THE ROYAL INSTITUTION OF NAVAL ARCHITECTS

AUSTRALIAN DIVISION

DEFENCE PROCUREMENT
A MARITIME PERSPECTIVE

THE ROYAL INSTITUTION OF NAVAL ARCHITECTS

Founded in 1860 to "....advance the art and science of Naval Architecture... ", The Royal Institution of Naval Architects has since developed into a world renowned and highly respected professional institution and learned society. The Institution has been under Royal Patronage since 1897, and was granted its Royal Charter of Incorporation in 1910 and 1960.

The Royal Institution of Naval Architects exists to promote and serve the interests and needs of its members, who are involved at all levels in the design, construction, repair and operation of ships, boats and marine structures. RINA has members in over 80 countries, and is widely represented in industry, universities and colleges, and maritime organisations.

An Australian Branch of the Institution was founded in 1954. It was made the first Division of the RINA in 1978, and today has Sections in Queensland, New South Wales, Australian Capital Territory, Victoria, Tasmania, South Australia/Northern Territory and Western Australia. There are some 500 members of the RINA in Australia.

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Cover: *HMAS Melbourne* and *HMAS Toowoomba* (RAN photo)

INTRODUCTION

This is the response of the Royal Institution of Naval Architects (Australian Division) to invitation by the Senate Committee on Foreign Affairs, Defence and Trade to make a submission to its the inquiry into Defence Procurement.

While the RINA is mindful of broader strategic implications and of Australia's defence requirements in areas other than maritime this submission focuses on the maritime field, and particularly on the areas of procurement and sustainment of naval ships. The RINA feels that these are areas in which it has the expertise to make a significant contribution to the Review.

Areas of particular concern to the RINA and its members which are discussed in this submission include:

- The vital importance of Department of Defence being an intelligent customer.
- The need to maintain a continuous stream of work to the industry.
- The importance of Australian conditions for the design of warships.

The RINA believes that the maintenance of a viable defence industry is critical to Australia's maritime defence. The industry must include the skills and capabilities in the design, construction, modernisation and maintenance of ships as well as weapons and combat systems. It believes that these skills and capabilities must be maintained in Australia, and that dependence on their importation or their development on an "as-needed" basis is not in Australia's best interests.

Prof Martin Renilson
President, Australian Division
The Royal Institution of Naval Architects
15 April 2011

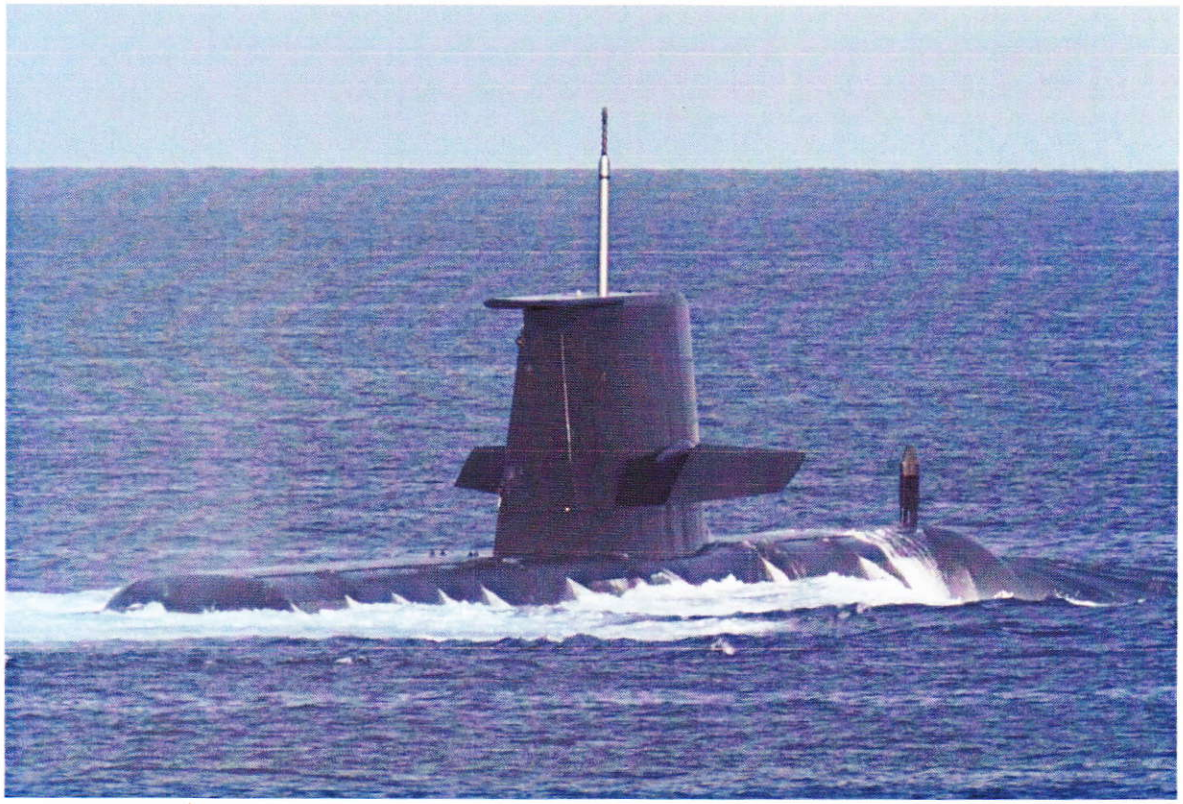
DEFENCE WHITE PAPER 2009:
DEFENDING AUSTRALIA IN THE ASIA PACIFIC CENTURY: FORCE 2030

SPECIFIC QUESTIONS ASKED OF THE REVIEW

The Committee has been tasked with examining the procurement procedures identified in the Defence White Paper, and in particular four items listed in the letter inviting RINA to make a submission.

These specific matters largely concern the internal operations of Department of Defence (DoD), including DMO, in their management of defence procurement. However they have potential to substantially impact upon not only DoD but also the broader defence industry which has a high proportion of RINA membership. It is therefore difficult for RINA to comment on them in detail without reference to a particular section of RINA membership or potentially affecting other groups of members.

However, there are a number of over-riding principles that RINA would wish to bring to the Committee's attention and which in turn have an impact upon the four specific issues asked of the review. These are addressed below.



HMAS Collins (RAN photo)

THE VITAL IMPORTANCE OF DEPARTMENT OF DEFENCE BEING AN INTELLIGENT CUSTOMER

Introduction

There is no doubt that it is very important that the DoD needs to be a highly intelligent customer. This will reflect well in the decisions made throughout the procurement process, from the initial concept stages right through the procurement stages, and also the operational issues.

Conversely, if the DoD is not a sufficiently intelligent customer, poor decisions can be expected at any of the stages in the procurement process, regardless of the systems which are put in place to try to prevent this.

So an important kernel of any attempt to improve procurement must be a strong focus on ensuring that DoD is, and remains, an intelligent customer.

To do this it is essential that there is an adequate number of appropriately qualified engineers, and that they are in the correct position to influence the procurement process.

Exercising to retain skills

These engineers need to be properly trained, and to have appropriate, up to date, experience. To this end it is very important that they have the opportunity to conduct relevant exercises to maintain their skills, and hence such a program needs to be in place. Where appropriate this should involve industry, and could include secondments of relevant staff into industry for specific periods and well defined tasks. However, the main element ought to be that these engineers are given the opportunity, and requirement, to maintain their skills by making use of them on a regular basis in a prescribed manner to ensure that they remain current and at the leading edge in their field.

For example, a ship designer who has not been involved in a ship design and design of ship systems for the last 10 years is very unlikely to be in a position to give intelligent input in his field to the procurement process.

Interchange with industry

In addition to the possible interaction with industry during the program of exercises described above, it is important that there is also a formal interchange program to allow both the DoD engineers an opportunity to work in industry, and potentially those from industry to work within DoD.

Clearly, care needs to be taken with regard to details, particularly when staff from industry are seconded to the DoD. However, it is believed that the benefits to DoD in terms of ensuring that it remains a very intelligent customer, make it worth the effort to overcome these difficulties.

HMAS Collins on exercise with *RSS Vengeance*
(RAN photo)

Military staff regularly carry out routine training exercises to ensure that they have appropriate up to date experience. It is important that civilian Defence staff and industry exercise their skills for the same reason.

Maintaining knowledge about the state of the art in the field

In addition to conducting exercises and interchanges with Australian industry, mechanisms need to be in place to ensure that engineers are able to keep in touch with the state of the art in their field nationally and internationally. Although this is certainly done very well indeed by some scientists and research engineers in DSTO, it is essential that it is also done by those engineers in DoD who are contributing directly to the procurement process.

In some cases this may mean international exchanges, however in most cases it will mean programs of dockyard visits, international visits, including relevant conferences, together with encouragement to maintain knowledge regarding state of the art by continuous professional development activities. These could include attending technical sessions run by organisations such as RINA in Australia.

Of course, where engineers are conducting specific exercises which require knowledge of national and international state of the art, then the motivation to learn and keep up to date in the relevant aspects of the state of the art should result.

Feedback from in-service issues

DoD is in a very good position to obtain feedback regarding in-service issues. As an operator of a large fleet of ships it ought to be able to learn from operational issues, often not apparent to engineers who are only designers or builders, without the operational experience. It is essential that mechanisms are in place to ensure that those at the procurement end of the process are able to benefit from those with experience at the operational end of the process.

A key element of new designs is to start with the actual (not just predicted) data from past designs. Hence, it is vital that DoD has a very good repository of such data, and that this be made available to those involved in the procurement process. It is difficult to overestimate the advantages of this data, and the importance of the

Intellectual Property associated with it. For example, data that is designated as commercial-in-confidence at the procurement stage with limited distribution within DoD may effectively become inaccessible or already destroyed before it can be utilised to aid in sustainment or new acquisition projects.

This feedback will assist greatly in ensuring that DoD is an intelligent customer.

Summary
There is no doubt that it is essential that DoD is a highly intelligent customer, and that this means that it has an adequate number of appropriately qualified and well exercised engineers who are in the right position to input to the procurement process.

Conducting the activities listed above to ensure that DoD has, and retains, such high quality engineers is not cheap. However, reducing the level of these activities will lower the expertise of the engineers, and result in the possibility of poor decisions being made during the procurement process. Hence, the training and exercising of high quality engineers throughout their entire careers should be seen as an essential investment in the procurement process.

HMAS Maryborough (RAN photo)

THE NEED TO MAINTAIN A CONTINUOUS STREAM OF WORK TO THE INDUSTRY

DoD is, and always will be, highly reliant on having a strong defence industry in Australia.

The defence industry is highly specialised, and in general it is not possible for those working in this industry to flit between it and other fields. Therefore, a rapid

increase in the size of the industry is difficult to manage, and fraught with dangers as the additional staff and management who would be required would be unlikely to be particularly well experienced in the nuances of the defence issues.

Conversely, if there is insufficient work for the defence industry in Australia it is difficult for the companies to adapt by moving into other fields. They are more likely to downsize, and the expertise of their staff is then lost to the defence field.

Many defence related organisations are subsidiaries of large international companies. These companies will only invest in Australia if there is a good possibility of adequate work. If such work dries up they will make substantial losses, and consequently may be tempted to pull out of Australia. If this occurs it may well be difficult to encourage them to return at a later date when there is more work around.

Many other defence companies are SMEs. If the defence work load dries up then they may well close, resulting in a loss of their capability to the defence industry.

As a result, a very important aspect of dealing with the defence industry must be the provision of a steady stream of work at whatever level the DoD feels is an appropriate level. Peaks and troughs should be avoided wherever possible, and as much notice given to industry when these are unavoidable, to help companies to plan.

HMAS Darwin & *HMAS Sirius* with *USS John S. McCain* (RAN photo)

THE IMPORTANCE OF AUSTRALIAN CONDITIONS FOR THE DESIGN OF WARSHIPS

The RAN has to operate over a vast area in conditions ranging from relatively benign tropical waters to extreme conditions in the Southern Ocean, covering a wide range of tasks with a relatively small number of ships.

Therefore many of the key design features required by RAN ships, such as: range; endurance; seakeeping; and sustainability are quite different to those of other nations. This is particularly the case for non-nuclear submarines, but also applies to surface ships.

HMAS Gascoyne (RAN photo)

Hence, the importance of taking into account Australian conditions is very real when it comes to ship design. This is often very misunderstood when considering Military Off the Shelf (MOTS) ship designs, and statements that because a particular ship design can be operated successfully by some other navy it is the right vessel for the RAN are, unfortunately, often made by the uninformed.

CONCLUSION

As outlined previously, the RINA Australian Division considers that from its perspective procurement of ships for the ADF should take account of:

- The vital importance of Department of Defence being an intelligent customer.
- The need to maintain a continuous stream of work to the industry.
- The importance of Australian conditions for the design of warships.

Should the Committee wish to further pursue these points, we would welcome the opportunity to elaborate on them. In order to maximise the usefulness of any appearance before the Committee, it would be useful if we could be given prior notice of areas to be explored.

CONTACT INFORMATION

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