stable employment at about the present level. There is now no general shortage of skilled labour. Over the near future, however, the industry will face important problems of replacing its skilled labour as it leaves through retirement and to other industries.

As have others, the industry has for long relied on an inflow of tradesmen from abroad to supplement the Canadian supply. This is now drying up. The existing work force is an ageing one. The industry will soon confront the general short-supply of skilled labour that is foreseen for the economy as a whole.

Over and above this, the industry has several distinct characteristics which affect the availability to it of skilled manpower:

- (a) Considerable numbers of skilled workers trained in the industry are traditionally siphoned off to the construction trades and to other industries such as the automotive industry, where higher wages and less arduous working conditions prevail.
- (b) The peaks and valleys in business, both for the industry as a whole and for individual companies, result in discontinuities in the employment of its skilled work force; at one time or another tradesmen are not where the work is; greater assurance of continuity of employment elsewhere is an inducement out of shipbuilding.
- (c) The long history of skilled trades in the industry has given rise to a situation of fairly narrow and rigid job classifications and work practices which act as impediments to an effective and uninterrupted employment of the existing skilled work force. Because of the movement of tradesmen out to other sectors, the industry is not well placed to itself assume the costs of training. Individual employers naturally find it difficult to justify this investment which they have little assurance of being able to keep for long to their own benefit.

RECOMMENDATIONS

1. The federal and provincial governments should re-examine their approach to, and funding of manpower training to ensure that sufficient priority is being given to meeting the anticipated needs of the shipbuilding industry, and of the economy in general in the 1980's, for skilled trades of the right kinds and competence.
2. Provincial programs should give more emphasis to
 - (a) manual dexterity in skill training, and,
 - (b) endowing the courses with the requisite equipment for this purpose.

RECOMMENDATIONS (continued)

3. There should be closer continuing contact between provincial training institutions and employers in the industry to ensure that the right numbers of trades, of the right competence and technological proficiency, are being trained. As first steps in this direction the industry should, consider:
 - (a) developing an inventory of the existing skilled work force (by trade, age and location) and,
 - (b) establishing a working group to develop, with the unions and provincial training institutions, the terms of an apprenticeship program for the industry.
4. There should be a recognized apprenticeship program for the industry. Such a program should be closely integrated with provincial training programs, with the total training for the individual extending over two to four years, depending on the skill and being roughly equally divided between off-site pre-apprenticeship training in institutions and on-site training.
5. The industry should receive training grants to meet the short and long-term requirements of skilled manpower, until such times as a workable national apprenticeship system has proved worthy.
6. The on-site training programs of employers should make provision for the re-training and upgrading of the existing employees.
7. An income subsidy should be paid by the government when recognized training or retraining is conducted on the job.
8. Recognizing that all yards may be able or willing to mount on-site training schemes, the industry should give consideration to a collective scheme, (along the lines of that run in the United Kingdom), under which all yards are assessed a fee to support the training schemes operated in a few yards for the benefit of the industry as a whole.
9. To promote mobility of skilled labour within the industry:
 - (a) the federal program of manpower mobility assistance should be extended to provide suitable assistance to enable tradesmen to move from one locale to another on a temporary basis, and without having to uproot their families, pending assurance that the new job is a continuing one or for purposes of adjusting to short-term situations of shortage and surplus of skilled manpower in different parts of the country, and
 - (b) provincial governments should, in collaboration with the industry and the unions, review their programs and practices of trades certification with a view to eliminating any barrier to inter-provincial mobility these may involve.
10. Employers and unions in the industry should re-examine their present system of job classification and work practices and consider devising a system at the local level which would permit more cross-trading and composite crew work, with a view to encouraging a more effective, versatile and uninterrupted employment of the existing work forces.

APPENDIX 3

LIST OF PARTICIPANTS

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APPENDIX 3 (continued)

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APPENDIX 4

MINORITY REPORT
BY
MR. J.R. MILLS
REPRESENTING THE GOVERNMENT OF NOVA SCOTIA

Mr. J.R. Mills, although agreeing with most of the Report as drafted by the majority of those on the Task Force, has certain reservations, which he has asked be put on record. These follow.

Under 4.1, Fishing Fleet, Mr. Mills wishes to have the second recommendation deleted and replaced by the following:

"--Government provide a subsidy to the shipbuilder for fishing vessels over 75 feet in length and at a rate of 35 per cent."

He states: "Our reason is that the foreign competition we are aware of requires such a subsidy being paid in order to maintain a viable shipbuilding industry in Nova Scotia."

Under 4.2.2, Coastal Shipping, Mr. Mills states that his government cannot agree to the recommendations, as presented in the majority report, "without prior agreement on the safeguards that are currently under negotiation between the Ministry of Transport and the Atlantic Provinces."

The following profile of the Canadian Shipbuilding and Repair Industry was developed by the Sector Task Force on the Canadian Shipbuilding and Repair Industry from a profile prepared by the federal Department of Industry, Trade and Commerce.

SECTOR PROFILE

**THE CANADIAN SHIPBUILDING
AND REPAIR INDUSTRY**

THE CANADIAN SHIPBUILDING AND REPAIR INDUSTRY

At mid-1977, Canada's shipbuilding industry employed approximately 14,000 persons and consisted of approximately 60 establishments. There are shipyards in all provinces except Saskatchewan. Production in each of the years 1975 and 1976 was valued at approximately \$575 million, of which an estimated \$400 million represented construction of new ships, \$100 million ship repairs and the balance in non-marine procurement including railway cars, hydroelectric equipment, etc. Due largely to export orders, production has grown from \$233 million in 1970. (Figures are in current dollars, and reported by Statistics Canada for SIC 327.)

The industry is largely Canadian owned. While it contributes only 0.2 per cent to the nation's gross national product, it is significant in regions of slow growth, particularly the Atlantic Provinces and Quebec. It accounted for 0.57 per cent of manufacturing exports in 1975, ranking 32nd in that category. Persons directly employed in shipbuilding and repair represent about one per cent of total manufacturing employment. Average Canadian content of ships built in Canada varies between 60 per cent and 80 per cent of the total cost. Material represents, on the average, between 35 and 45 per cent of the cost of a vessel, depending on type. Direct labour usually represents more than 35 per cent and overhead more than 20 per cent.

Possibly 4,500 other Canadians are employed in the manufacture of materials and components used in shipbuilding. Although most of the ships built for export have, for various reasons, included foreign steel and components, the industry used materials and supplies valued at more than \$250 million in each of the past two years. A substantial portion of these purchases were made in Canada. (To receive subsidy the shipbuilder must source in Canada to the greatest extent practicable).

Historically, the industry has existed to serve the Canadian market for government, commercial and fishing vessels. During the period 1971-75 there was a surge in demand for ships throughout the world and the Canadian industry, with the help of subsidies, was successful in penetrating the foreign market to the extent that 70 per cent of tonnage built in 1974-76 was exported. With the slump in world markets the Canadian industry must now rely on traditional domestic customers. Possibilities for further export orders are limited to exceptional cases where there is an internationally competitive combination of price, delivery and easy credit terms.

The industry is experiencing the effects of the world slump. Employment is now down by 20 per cent from the peak of 17,000 reached in late 1975. The order book position for the industry, illustrated by the following table, shows a sharp decline in 1977 and 1978 from the level of the three previous years. Although the order book shows 14-18 months work on hand as of June 1, 1978, a short-term problem exists:

- Available work is not evenly distributed. Some yards have substantial work ahead, while others are almost without future business.
- A large ship takes a year to build. Thus, steel tradesmen can be facing massive layoffs, in areas where alternative employment may not be available, though there is substantial work in hand for the fitting-out trades.

TABLE 1
ORDER BOOK POSITION OF CANADIAN SHIPBUILDERS
1972-1977

	1972	1973	1974	1975	1976	1977	1978 (5 mos.)
On order Jan. 1	390,114 (50)	392,803 (88)	573,064 (80)	613,155 (78)	798,942 (78)	457,809 (46)	392,237 (60)
Cancellations	0	0	0	0	122,770 (7)	23,670 (2)	1,125 (3)
Completed	115,851 (53)	274,628 (133)	228,773 (76)	193,526 (59)	253,608 (50)	175,341 (28)	79,099 (18)
New orders received	118,540 (91)	454,889 (105)	268,864 (74)	379,313 (59)	35,245 (25)	133,439 (44)	25,708 (12)
On order June 1/78	—	—	—	—	—	—	337,721 (51)

Notes: In each case, open figure is gross registered tons. Figure in brackets is number of ships. Figures compiled from records of Ships and Components Division, Industry, Trade and Commerce

INTERNATIONAL ENVIRONMENT

During the period 1963-1975, world shipbuilding capacity increased five-fold, and approximately 35 million gross tons of new commercial vessels were delivered in each of the years 1974-1976. However, ship orders peaked in early 1974 when the world's shipyards had almost four years production on the books. The 1973 oil crisis had led to a reconsideration of shipping needs and resulted in a serious decline in new orders and cancellation of many existing orders. By January 1, 1978, orders on the books had fallen to 37 million gross tons (according to Lloyd's Register). Canada's share of this order book was 392,000 tons, approximately 1 per cent of the world total, which is in line with our share of recent new construction. About 20 countries rank ahead of Canada in terms of tonnage delivered in recent years.

Figures published by OECD for Japan and the European countries of W.P.6 reported the following order book as of December 31, 1977, with Canadian figures from Industry, Trade and Commerce records (in thousand gross registered tons).

TABLE 2

	Ships on order December 31, 1977	Scheduled for delivery in		
		1978	1979	1980
Japan	9,241	7,043	1,617	580
Europe (W.P.6)	12,884	8,540	3,593	589
Canada	392	205	163	24

It is evident from these figures that yards in Europe and Japan urgently require new orders if they are to minimize layoffs now taking place. In the light of today's market, existing capacity will continue to exceed new orders for several years. Excess of supply over demand includes all sizes of ships, as yards specializing in large tankers were forced to accept orders for smaller vessels.

There are various forms of government assistance in virtually all major shipbuilding countries. In the United States, under what is usually called "The Jones Act", all internal waterborne trade must be carried in U.S. built ships; this includes the potentially large volume of traffic in oil from Alaska to the lower 48 States and, in effect, means that the shipyards are subsidized by consumers of waterborne goods. Only ships for international trade receive construction differential subsidies (currently, 50 per cent). In Britain, all shipyards engaged in new construction have been taken over by the Crown and are being heavily subsidized to obtain new orders. For example, a £115 million order for Poland was recently obtained only after the government had promised £28 million in subsidy to enable British Shipbuilders Corporation to offer a low enough price. France claims to have abolished ship construction subsidies, but a program of escalation insurance, in effect for several years, has been

worth the equivalent of up to 30 per cent subsidy in some cases, and cost the French treasury one billion francs in 1975. Finland obtained some recent export orders only because the central bank will accept payment in foreign currency at arbitrary rates of exchange. Norway blends aid with trade to sell ships at a discount to developing countries. Despite the efforts of W.P.6 of OECD, the variety and amount of shipbuilding assistance is increasing throughout the world as governments face the prospect of massive shipyard layoffs at a time of low alternative employment.

THE CANADIAN ENVIRONMENT

Canada has a substantial merchant marine, close to three million tons, but more than half the ships are designed exclusively for service on the Great Lakes–St. Lawrence Seaway system. Most of the remainder are in coastal service in British Columbia. Relatively few Canadian flag vessels trade on the world's oceans. For several reasons, some related to income tax and crewing costs, Canadian shipowners prefer to operate through subsidiaries in Bermuda or elsewhere — for example, Canadian Pacific owns and operates approximately two million tons of modern ships under Bermuda or British flags and all built in foreign shipyards.

The Ministry of Transport is studying various options for ocean transportation. Two of the possibilities are, respectively, Canadian flag, Canadian built ships and Canadian flag, foreign built ships. The results of the study have not been released but it would appear that in spite of the present rate (20 per cent) of subsidy, the "Canadian built" option may be less attractive than others, if only the cost and benefit of ship operation is taken into account, rather than the overall effect on the Canadian economy.

There is a strong expectation that navigation in the Canadian Arctic can, by legislation or regulations, be reserved for Canadian flag shipping. However, this will not necessarily mean Canadian built ships, as the size of ship discussed for the Arctic is larger than any built in Canada to date. The size is in the range for which the greatest excess building capacity now exists in Asia and Europe.

On the Great Lakes and along the West Coast, most of the ships are Canadian built. Despite a recent surge of low priced imports, these two markets will probably continue to be served by Canadian shipbuilders, who have developed special expertise in the types of vessels most suited for these services. In the medium term there is concern within the shipbuilding industry that U.S. government incentives to construct new vessels, coupled with the current Canadian policy of easy admission to Canadian registry of foreign built vessels, will result in older U.S. lakers entering the Lakes trades at low prices.

Naval vessels are a special category. All Canada's surface warships, including the three large supply vessels, are Canadian built and it is reasonably probable that future frigates and patrol craft will be built in Canada. Apart from national prestige considerations, this permits the Navy to custom design the exact type of ship to meet its requirements (in contrast to accepting warships built in other countries).

FACTORS DETERMINING SALES (NEW CONSTRUCTION AND SHIP REPAIRS)

Typically, a shipowner decides to buy a ship only after he has established that there is potential cargo (or other use) at rates that justify the proposed investment. His staff, or a naval architect, will draw up a performance specification, sometimes a detailed specification, and will invite bids from selected shipyards. Unless there are political or other considerations restricting the country of build, all substantial enquiries will be circulated internationally. A typical response might involve tenders from ten shipyards in half a dozen countries.

The owner — or his representative — in reaching a purchasing decision must take into account such factors as:

- the reputation of the shipyard for quality, etc.
- price, including any duty and/or taxes and/or delivery costs
- terms of payment
- special factors, such as willingness of the shipyard to use owner supplied components
- delivery.

Ship repairs fall into two general categories, routine and emergency. The latter are often directed toward the repair facility that is closest to the location of an accident but in both categories the following factors are taken into account by the shipowner:

- price quoted, plus customs duties if applicable
- cost of downtime for the ship, including not only time under repair but also steaming time from and to its normal station
- reputation of the shipyard
- proximity of shipyard to the ship's home base.

RATIONALE FOR SUPPORTING THE SHIPBUILDING INDUSTRY

Canada was a major wartime supplier of cargo vessels and small warships. During the cold-war days of the 1950s, there was a strong belief that the industry should be kept in existence for national security reasons. The motive is frequently invoked in the U.S. Congress for supporting shipbuilding in that country. This motive is cited less often in Canada and other reasons are given to justify continuing support. They include:

- shipyards located in such places as Lauzon and Sorel, in Quebec; Marystown, Newfoundland; Saint John and elsewhere in the Maritimes, are valuable creators of employment in localities where alternative job opportunities may be lacking;
- as a major trading nation, Canada must have adequate ship repair facilities adjacent to its major ports. It is generally considered advisable for such facilities to also engage in new construction, in order to maintain an adequate pool of skilled tradesmen;
- a domestic shipbuilding industry produces secondary industrial benefits, materials and components in the industry;
- there is an element of national prestige in having a shipbuilding industry, particularly one with the capability to build warships and vessels for asserting sovereignty in the Arctic.

COST OF SUPPORT

Various fiscal incentives existing in the 1950's and 1960's have been revoked. The only forms of federal government assistance to the shipbuilding industry are:

- direct subsidies, payable to shipyards building for domestic or export customers (see Appendix 3);
- government procurement of warships, icebreakers, etc., which have invariably been built in Canadian shipyards;
- financing, through Export Development Corporation and, occasionally, CIDA to promote export orders;
- a higher rate of capital cost allowance to Canadian shipowners buying from Canadian shipyards; and
- direct assistance to the shipyards under DREE, IMDE, and other government programs.

For the fiscal year 1976/77, the federal government disbursed \$68 million in subsidies to maintain slightly more than 10,000 persons employed in building new ships (the remaining one-third of the industry's total employment was engaged in ship repairs and other non-subsidized work). As there was little construction underway for government account (chiefly, the R-Class icebreakers), indirect subsidy through higher procurement costs was insignificant. Export Development Corporation policy is to make loans at interest rates high enough to cover costs, so there is no subsidy from this source, and no CIDA orders were placed during the year.

It should be noted that ship construction subsidies totalling \$40.5 million were paid during the fiscal year 1965/66 when the rates of subsidy were 50 per cent on trawlers and 40 per cent on commercial vessels. In terms of constant dollars, this is above the amount paid in 1976/77.

HISTORICAL RECORD OF NATIONAL EMPLOYMENT AND PRODUCTION

TABLE 3
EMPLOYMENT AND VALUE OF PRODUCTION, 1965-1976

Calendar year	Average employment	Total production	New construction	Ship repair
		— \$ Million —		
1977	13,800	645	N/A	N/A
1976	15,400	575	400	100
1975	16,344	572	400	98
1974	14,725	469	311	92
1973	15,062	363	226	71
1972	14,647	332	232	52
1971	13,259	264	120	56
1970	13,790	232	92	54
1969	15,183	260	131	52
1968	15,660	264	154	59
1967	18,929	286	160	64
1966	19,942	294	139	56
1965	18,586	275	130	57

Source: Statistics Canada 42-206 except 1977, from Statistics Canada 31-001 and 72-002.

Note: The residual figure, obtained by deducting new construction and ship repairs from total production includes several adjusting items. While the residue is an indication of non-marine activity, the adjusting items must be considered.

STRUCTURE AND CONTROL

Of the approximately 60 establishments in the industry, the four largest account for almost half of total employment and value of production; the 14 largest (listed in Appendix 1) represent about 86 per cent of total employment and output. Most of the companies in this sector are subsidiaries of large diversified corporations. Seven of the 14 largest shipyards are either associated or vertically integrated with corporate shipping operations. Three are owned or controlled by provincial governments (Quebec, Newfoundland and Prince Edward Island). Eighty-five per cent of the industry is Canadian owned. Canadian Vickers Limited and Halifax Shipyards are controlled by parent companies located in Britain; these and a few establishments that are U.S. controlled represent 15 per cent of the industry by employment and value of production.

THE INDUSTRY BY REGIONS

As noted above, one of the major reasons justifying government support of the industry is that shipbuilding is located chiefly in areas of low alternative employment. This is particularly so in Quebec and the Atlantic region. It should be noted that, even in Ontario, over half the total employment is well away from the industrial south.

ATLANTIC

Statistics Canada lists 18 establishments in the Atlantic region; of these, only five are large enough to be shown in Appendix 1. The value of production and repair work in 1974 amounted to approximately \$135 million and represented 29 per cent of the Canadian total. Employment in the same year averaged 4,300 or 29 per cent of the industry's total.

The major shipyard at Saint John now specializes in product carriers but can produce a wide variety of ship types, from fishing boats to naval vessels, and is currently one of the two yards considering building large vessels for use in the Arctic.

Shipyards at Halifax and St. John's, and smaller yards in this area, are particularly well sited for repair work on all types of ships plying the North Atlantic. All could increase their repair business if they had improved dry dock facilities. The amount of the potential increase has been estimated as equivalent to approximately 600 man years of work each year. Smaller shipyards in this region while specializing in construction of fishing vessels can also build tugs, patrol boats and other small ships. These, and the above mentioned, are among the yards which could benefit most from the new 200 mile limit.

There has been a significant degree of support from the various provincial governments, which consider shipbuilding an important creator of employment. To some extent, the shipyards are regarded as schools for training welders and other tradesmen. An incidental benefit to this region will be the establishment of marine-oriented courses in the faculty of Engineering and Applied Science at Memorial University; this project is being encouraged by the department, as a high percentage of naval architects and technicians now are recruited abroad.

QUEBEC

There are three major shipyards in Quebec. The value of production and repair work in 1974 amounted to approximately \$155 million and represented 33 per cent of the Canadian total. Employment that year averaged 4,900 or 33 per cent of the industry's total.

Quebec's two largest shipyards have been heavily engaged in export work since 1971 and have delivered 12 tankers and 15 cargo vessels to foreign owners. A third major shipyard, Canadian Vickers, abandoned new construction in 1969 and since has operated as specialists in ship repairs, benefiting from its location at the eastern extremity of the St. Lawrence Seaway.

In the future, Canadian Vickers, and several small yards will continue their repair activities; DREE is providing a new dry dock at Les Mechins for a small shipyard. At Quebec City it is possible that one of the existing dry docks will be enlarged. This could result in increased repair business for Davie as the dry dock at Lauzon can handle ships larger than those which can be docked anywhere else in Eastern Canada except Saint John. Some of the larger ships entering the Port of Quebec are too big for even its dock.

The major questionmark in Quebec is the future of new construction at Davie and Marine Industries. Both have concentrated on export business and have lost their former shipowning associates, which provided captive markets. They are now seeking new business in Africa and Asia. Davie has the potential to construct ships for the Arctic, if its existing facilities are expanded. Marine Industries is located on the Richelieu River and cannot handle ships of more than 20,000 tons.

ONTARIO

There are three major shipyards in Ontario. Value of production and repair work in 1974 amounted to \$56 million and represented 12 per cent of the Canadian total, while employment averaged 2,000 or 14 per cent of the industry's total.

The two largest yards specialize in building self-unloading bulk carriers of the maximum size permitted in the St. Lawrence Seaway. They also build other types for ocean and freshwater service. It is almost certain that Canadian shipowners will soon follow the lead of U.S. owners and order ships for use on the upper Great Lakes, with a carrying capacity about double that of Seaway-size vessels. There will be a captive market for whichever yard first installs the new facilities required. However, the other yard will continue to have substantial repair business and there will still be at least some demand for smaller ships, including ferries and product carriers. Port Arthur specializes in repairs and occasional major conversions, and will continue these specialized activities.

Several small yards build cruise boats and other small vessels and will continue in this specialized field.

BRITISH COLUMBIA

Statistics Canada lists 22 shipbuilding and repair establishments in B.C., but slightly more than half the total activity is contributed by the three biggest yards which are listed in Appendix 1. Value of production and repair work in 1974 amounted to \$123 million and represented 26 per cent of the Canadian total. Employment averaged 3,400 in 1974, representing 24 per cent of industry total. It is now 2,200.

Yards of all sizes build chiefly for the local market which includes ferries for the B.C. government and large, sophisticated vessels for wood products companies. At present, Burrard Dry Dock is building two medium-sized icebreakers for the federal government.

TABLE 4
EMPLOYMENT BY REGIONS, AT RECENT DATES (THOUSANDS OF PERSONS)

Region	1974 Sept.	1975 Sept.	1976 March	1976 Sept.	1977 March	1977 Sept.
Atlantic	4.4	5.1	4.5	4.5	3.8	4.0
Quebec	5.2	5.8	5.8	5.7	5.2	5.5
Ontario and Prairies	2.0	2.5	2.5	2.1	2.1	1.7
B.C.	3.0	3.4	3.5	2.4	2.1	2.6
Canada	14.6	16.8	16.3	14.7	13.2	13.8

Source: Statistics Canada 72-002

There is considerable difference between wage rates in B.C. and those paid elsewhere in Canada. This is only partially compensated by better weather conditions on the West Coast (yards in Quebec, particularly, cannot maintain peak productivity during cold weather).

TABLE 5
HOURLY WAGE RATES, CANADA AND REGIONS

		B.C.	Quebec	Atlantic	Canada
November,	1977	10.00	7.74	6.63	7.72
November,	1976	8.75	6.95	6.37	6.91
November,	1975	8.42	6.32	5.60	6.41
November,	1974	7.04	5.32	4.85	5.47
November,	1973	6.02	4.63	4.40	4.82
November,	1972	5.43	4.18	3.89	4.32

Source: Statistics Canada 72-002

Note: Wage rates for Ontario are not published.

Wage rates in all regions largely reflect competition from the construction industry which requires many of the same trades, i.e. welders, electricians, etc. A study of comparative wage rates shows that those in the construction industry are generally higher than in shipbuilding, thus it is pressure from the construction industry that has resulted in the pattern of wage rates shown above.

A continuing deterioration in the competitive position of Canadian shipbuilders against those in the U.S. is indicated by a comparison of wage rates with those paid by shipbuilders in the United States. Until 1974 Canadian rates were well below those in the U.S. In that year, the average rate in Canada was \$5.03 against \$4.98 in the U.S. The most recent figures available (November, 1977) shows \$7.72 in Canada against \$6.58 in the U.S.

Canadian wage rates over the medium term are becoming more competitive with those in the traditional shipbuilding nations in Europe. However, it is noted that many developing countries (e.g. Brazil, Korea) are expanding their shipbuilding industries.

SPECIALIZATION AND DIVERSIFICATION

There are significant advantages in series production of the same general type and size of vessel. During the period of abundant orders, several Canadian yards benefited from specialization: for example, Davie and Saint John built chiefly tankers while Marine Industries received orders for 21 similar cargo ships, and Halifax devoted its efforts to construction of oil drilling rigs. Unfortunately, the depressed state of the market does not present the same opportunity to be selective and most Canadian yards are seeking whatever work is available, regardless of the type of ship.

However, with potential growth markets in Arctic shipping, Navy ship replacement, Great Lakes vessels, patrol vessels and ship repair, specialization appears to provide the best opportunity to capitalize on these markets.

An increased volume of non-marine work must be found to utilize excess production capacity in some establishments. Management generally is aware of this need but faces a twofold problem:

- as there is a substantial capacity in heavy engineering, car-building, etc., the shipyards must compete with other Canadian establishments which are serving these markets, and orders will not be easy to obtain;
- because shipbuilding is labor intensive non-marine work does not provide as many man-hours per dollar of orders and present employment levels will be difficult to maintain should the shipyards diversify out of the marine field.

PRODUCTION TRENDS

The value of production per employee increased during the period 1969-70 to 1975-76. However, production levelled off in early 1976. As there has been a sharp drop in the number of persons employed in the industry — from a peak of 16,500 in the second half of 1975 (monthly average) to 13,500 at the beginning of 1977 — it is possible that the value of industry output in 1978 will be below the level of the three previous years, in current dollars, and that actual production probably will be well below the record set in 1975.

If this trend continues, there are serious implications for the viability of some firms in the industry. This suggests that it would be beneficial for one or two of the less competitive shipyards to withdraw from shipbuilding. The surviving yards will thus have a sufficient volume of potential business to ensure their continuing viability as shipbuilders. During the 1968-1970 slump, two major establishments ceased their shipbuilding activities (V.M.D. on the West Coast, Vickers at Montreal) helping to reduce the imbalance in supply/demand.

CAPITAL EXPENDITURES

Over the period 1964-1975, Statistics Canada reports the following capital expenditures by Canada's shipbuilding and repair industry:

Land and Buildings	\$43 Million
Machinery and Equipment	69 Million
Total	<hr/> \$112 Million

This represents an average expenditure of \$9,370,000 in each of the 12 years. Expressed in other terms, it was 2.9 per cent of the total value of industry production during the period.

To encourage expenditures to improve productivity, the Shipbuilding Industry Assistance Program provides for the Crown to pay 50 per cent of such expenditures, to a maximum of three per cent of the approved cost of eligible ships built or converted by a shipyard. At the current level of \$400 million/year of construction, this would make matching financing available on expenditures of up to \$24 million per year, which is well above the \$19 million reported for 1975.

INDUSTRY PROFITABILITY

As shown by the table annexed to Appendix 2 of the Profile, the great majority of large Canadian shipbuilders are divisions or subsidiaries of large companies. Accordingly, their shares are not traded and it is difficult to set a value on the owner's equity. Profits, also, are seldom segregated and even the companies with shipbuilding as their main activity tend to have substantial revenues from other sources, including investments made on behalf of their parent companies. However, the available data suggest that some of the larger Canadian firms are experiencing significant losses in spite of the 20 per cent government subsidy used to secure shipbuilding contracts.

Of the profitable shipyards, several tend to concentrate on repair work and to accept new construction orders only when they are reasonably attractive. Vessels for the provincial and federal governments have made up a large percentage of recent new construction on the West Coast. In the East, one yard became profitable, in 1969, by scrapping its building ways and concentrating entirely on ship repairs.

There is a middle group of shipyards which do much of their work for shipowning parent companies. Whether or not they show a profit depends largely on whoever is responsible for the parents' accounting systems.

Among the smaller yards in the Atlantic Provinces several would not now be in new construction if provincial governments had not subsidized their survival. All have required heavy support in recent years due to low volume and sharply rising labour and material costs. It does not help matters that these yards are competing for the few orders available in the region.

EXPORT FINANCING

The availability of export financing on competitive terms and conditions is critical to a country's success as a ship exporter.

Canadian shipyards have access to the services of the Export Development Corporation which provides two types of financial support for exports. One is the insurance of export credit normally provided by Canadian chartered banks on terms of up to five years; the other provides direct loans beyond five years.

In 1969, 13 shipbuilding members of OECD, including Canada, agreed to the minimum limits of government-based financing terms for the export of vessels. This protocol was amended in 1970, 1974 and 1975 and was generally observed until 1976.

A significant element of requests for aid by third-world countries relates to ship construction contracts, and occasionally Canada, through CIDA, is given the opportunity to quote on this business. The existing mechanism by which these contracts are processed within Canada does not work to the advantage of the Canadian shipbuilding industry.

IMPORTS — EXPORTS

While Canadian shipbuilders were devoting much of their efforts to the export market, a significant number of secondhand ships were imported into Canada to satisfy certain needs of the domestic market. Ton for ton, these older ships (some date back to 1909) are far cheaper than new vessels. The dollar figures for exports and imports in Table 6 seriously understate the extent to which imported ships have reduced the potential domestic market for Canadian shipbuilders. The possibility of restricting further imports is now under consideration by the Department of Transport, since old ships, even though extensively rebuilt, reduce the average quality of the Canadian merchant marine. However, there are certain trades which cannot be served economically by new ships, which accounts for the Department of Transport's reluctance to impose a ban on imports. (Since 1950, the Minister of Transport has had the power to deny Canadian registration, under Section 22 of the Canadian Shipping Act.)

TABLE 6
EXPORTS, IMPORTS AND TRADE BALANCE
OF SHIPBUILDING AND SHIP REPAIR INDUSTRY

Year	Export*	Import	Balance
	— Thousands of dollars —		
1976	146,022	49,747	+ 96,276
1975	209,757	58,482	+151,275
1974	109,568	60,893	+ 48,675
1973	145,172	36,501	+108,671
1972	20,967	33,494	- 12,527
1971	13,379	16,929	- 3,550
1970	25,069	15,017	+ 10,052

Source: Statistics Canada

*These values are not comparable with the value of production as the latter includes subsidy and other elements excluded here.

Exports, which accounted for 70 per cent of tonnage built in Canada in 1974-1976 and almost half the value of new construction will decline unless new orders are received in the immediate future, since orders received during the boom period are nearing completion. Access to the U.S. market, which could be a significant supplement to domestic demand, is blocked by U.S. law (the Jones Act) requiring that all ships carrying goods or passengers between U.S. points must be built in the U.S., and by the U.S. tariff of 50 per cent on repairs effected abroad. The Canada-U.S. Defence Sharing Agreement permits Canadian yards and component manufacturers to obtain U.S. Navy subcontracts, some of which have been quite valuable. While other export markets remain open to Canadian yards there is little likelihood of winning export business in the short to medium term other than in exceptional cases, where financing or other factors favour the Canadian shipbuilder.

CANADIAN TARIFFS

The Canadian industry has only nominal protection against foreign competitors and is highly sensitive to world market conditions. Canadian shipowners are under no obligation to place their ships under Canadian registry, except those engaged in the coasting trade and even these need not be built in Canada. As competition increases in intensity, foreign yards have been able to secure a few orders for new Canadian flag ships — a trend that could continue.

Tariff item 44000-1 provides for duty of 25 per cent on vessels imported for use in the coasting trade (defined as the carriage of goods or passengers between points in Canada). However, there is an exclusion for "British-built" vessels that allows a ship built almost anywhere in the Commonwealth (e.g., Singapore), to be imported into Canada duty free. Under this tariff item, duty is payable at time of application for a coasting licence, thus in practice, it is possible for foreign built ships to operate duty free under the Canadian flag on the Great Lakes, so long as they remain in international trade between U.S. and Canadian ports.

Tariff item 44002-1 covers other than those entitled to engage in the coastal trade. The rates of duty are 15 per cent BP and 25 per cent for all others. Few commercial vessels fall into this category.

Tariff item 43935-1 provides free entry (BP and MFN) for fishing vessels of more than 100 feet registered length.

The Canadian Shipbuilding and Ship Repairing Association has complained that even those ships on which 25 per cent duty is applied have entered Canada at little cost since the basic value on which duty must be calculated has, due to established practice, typically been calculated on a value far below Canadian replacement cost. The matter is currently under review. Drill ships imported by Dome Petroleum have entered completely free of duty by virtue of a remission order.

Procedures were recently established for applying countervailing duties against injurious subsidized imports. Dumping is difficult to prove because it is difficult to obtain domestic prices in the exporting country for comparison with prices quoted in Canada. However, with a ministerial prescription, National Revenue can "construct" a domestic price. It should be noted that in a countervail investigation there is no requirement to demonstrate such a price differential. Proof of subsidy and injury is sufficient to apply countervailing duty.

MULTILATERAL TRADE NEGOTIATIONS

The current round of trade negotiations is focussing on tariffs and such non-tariff measures as cargo preferences, government procurement and subsidies/countervailing duties.

THE OUTLOOK FOR THE INDUSTRY

For the immediate future, the competitive picture is extremely bleak. Canadian shipbuilders with a charge-out rate of up to \$20 per man-hour face competition from Asian yards willing to quote prices based on rates as low as \$3 per man-hour. Even the double protection of a 25 per cent tariff and 20 per cent subsidy do not allow Canadian shipbuilders to match some of the prices now being quoted by Korean yards. This applies to all types of ships, not merely to mass produced standard vessels — an example is the Korean shipyard that recently gave a surprisingly low bid on a vessel custom-designed for service between Montreal and St-John's.

In the longer term Asian prices will, almost certainly, climb to a level at which some return can be taken on heavy fixed investment in facilities (the latest Korean facility cost about \$70 million, very little of which has been amortized to date). Many European countries are cutting back on their capacities and it is possible that demand for new ships will pick up sufficiently to bring prices out of their current sharp slump within the next few years.

Thus, the Canadian industry could eventually settle down to serving its traditional market, the Canadian government and domestic owners. The latter may have a considerable volume of demand if Arctic navigation develops as expected. It is probable that the industry will then stabilize slightly below its present level and, with government assistance, no higher than present levels.

ENCOURAGEMENT FOR DOMESTIC SHIPOWNERS

Since Canadian owners represent the prime market for Canadian shipbuilders, it is a matter of concern to the industry that it must compete in domestic as well as export markets with foreign shipyards which offer complete packages, including financing. When dealing with foreign customers, the Canadian yards can call upon the Export Development Corporation, but there is no comparable form of assistance in domestic sales. In recent years, the relative disadvantage of Canadian shipbuilders has actually widened, due to changes in tax legislation which severely restrict the availability of financing through leasing arrangements.

With the prices of ships constantly increasing — a bulk carrier of Seaway size now costs \$30 million, an LNG carrier could cost \$250 million — the cost of financing becomes a major factor in the economics of ship operation. A shipowner in the United States who receives a ten per cent investment credit and finances his new ships under Title XI (government guarantees) needs to provide less than five per cent of initial cost of the ship on delivery, and has up to 20 years in which to repay the remaining 85 per cent at an interest rate that is currently just above 8 per cent. Canadian operators of ships on the Great Lakes, seeing business pass to U.S. flag lake vessels are complaining that financing costs are destroying their former competitive advantage, and they can no longer afford to buy Canadian built ships (several have recently imported ships, benefiting from other countries' export financing and lower prices).

The industry maintains that further encouragement to Canadian shipowners is essential if Canadian shipbuilders are to compete successfully, even in the domestic market.

ARCTIC SHIPPING

Canada has earned an international reputation as a world leader in icebreaking technology, and design and construction of icebreakers. The world's first Arctic class commercial bulk carrier has just been completed at Port Weller, Ontario. It heralds a new era in the development of Arctic marine transportation. An icebreaking technology exchange agreement was recently signed between Canada's Saint John Shipbuilding and Dry Dock Co. Ltd. and the leading shipyard in Finland, Wartsila Ab.

Two current major initiatives related to Arctic energy exploration have important marine transportation elements, and significant ramifications for Canada's shipbuilding industry.

Dome Petroleum Ltd. is negotiating with Canadian shipyards for construction of an Arctic Class 10 icebreaker and two barges, to be used in support of exploratory drilling in the Arctic. These would cost at least \$200 million. Dome is also discussing a major LNG development planned for commitment in mid-1980. This could include the construction of three 125,000 m³ LNG carriers and other potential shipbuilding work. As a separate venture, Petro Canada is proposing that LNG be brought out from the Archipelago by the marine route. This project would require a number — initially two — of ice-strengthened LNG carriers comparable in size to those proposed by Dome, and there could be a requirement for an icebreaker. In addition, Petro Canada intends to utilize a barge-mounted liquefaction plant. Construction of the barges and assembly of equipment would provide major contracts for one or more Canadian shipyards.

Possibly only one of the two projects will receive National Energy Board approval. However, the icebreaker and barges would provide several thousand man-years of employment in shipyards and, since Canadian-built propulsion systems almost certainly will be used, will have a strong positive effect on supporting industries.

Although the icebreakers for these projects could be built in Canada, it is clear that the large dimensions of the LNG carriers exceed existing capabilities of any Canadian shipyard. Consequently, if Canada is to achieve maximum industrial benefits from Arctic resource developments, it is essential that the necessary shipyard capabilities be acquired to build these ships. Because of the capital investment required, it is likely that only one of our shipyards would and should enter this market. The mechanism for providing support to encourage the required investment already exists in provisions of the Shipbuilding Industry Assistance Program.

Several studies are now underway by government and industry to determine the economics of using ships to bring oil and/or natural gas out of Canada's Arctic, but the terms of reference for these studies do not include evaluation of the industrial benefits if the ships are built in Canada. To obtain maximum possible benefit for the shipbuilding industry, a further study is being made that will include:

- the feasibility of constructing tankers and/or LNG carriers in Canada
- cost of such ships relative to foreign prices
- cost disadvantage, to the operator, of having ships built in Canada, expressed in terms of cents per barrel or per million cubic feet that will be carried over the life of the vessel
- elasticity of markets for gas or oil if prices are increased to allow for Canadian built ships
- the value to Canada of having ships built in Canada.

NAVY SHIP REPLACEMENT PROGRAM

Canada possesses a well-proven capability to construct its own surface warships. Since 1950, Canadian shipyards and related industries, in partnership with the Department of National Defence, have successfully built inter alia 24 destroyers of five different classes and three large operational supply ships.

The Canadian Navy's proposed frigate replacement program would represent a significant portion of Canada's shipbuilding market in the 1980's. While the keel of the first vessel would not be laid until 1981, this program could contribute significantly to the restructuring of Canada's shipbuilding industry. The program may involve the construction of up to 20 vessels over the period of 1981-1991, with the first six ships to be delivered between 1985 and 1988. Each vessel is estimated to generate

approximately 1,250 direct shipyard man-years of employment, and secondary employment in components manufacturing of about 1,700 man-years. Canadian industry, will likely be given responsibility to complete the design and construct the ships under the direction of the Department of National Defence. The program can be tremendously important to the future prosperity of the shipbuilding and components sector and other industries, particularly the electronics and communications industries in Canada. It is estimated that between 20 and 30 per cent of the cost of these new vessels will be in electronic hardware.

At present it is planned to acquire these vessels through a novel procurement process. Following project definition, shipbuilders and contractors will be required to qualify to bid on contract definition which will include the detailed design and construction of the vessel, its trials, and the related training of crews. The program could have implications for restructuring elements of the shipbuilding industry, as the prequalifications requirement could conceivably limit competition to two yards. In turn, this could lead to streaming all new naval construction to one shipyard.

GOVERNMENT PROCUREMENT, OTHER THAN FRIGATE PROGRAM

Government procurement over the years has fluctuated dramatically as an element of total shipbuilding activity. In 1960 it represented 27 per cent of the industry's output. In 1970 government procurement represented two per cent of total output. It now stands at about ten per cent. It has been suggested by industry that government procurement could be used to stabilize demand, with government maintaining a number of vessels on a "shopping list" to be held in reserve for periods of slack in the industry. The concept would be difficult to implement, due to the uneven pattern of procurement originating from a number of different fleet operations in a variety of government departments, e.g., Departments of Transport, National Defence, Environment, Fisheries, Public Works, and the RCMP.

Nevertheless a determined effort by the government procurement agency to bring forward known requirements of a number of departments within the time frame of the projected slowdown in the shipbuilding industry, could significantly improve the circumstances of Canadian shipbuilders over the critical next three years. This action would require redistribution of departmental budgets, and the bringing forward of expenditures into the fiscal years 1978 through 1980 time frame.

Among potential contracts of significance, the construction of a \$250 million Polar icebreaker could ensure the survival of at least one shipyard; however this is unlikely to generate shipyard work until 1979. A number of mid-life conversions for Coast Guard vessels is also planned. The Coast Guard Ship Replacement Program could place badly needed contracts in intermediate-sized shipyards during the period 1978 to 1981. The Department of the Environment has identified a need for new patrol craft, resulting from the Law of the Sea Conference, and there appears to be a need for new fisheries research vessels as a prerequisite to a new generation of commercial fishing vessels. In addition to the Navy Ship Replacement Program mentioned above, a small number of conversions and the replacement of small naval vessels are planned.

Because of budgetary restraints within government there has been of late a tendency by several Agencies and Crown Corporations to lease or charter foreign vessels. Although ferries built in Canada cost up to 45 per cent more than present bargain basement prices offered by foreign yards, construction of these vessels in Eastern Canada would provide a significant overall economic benefit to the country. Thus, overall costs to the government, for Canadian built ferries may be advantageous compared to foreign built vessels purchased or leased for service in Canadian waters.

GREAT LAKES FLEET

New bulk carriers will be required, over the medium term, on the Great Lakes to carry coal and other bulk materials. However some of the ships will be designed for operation only on the Upper Lakes and will be larger than Seaway size. Modification of existing facilities will be required to accommodate the construction and repair of these larger vessels, and this matter is being examined as part of a federal review of lake facilities.

OCEANGOING MERCHANT MARINE

The economics of a deep sea merchant marine are currently under review by Transport Canada. If that department decided to support an oceangoing domestically-built Canadian flag merchant marine, there would probably be a significant market for Canadian built tankers and cargo vessels of the types now being built for Greek and other foreign owners. The question of protection against foreign built ships is also now under review.

EXPORT MARKETS

Despite the present severe slump in shipbuilding there is a market for various types of ships, particularly those for which Canadian yards have an established reputation. However, many of the customers for such ships are developing countries which have access to generous financing terms in other shipbuilding countries. The extent to which Canadian shipbuilders can penetrate this market depends largely on the degree to which competitive financing terms are made available by the Canadian government through EDC and/or CIDA.

Several major shipyards, particularly the three yards in Quebec, have been successful in obtaining sub-contracts for the U.S. Navy under the Canada/U.S. Defence Sharing Program, and some manufacturers of marine components have also benefited from this market. Negotiations are now underway on further sub-contracts which could total \$20 million per year during the next decade.

EFFECT OF 200 MILE LIMITS

The extension of ocean boundaries is expected to have a significantly favourable effect on Canada's fishing industry, particularly the fish processing segment. Unless foreign fishing fleets operating in Canadian waters can be induced to have their repair work done in Canada, the effect on the shipbuilding industry is not as certain and, in the short term at least, the major benefit to Canadian shipbuilders may be through government procurement of patrol vessels for the enforcement of fishing and pollution restrictions. Depending on the outcome of negotiations with other countries on fishing rights there could be a substantial increase in repair business for Atlantic coast shipyards. Also, in the longer term, as fish stocks recuperate vessels currently in use will require replacement and the 200 mile limit may offer a means of increasing the market for Canadian built fishing vessels.

SHIP REPAIRS

Ship repairing typically accounts for approximately 20 per cent of the entire industry's sales, and has been worth an estimated \$100 million in each of the past three years. Ship repairing is relatively more stable than new construction, and most shipyards find it beneficial to be involved in both activities, while some firms have successfully specialized in repairing. Recent studies identified opportunities for the expansion of operations in this field. Such opportunities relate mostly to foreign owned vessels calling at Canadian ports, and can be considered export sales opportunities. However, the exploitation of this potential business will require substantial capital investments, essentially for the provision of adequate dry docking facilities. Dry docks are generally provided or substantially funded by governments in support of waterborne transportation systems and shipbuilding and repairing.

DRY DOCKS

The exploitation of ship repairing opportunities requires, among other things, plants and equipment with capabilities matched to the size of vessels to be served. Dry docks are the basic and most expensive structures in support of the industry. They enable large ships to be taken from the water so

that work may be performed on their underwater parts. The configuration of modern dry docks reflects the changing shape and size of ships now plying the oceans of the world. Where a common deep-sea vessel in the 1950s had a capacity of 10-15,000 deadweight tons, a common size now is 40-50,000 dwt., with some of the larger exceeding 50,000 dwt. Within the structure of the international ship repair industry, dry docks are not commercially viable. They have been provided, or substantially funded, by governments of many countries in support of waterborne transport and naval operations.

FEDERAL GOVERNMENT ACTION 1973 TO 1977

A federal government committee was established in 1973 to investigate the adequacy of ship repair and dry dock facilities in Canada. In 1975, the government, following receipt of the committee's report, directed that the government-owned Esquimalt Graving Dock be refurbished and that the Department of Industry, Trade and Commerce investigate and report on possibilities concerning the type, cost and ownership alternatives of a dry dock for Vancouver. This investigation, and a report on the facilities in the five Eastern provinces have been completed. In addition, a similar study of dry docks on the Great Lakes has been initiated.

BRITISH COLUMBIA

Improved facilities at Esquimalt and in the Port of Vancouver would enable local ship repairers to maintain existing operations and capture additional foreign ship repair business. The activity thus generated would support approximately 600 continuing jobs. Expressed in terms of sales, operations could approximate \$30 million annually, of which at least 50 per cent should relate to foreign flag business.

QUEBEC

The provincial government, with federal financial assistance via DREE, is constructing a \$2.9 million dry dock on the lower St. Lawrence River. Studies indicate other opportunities exist for a larger share of the foreign ship repair market, for which refurbishing, new cranes and modification to the federal government's dry dock at Lauzon may be required.

NEW BRUNSWICK

At Saint John, an enlarged dry dock could serve the repair needs of large vessels travelling in that area. Saint John Shipbuilding and Dry Dock Co. Ltd.'s success in exploiting the shipbuilding market resulted in their using the existing dry dock for new ship construction, and foregoing repair business. However, the opportunities lost in ship repairing are significant and plans have been formulated to take advantage of such opportunities. It will require additional dry dock capacity which may be most economically provided by enlarging the existing unit.

NOVA SCOTIA

Studies by the Interdepartmental Committee on Dry Docks, the Province of Nova Scotia and DREE indicate significant opportunities in the large vessel repair field for a committed organization, provided adequate dry dock facilities are available. In recent years, Halifax Shipyards has concentrated on the

construction of offshore drill rigs and allowed ship repairing to become a minor activity. The company's floating dry dock has been allowed to deteriorate and there is now no way to dry dock even a medium-sized ship in Nova Scotia.

Cost of facilities sufficient to allow expansion of ship repairing in Nova Scotia could range between five and 40 million dollars, depending on share of the market sought. The various possible alternatives could provide employment opportunities of between 300 and 900 continuing jobs and revenues of up to \$40 million annually.

NEWFOUNDLAND

An opportunity to expand repair activity has been identified. It relates to foreign fishing fleets plying their trade in close proximity to the province. In the past, active solicitation of this business was discouraged by the government as a matter of policy related to safeguarding fish stocks for Canadian fishermen. However, with the extension of the coastal zone to 200 miles, the improved control over fishing, and agreements such as that recently signed with the U.S.S.R., these opportunities will be examined again. It is estimated that additional revenues of approximately \$2 million annually and assistance for the maintenance of 200 continuing direct job opportunities can be generated by exploitation of this market. It may require the provision of additional dry dock facilities costing approximately \$3 million.

LIKELY FUTURE COSTS TO THE CROWN

To keep today's level of about 14,000 persons employed in the shipbuilding and repair industry would require at least \$350 million worth (1976 dollars) of new ship construction annually. This would be for commercial owners (now subsidized at 20 per cent of audited cost) and the government. There would be a readily identifiable cost of subsidy attributable to commercial construction but government orders, although not subsidized, would result in a cost to the Crown through the higher prices resulting from preference to Canadian yards. The latter is difficult to quantify but might be assumed to be at the same general level as the subsidy on commercial vessels. If 20 per cent were to be taken on the entire \$350 million of new construction, the cost to the Crown would be \$70 million annually. This does not include the possible cost to the Crown of contributions to dry docks, or of requiring that Arctic gas be carried in Canadian built ships. If LNG carriers are to be built in Canada, total employment would increase by perhaps 2,000.

LIST OF ALL SHIPYARDS WITH MORE THAN 200 EMPLOYEES

<i>Name of company</i>	<i>Location</i>	<i>Employment</i>		<i>Type of production</i>
		<i>Late 1975</i>	<i>May 1977</i>	
Yarrows	Victoria	725	370	tugs, barges, ferries, ship repair
Burrard Dry Dock	Vancouver	750	800	icebreakers, ferries, ship repair
Vancouver Shipyard	Vancouver	600	260	tugs, barges, ferries, ship repair
Port Arthur Shipbuilding	Thunder Bay	250	210	conversions and repairs
Collingwood Shipyards	Collingwood	1000	785	lake vessels, ferries
Port Weller Dry Docks	St. Catharines	600	660	lake vessels, other cargo vessels, ferries
Canadian Vickers	Montreal	500	685	ship repairs only
Marine Industries	Sorel	2200	2475	cargo vessels, small tankers, ferries, ship repairs, naval vessels
Davie Shipbuilding	Quebec	2300	2060	large tankers, bulk carriers, naval vessels, ship repairs
Saint John Shipbuilding	Saint John	1500	1620	product carriers, naval vessels
Halifax Shipyard	Halifax	1400	1075	oil drilling rigs, ship repairs
Ferguson Industries	Pictou	350	235	trawlers, patrol boats, other small vessels
Marystown Shipyard	Marystown	400	350	trawlers, tugs, ship repairs
Newfoundland Dockyard	St. John's	300	300	ship repairs

COMPANY CHARACTERISTICS

As shown by the table at the end of this appendix, almost all the major Canadian shipbuilders are subsidiaries of large companies; the chief exception is Davie Shipbuilding although it was, until early 1976, a wholly-owned subsidiary of Power Corporation.

The various Canadian companies in the industry have dissimilar management objectives. Companies owned by provincial governments, such as Marystown and Marine Industries, are interested primarily in providing employment; profitability, although important, is secondary. In contrast, a privately owned company such as Canadian Vickers Ltd. deliberately withdrew from new construction and specialized in ship repairing in order to show a profit each year, although this caused a two-thirds drop in employment. Other companies have intermediate objectives; one small shipyard closed its doors completely and the owner-manager retired temporarily to California to wait out last year's slump on the West Coast. Some large companies follow the same philosophy, on a larger scale, as they enter the barge building business only when profitable contracts are offered and withdraw from the sector when the contracts are completed.

It should be noted that almost all contracts signed before 1973 were on a fixed price basis and that escalation clauses became common only in contracts made after that date. As there was double digit wage inflation each year during 1972-1975 and since the price of steel almost doubled in 1974, multi-million dollar losses were reported on at least two major contracts signed during the early years of the STAP program. The financial results of more recent export orders are not yet available, but not all will be profitable.

RELATIVE IMPORTANCE OF SHIPBUILDING AND REPAIR
ACTIVITY WITHIN CORPORATE GROUPS

<i>Shipyard</i>	<i>Ultimate Parent</i>	<i>Value of S/B & R Sales (1)</i>	<i>Relative Importance (2)</i>
		<i>\$ Million</i>	
Yarrows	Canadian Forest Products Ltd.	50	D
Burrard Dry Dock		20	D
*Vancouver Shipyard	Genstar Ltd.	20	D
*Port Arthur	Power Corporation	40	D
*Collingwood		20	B
*Port Weller		15	D
Canadian Vickers Marine Industries	Vickers Ltd. (Britain)	15	D
	Société Générale de Financement	75	C
Davie Shipbuilding	Soconav Ltée	75	A
*Saint John	Irving Group	60	C
Halifax Shipyard	Hawker Siddeley (Britain)	45	D
*Ferguson Industries	H. B. Nickerson	10	C
Marystown Shipyard	(Provincial Government)	12	A
*Newfoundland Dockyard	Canadian National	10	D

Notes: (1) Approximate value of sales (\$Million) in 1975, excluding non-marine activities.

(2) Relative importance of shipbuilding and repair sales to total gross revenue of the group:

A — over 75%

B — 25-75%

C — 5-25%

D — less than 5%

**Indicates shipyards with associated shipowning companies.*

GOVERNMENT ASSISTANCE TO SHIPBUILDING

During the war years Canada became a major supplier of cargo vessels and small warships. Following the war, a deliberate effort was made by the government to maintain a shipbuilding industry in all regions of the country. The rationale was the need for preservation of a defence base, but present motives stress the desirability of maintaining employment and the need for a marine infrastructure to support Canada's role as a world trader. Arctic sovereignty is also a factor. Until about 1955, direct government procurement was the chief tool. During the late 1950's, fiscal measures were most important. Construction subsidy has been the major form of assistance since its introduction in 1961.

SUBSIDY

Subsidy was initially at 40 per cent on commercial vessels and 50 per cent on trawlers but has been reduced in stages and reached a low of 12 per cent on applications filed in early 1977. In March of this year, however, the rate of subsidy was increased to 20 per cent as an emergency measure to avoid layoffs in several major yards which were approaching the end of their order books.

The building of ships for export had been encouraged during the 1950's by means of the so-called Escrow Plan, whereby owners were allowed to sell certain wartime-built cargo vessels on condition that they spend the proceeds for replacement in Canadian shipyards. However, when subsidy was introduced, the initial programs were not intended to promote exports; on the contrary, the Ship Construction Assistance Regulations (1961-66) and the Ship Construction Subsidy Regulations (1966-75) required prospective owners to covenant that subsidized ships would be kept on Canadian registry for at least five years after completion.

At the end of 1970, domestic orders had fallen drastically and, as foreign owners were interested in having ships built in Canada, the Shipbuilding Temporary Assistance Program (STAP) was introduced.

This provided subsidy (at rates varying from 14 per cent to 17 per cent) on ships built for export and was successful in attracting approximately \$1.3 billion of orders to Canadian shipyards. The previous subsidy program remained in effect during this period, for domestic contracts.

In 1975 a new program was announced and no further applications were accepted under the older programs. The Shipbuilding Industry Assistance Program (SIAP) offers the same rate of subsidy whether a ship is being built for export or for a Canadian owner. The rate was initially 14 per cent, on applications received in 1975, but dropped to 13 per cent in 1976 and 12 per cent at the beginning of 1977. In addition a three per cent grant is available toward approved expenditures intended to improve productivity in the shipyard.

As world shipbuilding slumped, two changes were made to SIAP. In December, 1976, conversions were made eligible for assistance and in March, 1977, the rate of subsidy was raised to 20 per cent. These measures enabled several yards to obtain contracts, the most important being a \$100 million order for four cargo vessels for Poland.

The table at the end of this appendix shows amounts of subsidy disbursed in each year, by province.

LIMITATION OF THE INDUSTRY FOR SUBSIDY PURPOSES

When first introduced in 1961, subsidy was payable on all ships over certain specified sizes, regardless of the shipbuilder. As a consequence, many companies (and individuals) received subsidy although they could not be considered shipbuilding establishments. During the period 1961-75, 110 names appear on the list of "shipbuilders" receiving subsidy, many were individuals or small companies that built only one ship during the entire period, often for their own use.

During the three fiscal years prior to introduction of SIAP, 31 companies received 98.7 per cent of total subsidy disbursements and the remaining 21 recipients of subsidy received, in total, less than \$1½ million during the same period. No subsidy was paid during this period to 58 of those who had received subsidy in previous years.

As there is no benefit to be obtained in paying subsidy to those engaged only casually in the building of ships, two major limitations were imposed on the eligibility of shipbuilders seeking assistance under the Shipbuilding Industry Assistance Program:

- they must be incorporated.
- they must pass examination, by a committee with the Department of Industry, Trade and Commerce, to verify that they are in the shipbuilding and repair business on a permanent basis.

It is probable that, after examination of all applications now on hand, assistance will be available to 40-45 companies in every province except Saskatchewan. Some of these are quite small and construct only smaller vessels e.g. tugs, barges, trawlers, but they have a relative importance within communities such as Caraquet, New Brunswick; Riverton, Manitoba; and Wheatly, Ontario.

Other restrictions on subsidy

At present, ships are eligible for subsidy if they meet the following minimum sizes:

- 100 tons, if self-propelled
- 200 tons, if not self-propelled
- over 75 feet overall length, if a fishing vessel.

At various times in the past attempts have been made to increase these minimum sizes, to restrict subsidy to larger vessels. However, resistance from the smaller shipyards has always been sufficient to frustrate the proposed increases.

Also there is no differentiation by area of service. A cruise boat on the Rideau River is entitled to the same rate of subsidy as an oceangoing cargo vessel, although the degree of international competition is much less severe for the former.

Fiscal measures

Since 1949, the first user of a Canadian built ship has been allowed to claim C.C.A. at 33⅓ per cent per annum, on a straight-line basis. This measure lost part of its value in May, 1976, when the Minister of Finance changed the rules governing leasing, but is still worth retaining as a means of reducing the effective capital cost of new ships.

From 1957 until 1975, special tax relief was granted to shipowners building replacement vessels in Canada: under what was sub-section 13(15) of the Income Tax Act, depreciation recaptured on disposition of a ship was not taxable if the proceeds were used to construct a replacement or for conversion work in a Canadian shipyard. This measure was particularly valuable between 1957 and 1961 but lost popularity after the introduction of subsidy as the benefits could not be cumulative; during subsequent years, it was used chiefly to reduce the cost of conversions, which were not subsidized, and of ships below the minimum size for subsidy.

Several countries, including the United States, still assist their shipbuilding industries through such fiscal measures as escrow funds, investment credits, accelerated depreciation, generous tax legislation on leasing arrangements, etc. Canada appears to be exceptional, in that fiscal measures have been withdrawn in recent years.

SHIP CONSTRUCTION SUBSIDY
SHIPBUILDING TEMPORARY ASSISTANCE
SHIPBUILDING INDUSTRY ASSISTANCE
AMOUNT OF SUBSIDIES, GRANTS AND CONTRIBUTIONS PAID BY PROVINCE
BY FISCAL YEAR

Province	(5 years) 1961-1966	(5 years) 1966-1971	(2 years) 1971-1973	1973-1974	1974-1975	1975-1976	1976-1977	1977-1978	Total
British Columbia	31,049,353.31	22,122,250.74	7,010,953.86*	8,988,509.19*	10,499,472.44*	14,987,212.10*	7,186,185.68*	4,519,085.34*	106,363,022.66*
Alberta	—	1,611,941.45	873,735.58	545,244.06	—	274,621.06	245,980.48	—	3,551,522.63
Manitoba	100,605.05	504,013.72	86,254.99	—	—	193,566.42	—	—	884,440.18
Ontario	31,507,328.55	23,543,565.23	6,046,252.33*	3,347,285.12*	4,636,333.55*	6,040,429.31*	9,660,004.48**	12,070,521.61**	96,851,720.18**
Quebec	44,525,617.04	39,600,248.37	11,746,516.19*	11,816,443.24*	14,417,875.02*	22,207,070.28*	23,400,924.73*	24,322,099.59**	192,036,794.46**
New Brunswick	16,415,731.67	9,040,028.40	5,902,525.12*	3,161,255.61*	6,502,511.28*	6,907,701.75*	15,271,135.63**	8,824,408.98*	72,025,298.44**
Nova Scotia	12,188,561.28	23,609,831.93	8,281,724.48*	3,980,839.10*	6,288,375.85*	4,269,562.85*	11,121,129.60*	3,643,058.75**	73,383,083.84**
Newfoundland	662,748.62	2,186,752.99	1,272,801.02	2,623,887.96	2,634,810.86	3,057,973.23	1,114,639.40 +	1,205,882.00 +	14,759,496.08 +
Prince Edward Island	588,000.00	3,193,500.00	516,002.09	36,535.72	20,621.00	61,863.00	—	20,621.00	4,437,142.81
Total	137,037,945.52	125,412,132.83	41,736,765.66*	34,500,000.00*	45,000,000.00*	58,000,000.00*	68,000,000.00**	54,605,677.27**	564,292,521.28**

*Includes Shipbuilding Temporary Assistance Program figures

+Includes Shipbuilding Industry Assistance Program figures

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