

AUSTRALIA'S NAVAL AVIATION CAPABILITY

As a matter of urgency, the Government will acquire a fleet of at least 24 new naval combat helicopters to provide eight or more aircraft concurrently embarked on ships at sea. These new aircraft will possess advanced ASW capabilities, including sonar systems able to be lowered into the sea and air-launched torpedoes, as well as an ability to fire air-to-surface missiles.

Defending Australia in the Asia Pacific Century:
Force 2030¹

Australia's future naval aviation capability is given considerable priority in the recent Defence White Paper. In order to understand why naval aviation is vital, we first need to learn more about the Fleet Air Arm (FAA) and what it contributes to the joint force.



'Unrivalled' is the FAA motto. Whether operating at sea or ashore the men and women of the FAA are elite members of the RAN (Defence)

The story of aviation in the Royal Australian Navy (RAN) divides naturally into three distinct chapters. The first runs from World War I to the end of World War II. It is characterised largely by cruiser-borne reconnaissance aircraft, but includes the use of fighter aircraft launched from gun turret platforms on one way missions to counter the Zeppelin and sea plane threat during 1917-18. The second chapter covers the era of carrier aviation, spanning from 1947 through to the early 1980s and encompassing participation in the Korean War, the introduction of both jets and helicopters at sea, and, as an adjunct, the RAN's helicopter activities in Vietnam. The third chapter covers the modern, all-helicopter era with their contribution to Australian Defence Force (ADF) military and peacekeeping operations around the globe.

In the modern era, the FAA's mission remains simply to provide the aviation capabilities required to fight and win at sea. To do this in the Australian context, the FAA is structured around the embarked flight in one of any of Australia's air capable warships. In its elemental form, an embarked flight consists of a single aircraft, 4-6 aircrew, 10-14 maintainers and a logistic support package that enables extended independent operations for up to six months. The flight is posted to and fully integrated within the parent ship

and remains throughout under the command of the ship's commanding officer.

A modern warship has significant power projection capabilities, yet the range at which targets may be detected and identified with onboard sensor systems remains limited by the fundamental laws of physics. Naval combat helicopters, fitted with radar, active and/or passive sonar, magnetic anomaly detection, forward looking infra-red and electronic support measures systems, as well as a range of anti-surface and anti-submarine weapons, significantly extend a ship's detection ranges, maximising offensive reach and reducing vulnerability to unalerted attack.

Today, the RAN's aviation force, which is home-based at HMAS *Albatross* - Nowra, NSW, comprises:

- The Commander Fleet Air Arm (COMFAA) and his headquarters.
- 723 Squadron operating the AS-350BA Squirrel primarily in the training role.
- 816 Squadron, operating the S-70B-2 Seahawk primarily in the anti-submarine role.
- 817 Squadron, operating the Sea King Mk50A/B primarily in the utility role.
- The Naval Air Station with its associated aviation support facilities.

COMFAA is responsible to the Fleet Commander for providing a naval aviation capability and to the Chief of Air Force, through the Fleet Commander, for operational airworthiness. The Squadrons are commanded by COMFAA and are responsible for training maintainers and aircrew for embarked flights and providing technical and operational support to the flights as required.

Because helicopter flights regularly embark aboard RAN ships, FAA personnel receive general service training in addition to their specialist aviation training. This training includes shipboard damage control, first aid, survival at sea and life at sea experience. It ensures that the embarked aviation complement can fully integrate with the ship's routines and contribute to whole ship daily and emergency evolutions.

Military Role

RAN helicopters perform a range of military tasks in support of operations. The principal role for embarked combat helicopters is anti-submarine warfare (ASW). Submarines pose one of the greatest threats to surface ships, due in part to the difficulty of detection using ship-based systems. Helicopters, such as the Seahawk, are equipped with a range of advanced systems providing the ability to detect, track, classify, identify and attack submarines while the parent ship remains outside the engagement range of submarine-launched torpedoes. The ability to detect the submarine at range allows for the threat to be neutralised either by attacking the submarine or simply by avoiding the threat area.

Using their suite of sensors including visual search, helicopters can also detect, track, classify and identify surface contacts in both the open-ocean and the littoral, usually beyond the limit of the force's weapons coverage. While reducing the risk to the force, the helicopter offers a range of responses ranging from shadowing targets of interest (permitting the force to avoid confrontation), through to engagement with an airborne weapon, or providing targeting for ship-launched weapons at over-the-horizon ranges. Seahawks, although optimised for ASW, also provide a credible anti-surface detection and targeting capability for the Harpoon anti-ship missile carried by the RAN's major surface combatants.

Additional to their warfighting capabilities, if suitably configured, all RAN helicopters have the capacity to move equipment, stores and personnel. Stores and equipment may be transferred as an external load hung from a cargo hook or, like personnel, carried in the helicopter cabin and delivered by landing on or winching down to the ship.

With the withdrawal of the Sea King utility helicopter at the end of 2011, the MRH90 will become the Navy's primary maritime support helicopter. The Navy's MRH90s will be identical to those operated by the Army and, in combination with the new *Canberra* class Landing Helicopter Dock (LHD) amphibious ships, will provide a quantum increase in the speed of delivery of troops and equipment in an amphibious operation. The versatility of the aircraft allows far more rapid lodgement, re-supply, and casualty evacuation than the traditional landing craft. Furthermore, the helicopter is not limited to beach delivery; using ship-to-objective manoeuvre, helicopters can provide greater options to the amphibious force commander.

Constabulary Role

Naval helicopters are well suited to provide support to various maritime constabulary operations. After 1990 the RAN maintained an ongoing and significant role with the Maritime Interception Force in the Middle East. Embarked helicopters offered several complementary capabilities. These included providing top cover with a cabin-mounted machine-gun and rapid insertion of a boarding party using 'fast rope' techniques. In essence, the aircraft offered a range of responses applicable to the level of compliance exhibited or expected from a target vessel. This flexibility has more recently been of great value during counter-piracy operations.

Additionally, RAN helicopters can provide valuable support to local civil authorities. Capabilities include bush fire and flood assistance, surveillance and interdiction, resource management and protection and maritime barrier operations. The systems and versatility that suit the helicopter for military tasks are also valued in Search and Rescue. The FAA is regularly called upon to support both military and civilian search efforts. The Seahawk, Sea King and MRH90 are all highly capable search units over land and over water. All are fitted with rescue winches, providing a rescue capability where landing is not practicable, such as over water or dense forest.

Diplomatic Role

The FAA also supports the RAN's wider diplomatic activities. The helicopter's personnel and cargo carrying capabilities, specific communications and detection

capabilities, and their ability to operate from relatively small unprepared sites, ideally suit these platforms for evacuation, humanitarian assistance and disaster relief operations overseas.



A Sea King delivers stores during a disaster relief operation (Defence)

Training

The RAN relies on the Royal Australian Air Force to provide basic aircrew and technician training across a number of joint aviation schools. At Nowra the Squirrel helicopters are essential for FAA training. Training also involves the Naval Aviation Sea Survival Centre, a range of simulators and extensive helicopter specific training within each FAA squadron. Professional skills are then advanced and maintained through experience with embarked helicopters deployed at sea. In future, the naval aviation training continuum will include rotary-wing training under a new integrated Helicopter Aircrew Training System.

The Future Force

The FAA is entering a new era, not only with the introduction of the MRH90, but most significantly with the replacement of the existing S-70B-2 Seahawks with at least 24 highly capable naval combat helicopters that will greatly enhance the RAN's ability to control the maritime battlespace. Through an accelerated procurement process, these new combat helicopters are currently planned to enter service from 2014.

By 2020, the FAA will be a fully integrated component of the ADF's system of systems, better capable of playing its part in maintaining sea control and projecting Australian maritime power at a distance. Nevertheless, naval aviation does not stand still and it will continue to evolve. Facing newly emergent high- and low-technology threats, the future FAA will likely include large numbers of autonomous and unoccupied aviation vehicles. This will bring new challenges, but Australian naval aviation has adapted successfully in the past and will undoubtedly continue to do so.

¹ Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 72.

