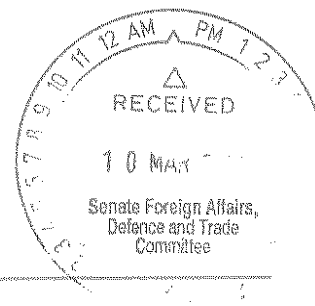


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THE ROYAL INSTITUTION OF NAVAL ARCHITECTS
AUSTRALIAN DIVISION ABN 84 024 326 548



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

Thank you for your letter of 16 November 2005 in which you invited the Division to make a written submission to the inquiry. This letter constitutes the Division's response to that invitation.

Background to RINA

I should state at the outset that the most recent available figures show that the Institution has a world-wide membership totaling 7607 across its various professional, sub-professional and student membership grades. The Australian Division comprises just below 10 percent of this membership. A formal agreement between the Institution and Engineers Australia recognizes RINA as "the paramount international learned society in the field of naval architecture".

Not only does RINA set and administer standards for professional naval architects, but, like other professional societies, its activities provide members with the opportunity to update and maintain their knowledge of their profession and contribute to the development of others of the profession.

The role of naval architects in naval shipbuilding

Naval architects are essentially professional engineers specifically trained in ship design and construction. Their education encompasses the broad areas of science and technology that underpin design and construction of safe, economic, serviceable ships, namely hydrostatics, hydrodynamics, seakeeping, structures, propulsion and systems. Of necessity, the experience gained by graduates in their professional development phase will concentrate on one or more aspects of this skill-set, but the professional naval architect can be expected to possess a general knowledge of all these areas together with an ability to integrate specialist input to produce a ship meeting the client's needs.

Naval architecture is therefore the branch of engineering which provides the technical basis for any shipbuilding project.

Accordingly, naval architects are not only employed by ship designers and ship-builders, but also by ship-owners such as Defence and by classification societies, regulatory authorities and maritime research/educational institutes all of which have a need for expert technical advice on ship design, construction and operation.

In the case of Defence, such advice is essential for it to be an intelligent and informed purchaser of naval ships. Required capabilities within Defence should include abilities to develop an indication of ship size and arrangement to meet a perceived operational role as well as to ensure that operational requirements are fulfilled by a given design, whether under offer or being purchased.

In addition to the role required of Defence naval architects in ship acquisition and construction, their expertise is also a necessary part of sustaining and upgrading the capability of naval ships over their service life. These additional functions, which may be carried by contractors or classification society personnel, include verifying adequacy of ship's stability, hull survey and certification, survey and repair of damage and the design and construction for fitting of additional equipment and structures. Naval architects generally develop the necessary skills for these functions through experience in new ship design and construction.

As mentioned above, the development of a professional naval architect does not happen overnight, but requires a four-year degree course in engineering, supplemented by appropriate "initial professional development" structured training and experience. RINA specifies that graduates should undergo "a period of 2 years of approved training or a sufficient period of experience in lieu of training, and have held a position involving responsibility for the design or execution of important work in naval architecture or maritime engineering for not less than 2 years" in order to meet the minimum requirements for Member status, that is to be a functioning professional.

Further professional experience is necessary to improve an individual's knowledge and standing such that the Institution requires "superior responsibility for at least 5 years in the design or execution of important work in the science or practice of naval architecture or maritime engineering" for recognition as a Fellow, signifying suitability for positions of senior professional responsibility.

The Committee may wish to note that the Institution has a formal agreement with the Defence Materiel Organisation with regard to providing Chartered Engineer status to suitably qualified professional naval architects employed by DMO. The Institution would be pleased to develop similar agreements with other arms of Defence with a view to improving professional standards in a mutually acceptable manner.

Factors affecting availability of professional naval architects

The main message of this submission is that it takes at least 15 years for an individual to be educated, trained and developed into a senior professional naval architect capable of providing Defence with suitable advice in relation to a naval shipbuilding project. Such expertise cannot be switched on and off on a project basis.

A secondary message is that the broad range of knowledge and experience of professional naval architects is also applicable to other areas of engineering, industry, science and technology. Accordingly, naval architects who are adversely impacted by the closure of a shipbuilding project may gain more secure employment outside of the shipbuilding industry and are not readily attracted back into that industry. Continuity of projects is therefore essential to the retention of expertise, the

optimal use of the knowledge and experience that makes up that expertise, and to the smooth functioning of shipbuilding, particularly naval shipbuilding.

Naval shipbuilding within Australia

The Australian Division of RINA wishes to express its support for continuation of the Government's preference for building its naval ships in Australia, thereby providing the necessary continuity of workload for Defence's technical expertise as an intelligent and informed purchaser of such ships. It is highly desirable for this expertise to be available from within the Defence organisation, as obtaining the required advice under contract would not promote the availability of the accumulated experience and expertise for other projects. However, since the expertise of shipbuilders or other contractors can appropriately be used to supplement that within Defence, the Institution does not wish to align itself with any particular source of naval architecture expertise in relation to any particular project.

As indicated previously, the Division's membership is spread across various employers involved naval shipbuilding and related industries. These interests will all be impacted either positively or negatively by decisions made by the Government both as a result of the Committee's Inquiry and in relation to specific naval shipbuilding projects.

Related issues

The Committee should note that the Division made an extensive submission to the *Defence Review 2000* covering related topics to those outlined above. A copy of that submission is attached for reference.

Terms of Reference

In developing this submission, the Australian Division of RINA has taken into account the specific points included in the Committee's Terms of Reference for this Inquiry. However, these points cover matters of economics and industrial capacity which are outside the Institution's expertise in the professional standards of naval architects.

Hearings

Although the main points of this submission are relatively straightforward, the Division would be prepared to attend a hearing of the inquiry should the Committee require.

Yours sincerely



R C Gehling
President
Australian Division of RINA

3 March 2006