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Chief of Navy

Engineering Navy – Progress on the implementation of the Rizzo Review in the Royal Australian Navy

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Good Morning Ladies and Gentlemen. I must admit I was tempted to make this a very short speech – to tell you the Rizzo Reform program formally completed its work on Friday last week, job done!! No more to be said!! But, while the team have done a great job and I am very happy with what they have achieved, it would be more accurate to say the task of rebuilding Navy engineering has entered a new phase.

Today I'd like to set out what Navy has done through its Rizzo Program. I'll set out the importance of engineering for Navy, provide a little background to why we reached a point where we needed to have such a review and the resulting program of rebuilding.

But first, I'm an operator, not an engineer: why am I talking here? My background is in aviation, including flight test work. I managed the Fleet Air Arm after a crisis in engineering governance. Rigour, discipline, transparency and risk management: I get it, I live it and now I teach it to others. So I am well disposed to talk to you about Rizzo.

Engineering in Navy

I suspect that for many here, pointing out the importance of engineering to the Navy enterprise is a statement of the obvious. While that is true to some extent, there is great value in making the statement and setting it out in some detail.

Why? Because if we take engineering for granted then we risk not valuing it appropriately. If we cannot explain how and why it is a fundamental input to capability in the Navy enterprise, then we risk not providing it with adequate resources. In fact, I would say that the origin of Navy's problems with engineering started with it being taken for granted. Navy was unable to articulate to itself and to others why engineering was so important.

For the Navy engineers here, this is one lesson which sits over all the discussion of engineering in Navy. While it is **necessary** for you to be good engineers, it is **not sufficient** for you only to be good engineers. You must also be **articulate** engineers who break the stereotype that engineers cannot communicate. You must be heard.

Engineering and the closely associated logistic disciplines, underpin everything Navy does, from the construction of our vessels, to their through-life maintenance, and their effective operation. While this is a logical truth, the real challenge is to inculcate it into the Navy culture. We must constantly strive to make engineering imperatives a part of everything we do, but we must also appreciate that we do not exist simply for engineering. Navy's purpose is to fight and win at sea, and that needs pragmatic engineers as much as it needs the warfare officers who direct the operations. Let me give you an example: the current submarine debate is not about the operational requirement (that is already agreed); it is about the importance of design intent, manufacturing process, sustainment and engineering governance.

Origins of Rizzo

For those who have not followed engineering in Navy, I'll give you a short history of the Rizzo Reforms – a three-year program, which formally closed on 21 November 2014. Its genesis was in 2011 when it was discovered that the physical state of Navy's amphibious vessels had reached a point where they were unable to meet the operational commitments the Government required of Navy. Most significantly, we did not at the time have a sufficient understanding of what was required to return them to a satisfactory materiel state, how long it would take or how much it would cost. It was not a good position.

As a result, Mr Paul Rizzo was asked to look into repair, maintenance and sustainment practices. The resulting report, the Plan to Reform Support Ships Repair and Management Practices (Rizzo Review Report) had 24 Recommendations. They were all accepted by Government and a three year joint Navy - DMO implementation program, known as the Rizzo Reform Program (the Program), was established.

One of the interesting outcomes of the Rizzo Review was that the Defence organisation was well aware of the state of its maritime sustainment environment. It was clear that this state was not as a result of ignorance, misunderstanding or lack of commitment. Rather the fundamentals of the organisation - people and resources – had been systematically 'underfed' over many years culminating in a situation where staff simply could no longer 'work around' to get the job done.

The scale of the issues confronting the sustainment of the Fleet in 2011 was immense, and the scope of the Rizzo Reform Program reflected this. There was an intimidating task list, with major changes required to culture. Risk, asset, capability, financial and personnel management, policies and processes also needed major changes.

I am pleased to say that over the past three years I have seen Navy and DMO take ownership of these issues and work to remediate them. A great deal of effort has been expended at all levels of the organisation to improve the maritime capability within Defence.

Rizzo was a staged event. The first year addressed near-term priorities. It developed sustainment models for critical areas such as aging vessels, industry partnerships, information communication technology, and engineering functions. The second year looked at the foundations of ship repair and maintenance for both short and long term requirements. The third year has focused on holistic delivery and implementation of sustainable change. It has emphasised providing ongoing business owners within Defence with sustainable, useable products and processes.

The most significant strategic issue to successful implementation of the program remains the resourcing to sustain the fleet. This is something my predecessor and I agreed, and the will to resolve this issue remains. And I ask you to consider this at a time of constrained financial resources. The fact we continue to resource it at the level we do is testament to our commitment.

Progress on Rizzo

While the three year program has finished, there is no doubt this remains a long term commitment to reform the maritime sustainment environment. And I should add, while I speak mainly of Navy, this is a much broader subject. It is more accurate to speak of the Navy enterprise, which includes Navy, the Defence Materiel Organisation and many industry partners in Australia and overseas – it is a true system of systems.

This long term view was also reflected in the way that the Rizzo oversight committee interpreted just what was required to close out its recommendations. The key judgement was that they be 'Materielly Operable' – assessed by evidence based practical outcomes. Of the 24 Recommendations, 22 were closed by 21 November 2014.

The reforms Rizzo has put in place will and indeed must continue. One vehicle that will provide rigour and discipline is our Seaworthiness Management System. Similar in conception to the Airworthiness Management System, this is focussed on making everyone a practitioner of seaworthiness – it is not just an engineers responsibility.

Importantly, Seaworthiness is not a standalone activity. It is integrated as one of the pillars of Navy's cultural reform activity, New Generation Navy. Seaworthiness provides a systemic drive for the ongoing implementation of Rizzo reforms. Seaworthiness drives Navy to understand the

design and design intent of its equipment. This drive for understanding informs our operations, our maintenance and our sustainment. It also informs our risk management.

Two more drivers for change are the Naval Engineering Strategic Plan 2013 – 2017 and the Naval Engineering Future State Blueprint which were released in August last year. The *Naval Engineering Strategic Plan* sets the strategic direction for Naval Engineering. It defines the goals that are to be pursued in order for Naval Engineering to achieve its vision to: "Deliver seaworthy materiel to enable us to Fight and Win at Sea." The document provides a rolling five year Strategic Plan for Naval Engineering.

The *Naval Engineering Future State Blueprint* on the other hand provides a high level statement of the improvements planned to occur across the Naval Engineering function. This foundation, which has not previously existed, will be used to give life to the goals set in the Strategic Plan.

Rizzo has also rolled out a number of foundational pillars for Naval Engineering. These include the establishment of an Authorised Materiel Seaworthiness Delivery Organisation, the Materiel Seaworthiness Functional Master Set, and improvements in the Naval Engineering workforce.

Structure

Let's look a little at the structure. Naval platforms are sophisticated pieces of equipment. The delivery of materiel seaworthiness for any particular platform, class or group requires the coordination of Navy, the broader Defence Organisation, DMO and Industry personnel. Each of these organisations has responsibilities and performs functions that **combine** to achieve the delivery of seaworthy materiel.

The Authorised Materiel Seaworthiness Delivery Organisation, or AMSDO, is the 'virtual' organisation that groups those entities that are accountable and responsible for the functions that deliver seaworthy materiel. Its role is to "reduce fragmentation, increase authority and clarify accountability." The foundation piece of the AMSDO is the Materiel Seaworthiness Functional Master Set, which provides an authoritative common standard as to what is required from a functional and outcome perspective to deliver seaworthy materiel to the Capability Manager. It articulates "what" Naval Engineering functions are necessary for the delivery of Seaworthy Materiel.

A description of the AMSDO is that it clarifies accountability through the appointment accountable engineers. Each of these officers will be empowered by a Technical Seaworthiness Management Instruction that specifies their role and authority. Each AMSDO will have a Class Lifecycle Engineer Officer (CLEO) who is accountable to:

- the Strategic Capability Manager for the effective and efficient delivery of seaworthy ships and associated materiel;
- Head Navy Engineering for ensuring the AMSDO performs the functions articulated in the Materiel Seaworthiness Functional Master Set; and to
- Director General Technical Seaworthiness and Director General Logistics Navy for compliance with relevant Seaworthiness Instructions.

Within the AMSDO there will also be an Authorised Engineering Organisation and an Authorised Maintenance Organisation. The Senior Managers may be a uniformed or civilian Defence engineer or an industry engineer as appropriate. There will also be an Authorised Support Organisation that provides logistic support products. Finally, there could also be Enabling Organisations in the AMSDO that include any Commonwealth or Industry organisation that provides specific products and services. It sounds a lot like an airworthiness system, inculcating discipline.

Between now and the end of 2015, the intention is to establish nine AMSDOs: Afloat Support (for large ships such as tankers), *Anzac* Class FFH, Hydrographic Ships, *Armidale* Class PB, *Canberra* Class LHD, *Adelaide* Class FFG, Mine Warfare and Clearance Diving, *Collins* Class SSK, and *Hobart* Class DDG.

People

Let me know turn to people – an essential element here. Any "rebuilding" of naval engineering has an obvious personnel component. The technical APS workforce in both Navy and the DMO remain critical to achieving benefits required of the program. It is identified in the Naval Engineering Blueprint that the Naval Engineering Career Continuum consists of four phases: induction, operational, directive and strategic. Within the Directive phase careers are further streamed into sustainment, capability acquisition and specialist functions.

This continuum directly addresses one of the Rizzo Recommendations that "DMO and Navy should develop an innovative and comprehensive through life career plan for the recruitment, retention and development of their engineering talent". In broad terms the plan aims to:

- Manage positions, posting, training and development opportunities to align to the career continuum;
- Optimise the career management and utilisation of the Defence civilian workforce, drawing from professionals, para-professionals and associates so that deep 'in-house' technical mastery is both developed, retained, and utilised in support of platforms; and

- To identify and develop Industry partnerships, to foster the skills we seek from Industry to redress skills and knowledge gaps in our own workforce. In combination, a truly integrated workforce. All of these plans were deliberately constructed so that Naval Engineers would have the skills and competencies to fulfil both their technical and management obligations.

A range of initiatives are underway - many haven't been done before or are in response to a system that had such gaps that a complete restart was required. They include initiatives such as those listed below.

- A Correlation and Prioritisation Tool for the Naval Engineering Workforce that has been developed to better understand the functions being undertaken by the integrated workforce.
- A career pathway that maximises the work value against critical and significant engineering functions. It includes the professional competencies and experiential growth necessary to be able to perform specific Naval Engineering roles and functions. Various career paths and requirements will be mapped to achieve 'Head Mark' positions providing guidance in talent career management.
- Other workforce strategies will include training, education, industry outplacements opportunities, or embedding of industry resources within Naval Engineering organisations to close experiential growth deficiencies for critical skills and competencies.
- In addition, Enhanced Career Management Processes will provide increased focus and guidance in achieving organisational requirements. Significantly for an organisation like Navy, not only should this assist workforce sustainability, it will increase the depth of workforce talent.

All of these initiatives in the Engineering workforce area have occurred because Defence recognises that a proficient supporting technical and engineering workforce is critical if we are to send ships to fight and win at sea.

Industry involvement.

To date much of Rizzo has focused on establishing robust internal Naval Engineering systems and foundations. The role of industry has always been recognised as a crucial component, and there will be more direct engagement with Industry over the next 18 months.

In future specialist expertise providing the Naval Engineering Functions articulated in the Functional Master Set will be provided by the Naval Technical Bureau. The Bureau is a technology focussed organisation providing products and services to the AMSDO to ensure the

delivery of seaworthy materiel. We accept that this expertise does not reside completely within Navy, nor do we expect that it should. Therefore the Bureau will be a combination of Navy, DMO and Industry, and may exist as a real or virtual organisation.

Indeed Industry remains an important cornerstone of the work being done in Navy and DMO. I am pleased to see that Industry has been viewed as an important stakeholder throughout the term of the Program. Continued interaction between all parts of the system is required to ensure alignment of understanding and to guard against broken linkages identified in the Rizzo Review. Head Naval Engineering last year conducted an industry workshop at the Sea Power Conference. I expect this type of engagement to continue.

Future Challenges

Let me turn to future challenges and, of course, there are a few.

Most fundamentally, we must resource our engineering functions appropriately. Importantly, we know have the framework to articulate what is required to do that. We can understand the implications of changes in resource allocation and we can plan and act accordingly.

But with renewed engineering discipline and structure of Seaworthiness, we must guard against inflexibility. These are important judgements to make – discipline is good, inflexibility is not. People will avoid an inflexible system but people will be guided by a disciplined system.

This is very important to me because I strongly believe that two other characteristics we must have are agility and the ability to innovate. Agility is important not just at an individual level, but at an organisational level – it enables us to respond more quickly than an adversary and it brings warfighting advantages. Its all about capability.

The ability to innovate is difficult if not impossible to direct, but I think it is the logical product of a disciplined and agile system – the willingness to try new approaches based on a deep knowledge of design and design intent is something I wish to encourage in Navy. Naval engineering needs characteristics such as these because navy engineers are warfighters just as much as any other part of the Navy.

I am glad to see these characteristics of agility and innovation in some pilot workforce initiatives such as Mid Career Entry and Dual Employment, which are highly applicable to our Rebuild Engineering and Technical Mastery journey. Mid Career Entry allows Navy to engage specialist via the Reserve to provide critical/specialist skills. Dual Employment provides a means for the Defence and Industry workforce to move between the two to respond to the peaks and

troughs that flow from delivering the Defence Capability Program We are doing this through the existing mechanism of the Navy Reserve.

Conclusion

To conclude, I consider the Rizzo Reform Program to be a success. This success is all the more impressive when you look at the scale of the changes and the fragmented environment from which the reform effort started. I am happy to see the Naval Engineering community working hard to build on the firm Rizzo foundations that will take it forward. Reflecting this, Defence has set aside an annual Rizzo Reform Program budget of $25m for 10 years, to finalise the program objectives as well as providing critical resourcing to sustain the fleet.

Before I finish, I would also like to note one other positive development for Navy Engineering.

As I hope you can see from my presentation today, professional mastery and continuous professional development are important for Navy engineers – indeed, not just for engineers, but for all within the engineering community. I am therefore glad to see that Engineering Australia has recognised the quality of Navy's professional engineering training and development.

I welcome Engineers Australia's view that engineers gaining qualifications through the Royal Australian Navy are operating to the highest international standards and I applaud their decision to recognise them as a Chartered Professional Engineers. I have no doubt that by providing an additional path for professional recognition for Navy's engineers, it will be beneficial for both Navy and Engineers Australia. Importantly for Navy, it is one achievement in a multi faceted approach aimed at providing recognition for our community of professionals, para-professionals and associates. Ladies and Gentlemen, thank you for your attention.