From Rear Admiral (Ret'd) W.J.Rourke AO FTSE Hon FIEAust FRINA
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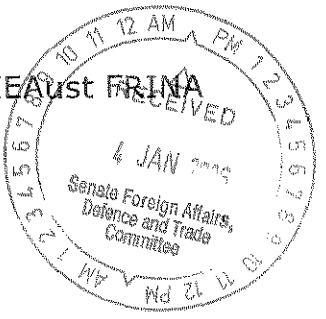

Friday, December 23, 2005

The Secretary
Senate Foreign Affairs, Defence and Trade References Committee
Suite SG.57
Parliament House
CANBERRA ACT 2600

Inquiry into the scope and opportunities for naval shipbuilding in Australia

I hereby forward to you the paper I have prepared regarding the scope and opportunities for naval shipbuilding in Australia.

Yours sincerely,

W.J.Rourke

Naval Shipbuilding in Australia

A Report to the Senate Foreign Affairs, Defence and Trade Committee by
Rear-Admiral (Ret'd) W.J.Rourke AO RAN (Ret'd) B.Econ. M.Ec

The author of this report has had a life-time involvement in naval design, naval shipbuilding, naval maintenance and naval operations. In 1958-60 he was involved in research re anti-fouling and hull resistance of RAN vessels, and in 1960-62 worked with Yarrow-Admiralty Research Department (YARD) on design of nuclear powered vessels. In 1962 he was posted to HMAS STUART for initial trials of the Ikara missile, and was posted as RAN Liaison Officer in Bay City Michigan from 1964-1968 for the completion and trials of the DDG's PERTH, HOBART and BRISBANE. During this period he completed an external B.Econ degree.

He was promoted to Captain and appointed as the first Military Adviser to the Chief Defence Scientist from March 1969 to December 1971. During that period he worked with Deputy Secretary Tom Hayes in investigating the needs of naval dockyard development He was then posted as Deputy Director of the New Destroyer Project with design being carried out by YARD. However it became apparent in mid 1973 that the RAN DDL had increased substantially in displacement, and had a weapons system nearly identical to USN FFG's. He and Captain Fred Lynam recommended to the Naval Board that FFG's be bought, and two were ordered in 1974.

In 1974 he was posted to the Royal College of Defence Studies for the year, and then posted to Australia House as Defence Science and Technical Officer. In early 1976 he was posted as General Manager Garden Island Dockyard, and ran the Dockyard until March 1979 when posted as Chief of Naval Materiel. During this time he completed an ANU Master of Economics Degree.

He remained in the post of Chief of Naval Materiel until July 1985, a total of six years and three months. It was his responsibility to make recommendations on acquisition of new ships. During this period the 14 Patrol Boats built in Cairns were completed. HMAS Tobruk was built by Carrington Shipyard and a DURANCE type oiler was built by Cockatoo Dockyard..Additional FFG's were ordered from the US but proposals to get a ship built in Bath (to provide for best practice at Williamstown) were not agreed to in Canberra. Arrangements were made later to build FFG's at Williamstown. Arrangements were also made with the UK to take over HMS Invincible, but the Falklands war made the UK Defence Department withdraw the offer. Two locally designed Minehunter Catamarans were ordered from Carringtons. In 1983 it was planned to build new submarines and consideration was given to possible nuclear boats but it became clear that the costs would be excessive. Conventional submarines were considered and HDW

(Germany) and Kockums (Sweden) were the finalists. In 1984 the keel of the first Minehunter Catamaran was laid at Carringtons.

In mid 1985 RAdm Rourke retired from the Navy after six years as Chief of Naval Materiel, and was selected as the first Chief Executive of the Institution of Engineers, Australia. In 1986 he was made a Fellow of the Academy of Technological Sciences and Engineering. He represented IEAust on the World Federation of Engineering Organisations and in 1991 was elected a Vice-President and served until 2000. He became a Director of Blohm and Voss Australia.

In 1994 the Industry Commission made a study of the benefits of local ship construction, but their work was highly flawed as they used a constant level of employment model. Rourke was Project Director of a report for the Industry Policy and Programs Branch of the Department of Defence entitled "An Economic Analysis of the Shipbuilding Industry". In May 1995 the ASTEC Shipping Partnership was formed and a report published in 1996. In October 1995 Rourke was a member of a shipbuilding mission to Japan led by Senator Chris Schacht.

In 1998 he completed a shipbuilding review paper, and Paul Earnshaw published "Billion Dollar Business: Strategies and Lessons in Australian Arms Acquisition." It provided support for Naval Materiel proposals for change..

In June 2002 Rourke submitted a paper to the Senate Foreign Affairs, Defence and Trade Committee Inquiry into Materiel Acquisition and Management in the Department of Defence., and in February 2003 was a witness at the hearing of the Senate Committee .

In recent years Rourke has been a supporter of the changes to the Defence Materiel Organisation, and believes it is creating steady improvement into arrangements for and management of ship construction projects. He has acted as an adviser to Thyssen Krupp Marine Systems.

Naval Shipbuilding in Australia

1. On 10 November 2005 the Senate referred to the Senate Foreign Affairs and Trade Committee the task of inquiring into and reporting on the scope and opportunity for naval shipbuilding in Australia and in particular:

a. The capacity of the Australian industrial base to construct large Naval vessels over the long term and on a sustainable basis;

b. The comparative economic productivity of the Australian shipbuilding industrial base and associated activity with other shipbuilding nations;

c. The comparative economic costs of maintaining, repairing and refitting large naval vessels throughout their useful lives when constructed in Australia vice overseas;

d. The broader economic development and associated benefits accrued from undertaking the construction of large naval vessels.

Large Naval Vessels

2. The term "large Naval vessels" requires some definition and might reasonably include vessels of some 1200 tons and more, and could extend to vessels of some 25000 tons or more.

3. The economic productivity of building large ships depends upon the capacity of the shipyard, which is in turn related to such matters as depth of water and capacity of craneage.

4. The initial design of large naval vessels of 20,000 tons or more is likely to be undertaken by shipbuilding nations with substantial design and production capabilities. The design can then be modified for particular needs of various countries and could be constructed in the countries that require them. Whether or not the local construction is preferred is dependent largely on the availability of construction facilities, the productivity of local shipbuilders, and the cost premium (if any) of construction overseas.

5. The productivity of local shipbuilders in Australia has been reasonably good and local construction is practicable and appropriate. Local construction can usually compete well with US construction costs and those of Europe. The Tasman Asia Pacific Study "Impact of Major Defence Projects: A Case Study of the Anzac Ship Project." assessed that the ANZAC program made substantial contributions to Australian GDP, and also provided substantial savings in increased participation in through-life support.

6. The warships that Australia needs can be divided into two main types. There are those ships like destroyers whose sensors and weapons need to be modified with changing weapons and sensor capabilities about every eight to ten years. There are other ships which are mainly platforms for embarking troops and helicopters, and have less need of platform modification.

7. The writer believes that there should be some production of Australian corvettes, with about two built about every ten years, to provide a reserve capacity of warships that can protect our coasts. Additional ships and additional armaments could then be rapidly provided in time of need. There should also be regular production of destroyer type vessels with arrangements made to deliver in batches, and weapons and sensor upgrades made from batch to batch.

8. Australia has a substantial ship design capability, particularly in Austal Ships. The US Navy has recently indicated it wants Austal to build an initial Littoral Combat Ship which is expected to be the forerunner of a class of about 60 or more new vessels. Australia needs to assess the utility of these ships and might well need to procure some of them.

9. The Australian Navy should make a contribution to Australian naval ship design capability, and involvement in local design provides those involved with an improved understanding of its needs.

10. Shipyards building warships, and their naval customers, should ensure sufficient time is provided to sort out any problems in the first of class before follow-on ships are built to the same specification. Building programmes should make provision for this requirement.

Comparative Economic Costs of Maintaining , Repairing and Refitting when constructed in Australia

10. It is advantageous to employ those involved in initial installation and operation of equipment with its upgrading and maintenance. Otherwise use of experts from overseas could involve high costs.

11 When initial designs of warships are obtained from other countries, arrangements should be made to maintain linkages with development of systems and weapons, and arrangements should be made to allow spares to be made available. It is considered that the ANZACs should have established common holdings with other Navies , particularly with the German Navy.

12. It is to be expected that the costs of maintaining, repairing and refitting ships that have been constructed in Australia will be significantly less than the costs of maintaining ships constructed overseas.

Shipbuilders Co-operation and Complementarity

13. Australia currently sustains a number of shipbuilding yards, and there are shipbuilding facilities available in New Zealand. It would be useful to develop an understanding that utilizes and maintains the complementarity of various builders, including those in New Zealand.

The Defence Procurement Review

14. The Defence Procurement Review carried out by Malcolm Kinneard and others made a number of important recommendations that have now been implemented. Government enforcement of a rigorous two-pass system for new acquisitions, with greater emphasis on early analysis, is currently required.

15. Project managers should be selected on merit and have minimum tenures, usually of five years. I believe that there is a need to focus on

officers who gain a B.Tech or B.Eng degree, and there is a need to provide them with further courses during their naval career. It would be good to provide engineer officers with experience of warship design and construction but it is appreciated numbers serving are very low and will need to be increased before this can be done.

ASPI Policy

16. The 2002 ASPI Report **"Setting A Course for Australia's Naval Shipbuilding and Repair Industry"** makes sound recommendations in its five modest reform proposals. These are to let the industry determine an appropriate number of builders, to smooth out the shipbuilding work-load, to improve naval repair and maintenance, to sell ASC to the highest bidder, and to avoid buying Australian unique systems. Some caution is needed in regard to the last proposal as firms like CEA Technologies may well lead the way on equipment development. The aim should of course to be a provider to other Navies, as well as to our own.

Future Submarine Development

17. Although the submarine fleet is increasing its capabilities and performance there will be a need within the next decade to consider a programme for future submarine development. It will be necessary to consider nuclear options for these vessels, and it may prove desirable to second personnel to participate in a European nuclear submarine programme, as a fore-runner to an Australian build.

The DMO and the Navy

18. The Defence Materiel Organisation is providing a sound approach to managing its Australian Industry Programmes. It is to be expected it will continue to develop its staffing and management to provide improved approaches and management for all its major projects.

19. The Navy has an increasing need to increase its capabilities in regard to technological and engineering development. Its numbers of engineering officers are low, and it only trains a small proportion of its officer cadets in engineering or technology courses. Consideration needs to be given to training officers who will be able to participate constructively in the Navy's technological future, and who will be able to contribute to high quality technological management in the DMO.

The Shipbuilding Future

20. There needs to be a prospective ship-building future that has work for shipbuilders for at least for the next five years ahead, and perhaps for five more years in regard to probable orders.

21. The Australian Navy should recognize the prospective need for smaller ships in time of war, and should foster the design and construction of smaller vessels such as corvettes.

22. There should be opportunities for Australian industry to provide equipments such as pumps for firemain and radar for smaller vessels.

23. Australia has a very substantial length of coastline including that in Australian Antartica. It needs to maintain a substantial maritime capability to survey and protect that coastline. It is also in a position to establish a ship design and production team that can meet Australia's own needs and those of countries in our region. It should interact with Indonesia and other countries and provide ship design and production services.

Overview

24. The Australian Shipbuilding Industry has demonstrated its capability of building naval warships in Australia at a competitive cost to overseas building. They have also shown that local building is beneficial to life-time modernizations and to normal maintenance. It should also prove useful to establish Australian design of naval vessels in partnership with overseas

designers. All these activities will require strong leadership from the DMO, which needs in turn to have strong support from the Royal Australian Navy. There is some concern at present that the Navy is finding it difficult to obtain naval engineers and naval architects, and there is a need to introduce and encourage technology degrees at the Australian Defence College.

25. Australia is a maritime nation and needs to maintain and further develop its ship design and shipbuilding skills. To do this will require the establishment of a consortium of shipbuilders and designers who can pool their capabilities and develop the interaction and specializations needed. It will also require a long-term shipbuilding plan.

Signed

Rear Admiral (Ret'd) W.J.Rourke AO B.Ec M.Econ. FIEAust FRINA FSNAME