

14

THE FUTURE NAVY



- Technological and social change present both challenges and opportunities for navies.
- Warfighting capabilities must be integrated across all dimensions.
- People will remain the Most Important Factor.

Naval forces depend on technology, and are thus sensitive to technological change and the challenges and opportunities it offers. War at sea has long been a continual seesaw between offence and defence, particularly since the advent of asymmetrical threats just over a century ago in the form of the self-propelled torpedo and then the submarine. The thrust of recent technological development and particularly that related to network concepts has increased the sophistication of threats, but at the same time it has created many opportunities for the future employment of warships and enhanced the utility of navies. Some aspects have special significance for a medium sized power such as Australia.

BALANCING PRESENT AND FUTURE

One continuing conundrum is the requirement to balance the allocation of resources between current capability and future development. Despite the rapid advances in information systems and the increase in computer processor power, the development and acquisition of new technology for maritime combat is relatively protracted, particularly when compared with the speed at which the strategic environment can change. Moreover, the useful lives of warships have been increasing progressively over the past fifty years. This has meant that ships acquired within one strategic context have been routinely used under completely different circumstances, often carrying very different weapon and sensor packages than those with which they were first commissioned.

There is no simple division between the existing force, the enhanced force and the future force, because at any point the requirement for the employment of combat capabilities may emerge at short notice, and almost certainly at less notice than is required for the acquisition of these capabilities from scratch. The various resources required to achieve real capability in maritime warfare have already been noted in Chapter 12. Navies must therefore ensure that they maintain appropriate

levels of current capability for preparedness while ensuring that they acquire sufficient future capability to avoid block obsolescence. This effectively means that naval force development must be regarded as a continuum, rather than a series of distinct steps marked by ship and aircraft acquisition.



When they enter service after 2014, the Hobart class destroyers will be among the world's most capable multi-role warships. Transformational weapons and sensors will allow them to fully exploit the potential of networked systems (AWD Alliance).

FUTURE TRENDS

The increased effectiveness of information exchange networks and of long range surveillance systems presents both opportunities and challenges for naval forces. The same technology which allows for the early detection and tracking of surface, air and sub-surface elements also allows those same units to maintain battlespace awareness and thus the ability to employ their combat capabilities at short notice without the requirement to transmit. The key issue of maritime combat is no longer one of weapons capability but of knowledge.

Advances in capabilities are being driven by the information revolution and related technologies. A high priority is being placed by the ADF on the development of knowledge dominance. This relates to the effective exploitation of information technologies to allow Australia to use its relatively small combat forces to maximum effect. Knowledge dominance is also about using that knowledge effectively to make and implement faster and better decisions than the adversary. Knowledge dominance will exist when there is a comparative advantage in those factors that influence decision making and its effective execution.

Knowledge dominance is not only technological but has many influences. It relies upon effective organisation and doctrine, and upon properly trained and educated people who have the confidence to work within a culture which fosters initiative and professional mastery. Collectively, these factors place great emphasis on non-technological aspects.

Guided Missile Destroyers, 1965-2001

Designed in the 1950s and ordered in the early 1960s to provide limited area air defence for the Australian fleet, the three *Perth* class guided-missile destroyers (DDGs), provide an excellent example of the long-term flexibility of a well designed warship. All three were employed during the Vietnam War providing maritime interdiction and naval gunfire support. During the 1970s and 1980s the ships received regular weapon, sensor and C2 upgrades, and remained extremely effective ships. One, HMAS *Brisbane* (II), served in the 1991 Gulf War providing air defence and fighter control for US Navy aircraft carriers. The last DDG continued to serve until 2001, her final withdrawal due to high personnel requirements and the increasing cost of mechanical upkeep rather than the obsolescence of her warfare systems.

PEOPLE

People will thus remain the most important factor. Demographics and social change mean that the competition for talented recruits will become increasingly intense. The ADF, and the RAN in particular, face great challenges in recruiting and retaining the men and women of quality that will be needed. Meeting these challenges, and becoming the employer of choice, will require a process of continual adaptation and improvement that balances the needs of people against the demands of maritime operations. This will be a vital element of the Navy's plans for the future.



The RAN must continue to place the greatest store in the quality of its people.

THE SEA, THE LAND AND THE AIR

Technological innovation has increased the potential of warships to provide support to operations ashore and in the air, as well as to project power in their own right. Force networking, particularly in conjunction with airborne systems, means that warships are continuing to improve their capabilities to look over the horizon, around terrain and to cover inland areas with standoff weapons.

UAVs, some of which can be deployed from ships, show great promise for a wide range of uses, as do unmanned underwater vehicles. Amphibious forces will further exploit the benefits of littoral manoeuvre by conducting amphibious operations from over the horizon, employing embarked helicopters and landing craft.

These developments maximise the potential of naval task groups to achieve strategic effects and will be particularly important for the ADF as it seeks to transform from a joint to an integrated force. The operations of land force and air power elements have much to gain from sea power, and the ADF will accomplish most when all its components work together in as seamless a manner as possible.

Yet developments in networking and long-range precision munitions also mean that traditional linkages between particular platforms and their combat capabilities are becoming weaker. A precision weapon can equally be fired from a surface combatant or submarine, from a piloted or unmanned aircraft, or from fixed or mobile platforms on land. Thus the platforms operated by the individual Services must increasingly be thought of as components of joint systems, working together to achieve integrated effects. The enablers for operations, such as C2, will likewise need to be considered as capabilities which are ubiquitous to all environments and which support the activities of all elements. In these circumstances, the inherent capabilities of platforms, and in particular their flexibility, will be critical in determining which are most suitable in the future.



Recent ADF equipment acquisitions, such as the Wedgetail AEW&C aircraft, will provide significant improvements in detection and engagement ranges for surface combatants, and do much to hasten the ADF's transition to an integrated force.

IMPLICATIONS FOR A MEDIUM POWER

Maintaining and operating an effective navy is highly demanding of national research, industrial and technological capabilities. Swiftly applying emergent technology is even more difficult, particularly as it brings with it the prospect of risk and failure. But properly directed expenditure on naval systems and platforms can itself encourage industrial growth and technological development, creating additional strengths and opportunities for a nation's economy. For a medium sized power with limited resources, such as Australia, a careful balance will need to be drawn between the achievement of combat power and the development of national industry.

Hence, choices need to be made between attempting innovation solely on a national basis, engaging in cooperative development with friendly and allied nations and accepting without substantial modification the systems developed by others. For Australia, this means the development of a much more sophisticated approach to the problem of maintaining defence capability than has traditionally been employed, particularly when we were able to rely upon great power alliances for much of the infrastructure and technical and doctrinal innovations that modern navies, and sophisticated combat forces in general, require. This challenge, it should be emphasised, is not one only for the RAN.



Sea control is multi-dimensional in nature (CEA Technologies).

What must forever be kept in mind is that the physics and economics of transportation will always require an overwhelming proportion of military and commercial equipment and goods to travel by sea rather than by air. Although the tactics of war at sea will continue to change, Australia's need to achieve sea control will remain, simply because any adversary may have some capacity to interfere with our seaborne communications.



The future RAN will continue to rely on effective support from the families of its people.